Soil Survey Investigations Report No. 15

Soil Survey Laboratory Data and Descriptions for Some Soils of...

...TENNESSEE

SOIL CONSERVATION SERVICE U.S. DEPARTMENT OF AGRICULTURE
In cooperation with
TENNESSE AGRICULTURAL EXPERIMENT STATION

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1. SAMPLE COLLECTION AND PREPARATION
   A. Field sampling
      1. Site selection
      2. Soil sampling
         a. Stony soils
   B. Laboratory preparation
      1. Standard (airdry)
         a. Square-hole 2-mm sieve
         b. Round-hole 2-mm sieve
      2. Field moist
      3. Carbonate-containing material
      4. Carbonate-indurated material
2. CONVENTIONS
   A. Size-fraction base for reporting
      1. <2-mm
      2. <size specified
   B. Data-sheet symbols
      tr: trace, not measurable by quantitative procedure used or less than reportable amount
      tr(s): trace, detectable only by qualitative procedure more sensitive than quantitative procedure used
      analysis run but none detected
      -(s): none detected by sensitive qualitative test
      blank: analysis not run
      nd: analysis not run
      <: less than reported amount or none present
3. PARTICLE-SIZE ANALYSES
   A. <2-mm fraction (pipet method)
      1. Airdry samples
         a. Carbonate and noncarbonate clay
      2. Moist samples
         a. Carbonate and noncarbonate clay
   B. >2-mm fraction
      1. Weight estimates
      2. Volume estimates
4. FABRIC-RELATED ANALYSES
   A. Bulk density
      1. Saran-coated clods
         a. Field state
         b. Airdry
         c. 30-cm absorption
         d. 1/3-bar desorption I
         e. 1/3-bar desorption II
         f. 1/3-bar desorption III
         g. 1/10-bar desorption
         h. Ovendry
      2. Paraffin-coated clods
         a. Ovendry
      3. Cores
         a. Field moist
      4. Nonpolar-liquid-saturated clods
   B. Water retention
      1. Pressure-plate extraction (1/3 or 1/10 bar)
         a. Sieved samples
         b. Soil pieces
         c. Natural clods
         d. Cores
      2. Pressure-membrane extraction (15 bars)
      3. Sand table absorption
      4. Field state
      5. Airdry
   C. Water-retention difference
      1. 1/3 bar to 15 bars
      2. 1/10 bar to 15 bars
   D. Coefficient of linear extensibility
      1. Dry to moist
   E. Micromorphology
      1. Thin sections
         a. Preparation
         b. Interpretation
         c. Moved-clay percentage
5. ION-EXCHANGE PROPERTIES
   A. Cation-exchange capacity
      1. NH_4OAc, pH 7.0
         a. Direct distillation
         b. Displacement, distillation

5A. Cation-exchange capacity (cont.)
      2. NaOAc, pH 8.2
         a. Centrifuge method
      3. Sum of cations
         a. Acidity by $BaCl_2$-TEA, pH 8.2; bases by NH_4OAc, pH 7.0
      4. KOAc, pH 7.0
      5. $BaCl_2$, pH 8.2
         a. Barium by flame photometry
   B. Extractable bases
      1. NH_4OAc extraction
         a. Uncorrected
         b. Corrected (exchangeable)
      2. KCl-TEA extraction, pH 8.2
   C. Base saturation
      1. NH_4OAc, pH 7.0
      2. NaOAc, pH 8.2
      3. Sum of cations
   D. Sodium saturation (exchangeable Na pct.)
      1. NaOAc, pH 8.2
      2. NH_4OAc, pH 7.0
   E. Sodium adsorption ratio
6. CHEMICAL ANALYSES
   A. Organic carbon
      1. Acid-dichromate digestion
         a. $FeSO_4$ titration
         b. CO_2 evolution, gravimetric
      2. Dry combustion
         a. CO_2 evolution I
         b. CO_2 evolution II
      3. Peroxide digestion
         a. Weight loss
   B. Nitrogen
      1. Kjeldahl digestion
         a. Ammonia distillation
      2. Semimicro Kjeldahl
         a. Ammonia distillation
   C. Iron
      1. Dithionite extraction
         a. Dichromate titration
         b. EDTA titration
      2. Dithionite-citrate extraction
         a. Orthophenanthroline colorimetry
      3. Dithionite-citrate-bicarbonate extraction
         a. Potassium-thiocyanate colorimetry
      4. Pyrophosphate-dithionite extraction
   D. Manganese
      1. Dithionite extraction
         a. Permanganate colorimetry
   E. Calcium carbonate
      1. HCl treatment
         a. Gas volumetric
         b. Manometric
         c. Weight loss
         d. Weight gain
         e. Titrimetric
      2. Sensitive qualitative method
         a. Visual, gas bubbles
   F. Gypsum
      1. Water extract
         a. Precipitation in acetone
   G. Aluminum
      1. KCl extraction I, 30 min
         a. Aluminon I
         b. Aluminon II
         c. Aluminon III
         d. Fluoride titration
      2. KCl extraction II, overnight
         a. Aluminon I
      3. NH_4OAc extraction
         a. Aluminon III
      4. NaOAc extraction
         a. Aluminon III
   H. Extractable acidity
      1. $BaCl_2$-triethanolamine I
         a. Back-titration with HCl
      2. $BaCl_2$-triethanolamine II
         a. Back-titration with HCl
      3. KCl-triethanolamine
         a. Back-titration with NaOH
   I. Carbonate
      1. Saturation extract
         a. Acid titration

6. CHEMICAL ANALYSES (cont.)
   J. Bicarbonate
      1. Saturation extract
         a. Acid titration
   K. Chloride
      1. Saturation extract
         a. Mohr titration
         b. Potentiometric titration
   L. Sulfate
      1. Saturation extract
         a. Gravimetric, $BaSO_4$
      2. NH_4OAc extraction
         a. Gravimetric, $BaSO_4$
   M. Nitrate
      1. Saturation extract
         a. FDS acid colorimetry
   N. Calcium
      1. Saturation extract
         a. EDTA titration
      2. NH_4OAc extraction
         a. EDTA-alcohol separation
         b. Oxalate-permanganate I
         c. Oxalate-permanganate II Fe, Al, and Mn removed
         d. Oxalate-cerate
      3. NH_4Cl-EtOH extraction
         a. EDTA titration
      4. KCl-TEA extraction
         a. Oxalate-permanganate
   O. Magnesium
      1. Saturation extract
         a. EDTA titration
      2. NH_4OAc extraction
         a. EDTA-alcohol separation
         b. Phosphate titration
         c. Gravimetric, $Mg_2P_2O_7$
      3. NH_4Cl-EtOH extraction
         a. EDTA titration
   P. Sodium
      1. Saturation extract
         a. Flame photometry
      2. NH_4OAc extraction
         a. Flame photometry
   Q. Potassium
      1. Saturation extract
         a. Flame photometry
      2. NH_4OAc extraction
         a. Flame photometry
   R. Sulfur
      1. $NaHCO_3$ extraction, pH 8.5
         a. Methylene blue
   S. Total phosphorus
      1. Perchloric-acid digestion
         a. Molybdovanadophosphoric-acid colorimetry
7. MINERALOGY
   A. Instrumental analysis
      1. Preparation
         a. Carbonate removal
         b. Organic-matter removal
         c. Iron removal
         d. Particle-size fractionation
      2. X-ray diffraction
      3. Differential thermal analysis
   B. Optical analysis
      1. Grain studies
   C. Total analysis
      1. Chemical
      2. X-ray emission spectrography
   D. Surface area
      1. Glycerol retention
8. MISCELLANEOUS
   A. Saturated paste, mixed
      1. Saturation extract
         a. Conductivity
      2. Conductivity, saturated paste
   B. Saturated paste, capillary rise
      1. Saturation extract
         a. Conductivity
   C. pH
      1. Soil suspensions
         a. Water dilution
         b. Saturated paste
         c. KCl
   D. Ratios
      1. To total clay
      2. To noncarbonate clay
      3. Ca to Mg (extractable)

PREFACE

This publication is one in a new U.S. Department of Agriculture series established to preserve and make available technical information resulting from soil survey investigations. These investigations have been going on for about two decades. Data from them have been distributed in unpublished form to those immediately concerned. Some of the data and descriptions have appeared in technical journals, in regional bulletins, in USDA technical bulletins, and in the text of published soil surveys. But most were not available to all who might use them.

We intend to publish in this series all data from the soil survey laboratories that form reasonably complete characterizations of soils. Already-assembled data and descriptions will be published just as rapidly as they can be prepared for printing. Fragmentary data collected as reference points for specific soil surveys will not be included.

While these data were being assembled, there were many changes in laboratory methods. Some were improved and some new ones were devised. Consequently, laboratory data for different soils cannot always be directly compared without allowance for the method.

The method used is indicated by symbol in the column headings of the data table. These symbols are identified in the code sheet on the opposite page. Each method is described in the first number of this series, "Soil Survey Laboratory Methods and Procedures for Collecting Soil Samples," SSIR No. 1.

Ways of describing soils have also changed. Soil descriptions have become explicit on more and more features. The systems for designating horizons and for classifying soils have been changed.

The soil descriptions published here were prepared as working documents to meet a specific need of a soil survey at the time the soil samples were collected. The soil scientists who wrote them had no idea they would be published. Editing has been limited for the most part to that necessary for conformance to the "Soil Survey Manual." Field textural estimates have been retained, even though some are at variance with the laboratory data, because the field estimates themselves are important data.

There were several reasons for sampling these soils. Some were sampled to study soil genesis, some to facilitate classification, and some to obtain data to permit more useful interpretations. Those sampled for genesis or classification studies do not always fit neatly into our present concepts of soil series. Partly because of these studies, our concepts of some soil series have been modified. As a consequence, the soil series name assigned a soil at the time of sampling is not always the name that would be assigned today. Soil series names in this publication follow 1965 series definitions.

Soil Survey
Soil Conservation Service

TENNESSEE

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Albertville	Putnam	S59Tenn-71-22	3
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	Blount	S53Tenn-5-17	7
Allen	Blount	S53Tenn-5-7	9
	Blount	S53Tenn-5-8	11
Armour	Coffee	S54Tenn-16-6	13
	Coffee	S54Tenn-16-16	15
	Coffee	S55Tenn-16-29	17
	Coffee	S55Tenn-16-30	19
Baxter	Coffee	S54Tenn-16-2	21
	Coffee	S54Tenn-16-13	23
Beason	Hardin	S59Tenn-36-8	25
	Hardin	S59Tenn-36-10	27
Bodine	Coffee	S54Tenn-16-7	29
	Coffee	S54Tenn-16-9	31
Bosket	Dyer	S61Tenn-23-12	33
	Dyer	S61Tenn-23-13	35
Burton	Blount	S53Tenn-5-27	37
	Blount	S53Tenn-5-28	39
	Blount	S53Tenn-5-29	41
Calloway	Fayette	S59Tenn-24-2	43
	Fayette	S59Tenn-24-5	45
	Henderson	S55Tenn-39-1	47
	Henderson	S57Tenn-39-7	49
Collins	Fayette	S59Tenn-24-3	51
	Fayette	S59Tenn-24-8	53
	Fayette	S59Tenn-24-9	55
	Fayette	S59Tenn-24-10	57
	Fayette	S59Tenn-24-11	59
Cumberland	Blount	S53Tenn-5-13	61
	Blount	S53Tenn-5-18	63
	Coffee	S55Tenn-16-27	65
	Coffee	S55Tenn-16-28	67
Dandridge	Blount	S53Tenn-5-5	69
	Blount	S53Tenn-5-6	71
Decatur	Blount	S53Tenn-5-3	73
	Blount	S53Tenn-5-4	75
Dekoven	Dyer	S61Tenn-23-8	77
	Dyer	S61Tenn-23-9	79
Dellrose	Coffee	S55Tenn-16-25	81
	Coffee	S55Tenn-16-26	83
Dewey	Coffee	S54Tenn-16-3	85
	Coffee	S54Tenn-16-14	87
Dickson	Coffee	S54Tenn-16-4	89
	Coffee	S54Tenn-16-10	91
Dulac	Henderson	S57Tenn-39-9	93
	Henderson	S57Tenn-39-10	95
Dunmore	Blount	S53Tenn-5-1	97
	Blount	S53Tenn-5-2	99
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	Hardin	S59Tenn-36-7	103
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	Blount	S53Tenn-5-23	107
Fairmount	Loudon	S58Tenn-53-7	109
	Loudon	S58Tenn-53-8	111
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	Henderson	S57Tenn-39-11	115
Forestdale	Dyer	S61Tenn-23-14	117
	Dyer	S61Tenn-23-15	119
Freeland	Henderson	S55Tenn-39-6	121
Freeland	Henderson	S57Tenn-39-12	123
Fullerton	Blount	S53Tenn-5-12	125
	Blount	S53Tenn-5-15	127
Greendale	Coffee	S54Tenn-16-5	129
	Coffee	S54Tenn-16-15	131
Grenada	Fayette	S59Tenn-24-1	133
	Fayette	S59Tenn-24-4	135
Guthrie	Coffee	S54Tenn-16-19	137
	Coffee	S54Tenn-16-20	139
Henry	Fayette	S59Tenn-24-6	141
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Holston	Coffee	S54Tenn-16-11	145
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	Blount	S53Tenn-5-20	159
Landisburg	Loudon	S58Tenn-53-1	161
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Lawrence	Coffee	S55Tenn-16-31	165
	Coffee	S55Tenn-16-32	167
Leadvale	Blount	S53Tenn-5-11	169
	Blount	S53Tenn-5-24	171
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	Henderson	S55Tenn-39-4	175
Linker	Putnam	S59Tenn-71-24	177
	Putnam	S59Tenn-71-25	179
Mimosa	Putnam	S60Tenn-71-34	181
	Putnam	S60Tenn-71-35	183
Minvale	Blount	S53Tenn-5-19	185
	Blount	S53Tenn-5-25	187
Monongahela	Putnam	S59Tenn-71-26	189
	Putnam	S59Tenn-71-27	191
Muskingum	Putnam	S59Tenn-71-28	193
	Putnam	S59Tenn-71-29	195
Paden	Hardin	S59Tenn-36-2	197
	Hardin	S59Tenn-36-3	199
Pembroke	Coffee	S55Tenn-16-21	201
	Coffee	S55Tenn-16-22	203
Pickwick	Hardin	S59Tenn-36-1	205
	Hardin	S59Tenn-36-6	207
Sequatchie	Putnam	S59Tenn-71-30	209
	Putnam	S59Tenn-71-33	211
Sequoia	Blount	S53Tenn-5-9	213
	Blount	S53Tenn-5-10	215
Silerton	Henderson	S55Tenn-39-2	217
	Henderson	S55Tenn-39-5	219
Talbott	Loudon	S58Tenn-53-2	221
	Loudon	S58Tenn-53-5	223
Tellico	Loudon	S58Tenn-53-3	225
	Loudon	S58Tenn-53-4	227
Tunica	Dyer	S61Tenn-23-10	229
	Dyer	S61Tenn-23-11	231
Waynesboro	Loudon	S58Tenn-53-6	233
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	Decatur	S53Tenn-5-4	75
	Dunmore	S53Tenn-5-1	97
	Dunmore	S53Tenn-5-2	99
	Etowah	S53Tenn-5-21	105
	Etowah	S53Tenn-5-23	107
	Fullerton	S53Tenn-5-12	125
	Fullerton	S53Tenn-5-15	127
	Jefferson	S53Tenn-5-14	157
	Jefferson	S53Tenn-5-20	159
	Leadvale	S53Tenn-5-11	169
	Leadvale	S53Tenn-5-24	171
	Minvale	S53Tenn-5-19	185
	Minvale	S53Tenn-5-25	187
	Sequoia	S53Tenn-5-9	213
	Sequoia	S53Tenn-5-10	215
Coffee	Armour	S54Tenn-16-6	13
	Armour	S54Tenn-16-16	15
	Armour	S55Tenn-16-29	17
	Armour	S55Tenn-16-30	19
	Baxter	S54Tenn-16-2	21
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	Landisburg	S58Tenn-53-10	163
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	Tellico	S58Tenn-53-4	227
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	Waynesboro	S58Tenn-53-9	235
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	Linker	S59Tenn-71-25	179
	Mimosa	S60Tenn-71-34	181
	Mimosa	S60Tenn-71-35	183
	Monongahela	S59Tenn-71-26	189
	Monongahela	S59Tenn-71-27	191
	Muskingum	S59Tenn-71-28	193
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	Sequatchie	S59Tenn-71-30	209
	Sequatchie	S59Tenn-71-33	211
	Wellston	S59Tenn-71-23	237

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Putnam County, Tennessee SOIL TYPE Albertville silt loam

LAB NOS. 12544 - 12550 SOIL NOS. 859Tenn-71-22

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 >2 <10mm	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12544	0-2	A1										Tr.	
12545	2-7	A2	0.4a	0.4a	0.7	8.9	26.2	44.5	18.9	50.3	28.2	8	l
12546	7-12	B21	0.6a	0.4a	0.6	8.2	21.5	40.3	28.4	41.2	27.6	6	cl
12547	12-23	B22	0.1a	0.2a	0.3	5.5	13.9	31.0	49.0	27.2	22.4	Tr.	c
12548	23-27	B3	<0.1	<0.1	0.1	1.8	4.7	29.1	64.3	9.8	25.5		c
12549	27-34	C1	0.3a	0.4a	0.1	0.7	1.9	43.3	53.3	9.6	36.2		sic
12550	34-48+	C2	<0.1	<0.1	<0.1	0.1	1.9	62.0	36.0	20.7	43.3		sicl

LABORATORY NUMBER	pH 8C1a H_2O 1:1		6C1a Free Iron as Fe_2O_3 %	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	WATER CONTENT 4B1b 1/3-Bar %	4B2 15-Bar %
12544	4.2			7.80									
12545	4.8		1.7	0.76	0.045	17	20.2	1.47	19.5	1.46	1.50	17.6	7.0
12546	4.8		2.7	0.39	0.038	10	20.1	1.55	19.0	1.56	1.62	19.4	11.0
12547	4.7		3.4	0.25	0.048	5	27.1	1.46	24.1	1.50	1.62	29.3	18.8
12548	4.5		4.2	0.32	0.061	5	33.2	1.37	31.1	1.39	1.58	32.4	24.4
12549	4.5		5.2	0.28			27.6	1.46b	25.3	1.49b	1.64b	28.7	22.4
12550	4.5		1.1	0.25			17.0	1.77	18.7	1.72	1.89	21.2	13.4

LABORATORY NUMBER	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6P2a Na	6Q2b K	5H1a H	5C3 Base Sat. % on Sum Cations	5C1 Base Sat. % NH_4OAc	5E1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g		
		milliequivalents per 100g soil										
12544						27.5						
12545	6.1	<0.1	0.3	<0.1	0.1	8.8	4	6	0.4	9.2		
12546	8.5	<0.1	0.4	<0.1	0.2	11.2	5	7	0.6	11.8		
12547	15.9	<0.1	0.4	<0.1	0.3	13.9	5	4	0.7	14.6		
12548	20.6	<0.1	0.4	<0.1	0.3	26.0	3	3	0.7	26.7		
12549	18.3	<0.1	0.2	<0.1	0.3	23.7	2	3	0.5	24.2		
12550	12.0	1.6	0.3	0.1	0.3	14.8	13	19	2.3	17.1		

a. Many Fe-Mn? bearing aggregates.
b. Range is 0.12 to 0.16 g/cc.

Soil type: Albertville silt loam

Soil No. : S59Tenn-71-22

Location: Putnam County, Tennessee, 1.6 miles east of Monterey on Dewey Goff property. Site is 30 feet east of corner of borrow pit. Photo AEW-3N-43.

Vegetation and Use: Mixed upland oak forest.

Slope and Land Form: Five percent slope, uneroded, upland.

Drainage and Permeability: Well drained; surface runoff is moderate to rapid, internal drainage is moderate.

Parent Material: Siltstone and shale from Pennsylvanian Rocks of the Cumberland Plateau.

Samples Collected by: Edwood Pederson, J. Fleming, G. T. Jackson, J. A. Elder, D. K. Springer, November 30, 1959.

Profile Described by: G. T. Jackson, November 30, 1959.

Horizon and Lincoln Lab. No.	Depth	
Aoo Not sampled	1½ to 1 inch	Undecomposed litter from oak and other deciduous trees.
Ao Not sampled	1 to 0 inch	Partly decomposed litter from deciduous trees; few twigs. Apparently free from fire for many years. Somewhat laminated.
A1 12544	0 to 2 inches	Very dark grayish brown (10YR3/2) silt loam with weak fine granular structure; very friable; many fine roots; abrupt wavy boundary.
A2 12545	2 to 7 inches	Yellowish brown (10YR5/4) silt loam with weak medium granular structure; friable; common fine-roots; clear wavy boundary.
B21 12546	7 to 12 inches	Yellowish brown (10YR5/6) fine silt loam with moderate medium subangular blocky structure; discontinuous clay films on ped surfaces; friable when moist; small pores; clear wavy boundary.
B22 12547	12 to 23 inches	Yellowish brown (10YR 5/6) silty clay loam with moderate medium subangular blocky structure; thin patchy clay films; friable; clear wavy boundary.
B3 12548	23 to 27 inches	Variegated strong brown (7.5YR5/6); light yellowish brown (2.5Y6/4); and yellowish red (5YR5/6) silty clay; variegations are common, medium, prominent; strong medium and coarse angular blocky structure; thin clay films; firm; gradual smooth boundary.
C1 12549	27 to 34 inches	Variegated yellowish red (5YR5/6), strong brown (7.5YR5/6), pink (5YR7/3) silty clay; variegations are many, coarse, prominent; platy structure apparently formed from weathered shale bedding planes; few shale fragments.
C2 12550	34 to 48 inches plus	Variegated strong brown (7.5YR5/6) and yellowish red (5YR5/6) silty clay with gray (10YR6/1) clay films; platy structure apparently formed from weathered shale; common shale fragments.

Remarks: Color and consistency are for moist soil.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Alcoa silt loam SOIL Nos. S53Tenn-5-16 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53755-53757

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	3A1 Int. II (0.2–0.02)	(2–0.1)			Coarse fragments: 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct. of < 76mm	
0-13	A2	40.3	33.0	26.7	0.3	2.4	5.8	24.6	7.2	9.8	23.2	32.2	33.1			-		
13-44	B21	34.3	23.4	42.3	0.9	2.7	4.0	20.3	6.4	6.5	16.9	26.1	27.9			-		
44-60	B22	36.4	17.7	45.9	0.5	2.1	5.1	22.5	6.2	5.2	12.5	25.7	30.2			-		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-13	0.71																	6.0
13-44	0.12																	5.0
44-60	0.06																	5.0

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-13	3.2	0.4	tr.	tr.	3.6	7.8	11.4									32	
13-44	1.1	0.5	tr.	tr.	1.6	8.2	9.8									16	
44-60	1.1	0.5	tr.	tr.	1.6	8.4	10.0									16	

Depth (in.)					

Soil Type: Aloca silt loam
Soil No.: S53Tenn-5-16
Location: Blount County, Tennessee. 2 miles northwest of Chandler.
Vegetation and land use: Hay. Johnson grass and lespedeza.

Horizon and Beltsville Lab. No.	
A2 53755	0 to 13 inches. Dark reddish brown (5YR 3/3) very friable silt loam.
B21 53756	13 to 44 inches. Reddish brown (5YR 4/4) friable clay loam; weak fine blocky structure. Numerous black specks and stains, and a few black concretions.
B22 53757	44 to 60 inches. Yellowish red (5YR 4/6) friable clay loam; weak fine blocky structure. Numerous black specks or stains. Occasional black concretion.

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10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Alcoa silt loam SOIL Nos. 853Tenn-5-17 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53758-53760

Depth (in.)	Horizon	1B1b Total Sand (2–0.05)	Total Silt (0.05–0.002)	Total Clay (< 0.002)	Sand: Very coarse (2–1)	Sand: Coarse (1–0.5)	Sand: Medium (0.5–0.25)	Sand: Fine (0.25–0.1)	Sand: Very fine (0.1–0.05)	Silt: (0.05–0.02)	Silt: Int. III (0.02–0.002)	Int. II (0.2–0.02)	3A1 (2–0.1)			Coarse fragments 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct. of < 76mm	
0-9	Ap	54.8	29.1	16.1	0.4	1.6	5.4	34.4	13.0	9.8	19.3	43.3	41.8			-		
9-15	B21	48.9	30.4	20.7	0.4	1.5	5.4	30.8	10.8	9.8	20.6	39.7	38.1			tr.		
15-50	B22	40.9	28.8	30.3	0.2	1.1	4.7	25.2	9.7	9.3	19.5	34.4	31.2			-		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-9	1.11																	5.6
9-15	0.62																	5.2
15-50	0.16																	5.0

Depth (in.)	Extractable bases 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	5B1a Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-9	1.1	0.3	tr.	tr.	1.4	5.9	7.3									19	
9-15	0.6	0.3	tr.	tr.	0.9	7.3	8.2									11	
15-50	0.6	0.2	tr.	tr.	0.8	8.2	9.0									9	

Depth (in.)

USDA-SCS-BELTSVILLE, MD. 1964

Soil Type: Alcoa silt loam
Soil No.: 853Tenn-5-17
Location: Blount County, Tennessee. 2 miles west of Sixmile.
Vegetation and land use: Idle. Lespedeza and weeds.

Horizon and Beltsville Lab. No.	
Ap 53758	0 to 9 inches. Reddish brown (5YR 4/4) very friable silt loam or loam.
B21 53759	9 to 15 inches. Reddish brown (5YR 4/4) very friable clay loam; weak fine blocky structure.
B22 53760	15 to 50 inches. Yellowish red (5YR 4/6) very friable clay loam; weak fine blocky structure. Few black specks or stains.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Allen fine sandy loam SOIL Nos. 553Tenn-5-7 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53718-53722

Depth (in.)	Horizon	1B1b Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (< 0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	Int. III (0.02-0.002)	3A1 Int. II (0.2-0.02)	(2-0.1)			Coarse fragments 2A2 > 2 Pct.	2-19	19-76
		Pct. of < 2 mm															Pct. of < 76mm	
0-4	Ap	71.2	21.2	7.6	2.4	9.8	17.0	33.3	8.7	7.3	13.9	32.3	62.5			14		
4-12	A3	65.7	24.1	10.2	2.4	10.1	16.8	29.0	7.4	6.9	17.2	28.0	58.3			9		
12-16	B1	48.3	19.9	31.8	2.2	7.6	12.5	20.5	5.5	6.0	13.9	21.1	42.8			tr.		
16-39	B2	46.7	16.1	37.2	1.9	6.9	11.9	20.3	5.7	5.5	10.6	20.8	41.0			tr.		
39-60	C	43.4	16.9	39.7	1.8	6.6	11.0	19.0	5.0	5.5	11.4	19.5	38.4			tr.		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-4	1.24																	5.2
4-12	0.27																	4.8
12-16	0.26																	4.6
16-39	0.08																	4.8
39-60	0.16																	4.8

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-4	0.6	0.2	tr.	tr.	0.8	5.5	6.3									13	
4-12	0.2	-	tr.	tr.	0.2	3.5	3.7									5	
12-16	0.2	-	tr.	tr.	0.2	9.1	9.3									2	
16-39	0.2	0.1	tr.	tr.	0.3	9.7	10.0									3	
39-60	-	0.2	tr.	tr.	0.2	10.5	10.7									2	

Depth (in.)

Soil Type: Allen fine sandy loam
Soil No.: 853Tenn-5-7
Location: Blount County, Tennessee. 1/4 mile east of Walland.
Vegetation and land use: Unimproved pasture or idle with broomsedge, briars, sprouts, and some volunteer lespedeza.

Horizon and Beltsville Lab. No.	
Ap 53718	0 to 4 inches. Brown (10YR 5/3) or grayish brown (10YR 5/2) nonplastic fine sandy loam.
A3 53719	4 to 12 inches. Yellowish brown (10YR 5/6) nonplastic fine sandy loam, weakly developed fine blocky structure.
B1 53720	12 to 16 inches. Yellowish red (5YR 5/6) slightly plastic clay loam. Few yellowish brown streaks (10YR 5/6) which appear to be along former root channels. Moderately developed fine blocky structure.
B2 53721	16 to 39 inches. Red (2.5YR 4/8) moderately plastic clay loam; moderately developed fine and medium blocky structural aggregates.
C 53722	39 to 60 inches. Red (2.5YR 4/8) moderately plastic clay loam with a few distinct brownish yellow (10YR 6/6) mottles. Moderately developed medium blocky structure.

Note: Colors refer to moist soil.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Allen fine sandy loam SOIL Nos. S53Tenn-5-8 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53723-53727

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)			Coarse fragments 2A2 > 2 Pct.	2 – 19	19 – 76
		Size class and particle diameter (mm) 3A1																
		Pct. of < 2 mm															Pct. of < 76mm	
0-7	Ap	60.5	31.6	7.9	2.8	9.6	12.5	28.6	7.0	8.1	23.5	31.1	53.5			5		
7-12	A3	51.9	33.5	14.6	2.7	7.6	10.5	24.9	6.2	8.4	25.1	28.9	45.7			tr.		
12-17	B1	41.4	28.3	30.3	2.0	6.2	6.4	20.0	4.8	6.0	22.3	22.4	34.8			tr		
17-41	B2	35.7	15.0	49.3	1.9	5.8	7.4	16.4	4.2	3.6	11.4	17.4	31.5			tr.		
41-60	C	37.9	9.3	52.8	2.5	6.7	8.0	16.4	4.3	2.7	6.6	16.3	33.6			tr.		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct	Pct.	Pct.			pH	8C1a (1:1) H_2O
0-7	1.12																5.3
7-12	0.28																5.2
12-17	0.24																5.0
17-41	0.12																5.0
41-60	0.06																5.0

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-7	0.6	0.2	tr.	tr.	0.8	4.6	5.4									15	
7-12	0.4	0.1	tr.	tr.	0.5	4.0	4.5									11	
12-17	0.6	0.6	tr.	tr.	1.2	7.1	8.3									14	
17-41	0.2	0.4	tr.	tr.	0.6	12.2	12.8									5	
41-60	0.1	0.2	tr.	tr.	0.3	12.8	13.1									2	

Depth (in.)					

Soil Type: Allen fine sandy loam
Soil No.: 853Tenn-5-8
Location: Blount County, Tennessee. 4 miles east of Walland.
Vegetation and land use: Unimproved pasture or idle with broomsedge and sprouts.

Horizon and Beltsville Lab. No.	
Ap 53723	0 to 7 inches. Pale brown (10YR 6/3) nonplastic fine sandy loam.
A3 53724	7 to 12 inches. Strong brown (7.5YR 5/8) nonplastic sandy clay loam; weakly developed fine blocky structure. Gradual gradation to;
B1 53725	12 to 17 inches. Yellowish red (5YR 5/8) slightly plastic clay with a few distinct streakings of strong brown (7.5YR 5/8). Moderately developed medium blocky structure. Gradual gradation to;
B2 53726	17 to 41 inches. Red (2.5YR 4/6) moderately plastic clay loam; moderately developed medium blocky structure.
C 53727	41 to 60 inches. Red (2.5YR 4/8) moderately plastic clay loam with a few distinct brownish yellow (10YR 6/6) mottles; moderately developed medium blocky structure.

Note: Colors refer to moist soil.

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(5-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Armour silt loam, eroded undulating phase SOIL Nos. 854Tenn-16-6 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551314-551317

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand (Pct. of < 2 mm): Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2 – 19 (Pct. of < 76mm)	19 – 76
0-9	Ap		68.0	21.7	2.2	2.8	1.4	1.6	2.3		45.9	25.2				5		
9-15	B1		66.1	26.8	1.2	1.9	1.1	1.2	1.7		48.2	20.2				tr.		
15-32	B2		63.5	28.2	1.8	2.2	1.1	1.2	2.0		45.5	20.5				tr.		
42+	C		52.7	34.1	3.9	3.4	1.5	1.7	2.7		38.6	17.7				13		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density: g/cc	4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: Pct.	4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in	pH:	8C1c (1:1) KCl	8C1a (1:1) H_2O
0-9	1.04	0.118	9			2.6												5.5
9-15	0.42	0.072	6			2.4												5.7
15-32	0.34	0.069				2.9												5.8
42+	0.10	0.070				3.9												5.5

Depth (in.)	Extractable bases 5B1a (meq/100 g): 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations		6G1d Ext. Al		Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
0-9	3.8	0.8	tr.	0.2		9.2	14.0									34	
9-15	4.9	0.4	tr.	0.2		6.8	12.3									45	
15-32	5.7	0.4	0.1	0.2		6.3	12.7									50	
42+	5.1	0.8	0.1	0.2		6.6	12.8									48	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray						7A3	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

USDA SCS-HYATTSVILLE, MD. 1966

Soil Type: Armour silt loam, eroded undulating phase.
Soil No.: S54Tenn-16-6
Location: Coffee County, Tennessee. 300 feet northwest of Stepp's Store at Noah and 250 feet north of U. S. Highway 41. Aerial photo 5G-77.
Slope and land form: 4 percent.

Horizon and Beltsville Lab. No.	
Ap 551314	0 to 9 inches. Dark brown (10YR 3/3) very friable silt loam; weak fine crumb structure.
B1 551315	9 to 15 inches. Dark brown (7.5YR 4/4 to 10YR 4/3) friable silt loam; moderate medium crumb to weak fine subangular blocky structure; a few finely divided chert fragments and small black accretions usually present.
B2 551316	15 to 32 inches. Strong brown (7.5YR 5/6) to reddish brown (5YR 4/4) friable silty clay loam; weak fine to medium subangular blocky structure; a few finely divided chert fragments and small black accretions present.
B3 Not Sampled	32 to 42 inches. Strong brown (7.5YR 5/6) friable silty clay loam; weak to moderate medium subangular blocky structure; chert fragments and black accretions becoming more numerous than in layers above.
C 551317	42 inches plus. Yellowish brown (10YR 5/4) and strong brown (7.5YR 5/6); friable silty clay loam; slightly heavier textured than above layer; moderate medium subangular blocky structure; chert fragments and black accretions become larger and more numerous.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE,
SOIL CONSERVATION SERVICE

SOIL Armour silt loam, eroded undulating phase SOIL No. 254Tenn-16-16 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551353 - 551356

Depth (in.)	Horizon	1B1b Total Sand (2–0.05)	Total Silt (0.05–0.002)	Total Clay (< 0.002)	Sand Very coarse (2–1)	Sand Coarse (1–0.5)	Sand Medium (0.5–0.25)	Sand Fine (0.25–0.1)	Sand Very fine (0.1–0.05)	Silt 0.05–0.02	Silt Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1 2A2 > 2 Pct.	2 – 19 (Pct. of < 75mm)	19 – 76 (Pct. of < 75mm)
		Pct. of < 2 mm																
0-9	Ap		63.2	20.8	5.3	4.6	1.9	2.0	2.2		44.0	22.3				22		
9-14	B1		50.5	30.0	9.5	4.5	1.7	1.7	2.1		36.9	16.5				18		
14-32	B2		47.1	38.0	4.9	3.9	1.7	1.7	2.7		34.0	16.7				13		
40+	C		42.0	35.9	7.0	5.8	2.6	2.8	3.9		31.2	16.2				36		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density 4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content 4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in		pH 8C1c (1:1) KCl	8C1a (1:1) H_2O
0-9	2.46	0.216	11			2.9										6.5
9-14	0.29	0.072				5.0										5.3
14-32	0.20	0.089				4.9										5.1
40+	0.15	0.074				5.1										5.0

Depth (in.)	Extractable bases 5B1a 6N2a Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC 5A3a Sum cations		6G1d Ext. Al			Ratios to clay CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																	
0-9	10.9	2.0	tr.	0.5		6.0	19.4										69	
9-14	5.4	0.4	0.2	0.2		7.9	14.1										44	
14-32	5.9	1.8	0.1	0.2		8.4	16.4										49	
40+	4.6	1.7	0.2	0.2		9.2	15.9										42	

Depth (in.)	Clay Fraction Analysis 7A1b-d Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Minerals	
	7A2 X-ray						DTA 7A3		
0-9									
9-14	x	x	xxx	x			x		
14-32									
40+									

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Armour silt loam, eroded undulating phase.
Soil No.: S54Tenn-16-16
Location: Coffee County, Tennessee. 3.1 miles west of Noah near county line. 200 yards west of Noah Fork Creek. 50 feet east of fence corner and 25 feet north of gravel road. Aerial photo 5G-50.

Horizon and Baltsville Lab No.	
Ap 551353	0 to 9 inches. Dark brown (10YR 3/3) very friable silt loam; weak fine crumb structure; a few finely divided chert fragments.
B1 551354	9 to 14 inches. Brown (10YR 4/3) to reddish brown (5YR 4/4) friable silt loam or silty clay loam; moderate medium crumb to weak fine subangular blocky structure; a few finely divided chert fragments.
B2 551355	14 to 32 inches. Strong brown (7.5YR 5/6) to reddish brown (5YR 4/4) friable silty clay loam; weak fine to medium subangular blocky structure; a few finely divided chert fragments and black accretions.
B3 Not Sampled	34 to 40 inches. Strong brown (7.5YR 5/6) friable silty clay loam; weak to moderate medium subangular structure; contains slightly more chert and accretions than layer above.
C 551356	40 inches plus. Mottled strong brown (7.5YR 5/6-5/8) moderately cherty friable silty clay loam; moderately medium subangular blocky; numerous black accretions.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL: Armour silt loam, eroded undulating phase — SOIL Nos. 55Tenn-16-29 — LOCATION: Coffee County, Tennessee

SOIL SURVEY LABORATORY: Beltsville, Maryland — LAB. Nos. 552001 - 558006

Depth (in.)	Horizon	1B1b Total Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	2A1 Coarse fragments > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm														Pct.	Pct. of < 76mm	
0-7	Ap		69.9	18.5	1.4	2.1	1.6	2.6	3.9		50.3	24.9				tr.		
7-17	B1		58.0	37.0	0.2	0.6	0.5	0.9	2.8		41.6	19.8						
17-24	B21		56.8	38.2	0.2	0.3	0.3	0.6	3.6		39.6	21.2						
24-34	B22		58.4	34.9	0.2	0.4	0.4	0.9	4.8		39.3	24.4				tr.		
34-44	B3		54.6	34.6	0.5	1.0	1.0	2.1	6.2		36.6	25.5				tr.		
44-50	C		51.5	35.2	0.7	1.6	1.4	2.9	6.7		33.2	26.7				8		

Depth (in.)	6A1e Organic carbon	Nitrogen	C/N		Carbonate as $CaCO_3$	Ext. iron as Fe_2O_3	Bulk density 4A1e ⅓ bar	4A1h Oven dry	4D1 COLE	Water content 4B1c ⅓ bar	4B2 15 bar		4C1 WRD	pH 8C1c (1:1) KCl	8C1a (1:1) H_2O
	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc	Pct.	Pct.	Pct.	in/in		
0-7	1.53	0.106	14			2.1									6.7
7-17	0.55	0.072	8			3.0									5.0
17-24	0.36	0.064				3.2									4.8
24-34	0.30	0.056				3.0									4.8
34-44	0.30	0.057				3.2									4.9
44-50	0.28	0.061				3.6									4.9

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations		6G1d Ext. Al		Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations	5C1 NH_4OAc
	meq/100 g															Pct.	Pct.
0-7	10.2	0.6	0.1	0.2		5.2	16.3									68	
7-17	5.0	0.6	tr.	0.2		9.5	15.3									38	
17-24	5.1	0.6	0.1	0.2		8.9	14.9									40	
24-34	5.6	0.8	0.1	0.1		7.0	13.6									48	
34-44	5.6	0.5	0.1	0.1		6.8	13.1									48	
44-50	5.1	0.3	0.1	0.2		7.2	12.9									44	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Mi.	Int.	Qtz	Kl.	Gibbsite	
	7A2 X-ray						7A3		

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

USDA-SCS-BELTSVILLE, MD. 1966

Soil Type: Armour silt loam, eroded undulating phase.
Soil No.: S55Tenn-16-29
Location: Coffee County, Tennessee. 1.35 miles west on Normandy Road, which begins at the Lem Parks Farm 0.2 mile south of bridge over Duck River, to fence corner on the west side of road at a sharp curve. 250 yards west of fence corner and 50 yards north of intersection of small drainageways at fence. Aerial photo 50-44.
Vegetation and land use: Fallow
Slope and land form: 3 to 4 percent
Physiographic position: Stream terrace

Horizon and Beltsville Lab. No.	
Ap 552001	0 to 7 inches. Brown (10YR 4/3) friable silt loam, weak fine granular structure; many small grass and weed roots; common wormholes 2.0 mm in diameter.
B1 552002	7 to 17 inches. Brown (7.5YR 4/4) to dark yellowish brown (10YR 4/4) friable to firm silty clay loam; moderate medium subangular blocky structure; contains a few soft black segregations, apparently manganese, 1.0 mm in diameter; few distinct clay skins on peds; contains a few fine pinholes.
B21 552003	17 to 24 inches. Brown (7.5YR 4/4) exterior, yellowish brown (10YR 5/4) interior or when crushed; firm heavy silty clay loam; moderate medium subangular and angular blocky structure; contains a few light yellowish brown (10YR 6/4) variegations; prominent clay skins on peds; common dark reddish brown stains, probably ferro-manganese, and black concretions 1.0 mm in diameter.
B22 552004	24 to 34 inches. Yellowish brown (10YR 5/4) firm heavy silty clay (plastic when wet); moderate fine angular blocky structure; common fine faint light yellowish brown (10YR 6/4) and few fine distinct yellowish red (5YR 4/6) variegations; prominent strong brown (7.5YR 5/6) clay skins on peds; contains many fine black ferro-manganese segregations and stains and a few dark reddish brown stains; occasional fine chert gravel present.
B3 552005	34 to 44 inches. Strong brown to brown (7.5YR 5/6-4/4) with common fine distinct pale brown (10YR 6/3) variegations; firm silty clay loam; weak medium angular blocky structure; common clay skins on peds; pale brown and gray silt material has accumulated in a few old root channels or wormholes; common manganese segregations 1.0 to 5.0 mm in diameter; a few fine chert gravel 3.0 to 7.0 mm in diameter.
C 552006	44 to 50 inches. Strong brown (7.5YR 5/6) firm cherty silty clay loam; common fine distinct light yellowish brown and pale brown (10YR 6/4-6/3) and few fine faint brown (7.5YR 4/4) variegations; common soft black manganese segregations 1.0 to 5.0 mm in diameter; contains a very few clay skins; many chert fragments 1/2 to 3 inches in diameter; larger chert gravel comprising an estimated 15 percent of total volume discarded from sample.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Armour silt loam, eroded undulating phase SOIL Nos. 855Tenn-16-30 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 552007 - 552012

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct. of < 76mm	
0-7	Ap		63.1	23.3	1.4	2.2	1.6	3.3	5.1		43.6	26.6				5		
7-15	B1		59.9	27.3	1.3	2.1	1.4	2.8	5.2		42.1	24.8				4		
15-26	B21		58.7	27.9	1.4	2.0	1.3	3.0	5.5		40.7	25.4				tr.		
26-39	B22		53.8	34.6	0.7	1.7	1.2	2.6	5.4		38.9	22.0				tr.		
39-45	B3		47.6	38.6	1.5	2.4	1.4	2.8	5.7		34.3	20.8				11		
45-57	C or Du		27.2	39.6	14.5	11.2	2.9	2.1	2.5		20.9	9.9				50		

Depth (in.)	6A1a Organic carbon Pct	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density: 4A1d ⅓ bar g/cc	4A1e 15 bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: Pct	4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in	pH: 8C1c (1:1) KCl	8C1a (1:1) H_2O
0-7	1.34	0.100	13			2.1											5.7
7-15	0.19	0.061				2.4											5.5
15-26	0.08	0.060				2.5											5.5
26-39	0.10	0.064				3.0											5.1
39-45	0.10	0.068				3.5											4.9
45-57	0.12	0.074				4.2											4.5

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations	6G1d Ext. Al	Ratios to clay: CEC Sum	Ext. iron	15-bar water	6D3 Ca/Mg	Base saturation: 5C3 Sum cations	5C1 NH_4OAc
	meq/100 g												Pct.	Pct.
0-7	5.1	0.6	0.1	0.1		7.0	12.9						46	
7-15	5.4	0.2	tr.	0.2		5.1	10.9						53	
15-26	4.4	0.8	0.1	0.2		4.7	10.2						54	
26-39	4.1	1.1	0.1	0.2		5.9	11.4						48	
39-45	3.3	0.9	0.1	0.3		8.4	13.0						35	
45-57	2.4	0.8	0.1	0.4		9.3	13.0						28	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray						7A3	

Mt. = Montmorillonite, Chl. = chlorite, Vm = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Armour silt loam, eroded undulating phase.
Soil No.: S55Tenn-16-30
Location: Coffee County, Tennessee. 0.15 miles south of bridge over Duck River at Riverside on road to Rullahoma and 100 yards north of intersection of Normandy Road - 40 feet east of road in corn field. Aerial photo 50-85.
Vegetation and land use: Cultivated.
Slope and land form: 3 percent.
Physiographic position: Stream terrace

Horizon and Beltsville Lab. No.	
Ap 552007	0 to 7 inches. Brown to dark brown (10YR 4/3-3/3) friable silt loam; weak fine granular structure; many small roots and common wormholes.
B1 552008	7 to 15 inches. Brown (7.5YR 4/4) to dark yellowish brown (10YR 4/4) friable to firm light silty clay loam; moderate fine to medium subangular blocky structure; contains a few black segregations; apparently manganese, 1.0 mm in diameter; a few distinct clay skins on peds; occasional small chert fragment 2.0 to 5.0 mm in diameter; a few pinholes present.
B21 552009	15 to 26 inches. Brown (7.5YR 4/4) exterior, yellowish brown (10YR 5/6) interior or when crushed; firm silty clay loam; moderate medium angular and subangular blocky structure; prominent clay skins on horizontal and vertical faces; contains a few soft black concretions 1.0 mm in diameter and small chert gravel 2.0 to 5.0 mm in diameter.
B22 552010	26 to 39 inches. Strong brown (7.5YR 5/6) with common fine distinct light yellowish brown (10YR 6/4) and yellowish red (5YR 4/6) variegations; firm silty clay loam; moderate to strong medium angular blocky structure; plastic when wet; continuous prominent clay skins on peds; common soft black concretions and segregations 1.0 to 2.0 mm in diameter; a few small chert gravel.
B3 552011	39 to 45 inches. Strong brown (7.5YR 5/6) with many medium distinct pale brown, yellowish brown (10YR 6/3-5/4) and yellowish red (5YR 5/6) variegations; firm silty clay loam (plastic when wet); moderate medium angular blocky structure; many prominent clay skins on vertical faces but few distinct clay skins on horizontal faces; a few chert gravel present 1/4 to 2 inches in diameter; smooth abrupt lower boundary.
C or Du 552012	45 to 57 inches. Strong brown (7.5YR 5/6) with many fine distinct light yellowish brown (10YR 6/4) and yellowish red (5YR 5/6) variegations; firm cherty silty clay loam; weak fine to medium subangular blocky structure; contains a few black concretions and segregations 1.0 mm in diameter; numerous chert fragments of coarse sand size gives the soil a gritty feel; angular to rounded chert gravel comprise an estimated 40 percent of the soil mass; larger chert gravel, an estimated 20 percent of the total volume, discarded from sample.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Baxter cherty silt loam, eroded rolling phase SOIL Nos. 854Tenn-16-2 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551299 - 551302

Depth (in.)	Horizon	1B1b Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (< 0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt (0.05-0.02)	Int. III (0.02-0.002)	Int. II (0.2-0.02)	(2-0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2-19	19-76
		Pct. of < 2 mm															Pct. of < 76mm	
0-7	Ap		67.1	15.1	4.2	3.0	2.2	4.6	3.8		49.0	24.5				34		
7-10	B1		53.8	20.9	5.0	4.5	3.1	6.3	6.4		35.2	28.7				9		
10-32	B2		51.0	32.3	2.2	3.7	2.6	4.1	4.1		37.1	20.3				3		
32+	C		38.4	56.3	0.6	1.0	0.7	1.3	1.7		30.4	10.4				5		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density: 4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: 4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in		pH: 8C1c (1:1) KCl	8C1a (1:1) H_2O
0-7	1.88	0.151	12			1.4										6.6
7-10	0.20	0.033				2.2										5.7
10-32	0.09	0.033				2.8										4.7
32+	0.04	0.050				5.1										5.0

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2e Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations		6G1d Ext. Al			Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																	
0-7	7.4	0.8	tr.	0.4		3.4	12.0										72	
7-10	3.6	0.4	tr.	0.1		2.4	6.5										63	
10-32	2.9	1.2	0.1	0.1		5.6	9.9										43	
32+	6.3	2.6	0.1	0.3		8.0	17.3										54	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray						7A3	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

USDA-SCS-HYATTSVILLE, MD. 1966

Soil Type: Baxter cherty silt loam, eroded rolling phase.
Soil No.: S54Tenn-16-2
Location: Coffee County, Tennessee. 6.5 miles north of Hillsboro on Hillsboro-Viola Road to a gravel road. 100 feet southwest of gravel road and 50 feet west of Hillsboro-Viola road. Aerial photo 7G-80.
Vegetation and land use: Pasture
Slope and land form: 8 to 9 percent.

Horizon and Beltsville Lab. No.	
Ap 551299	0 to 7 inches. Brown (10YR 4/3-5/3) very friable cherty silt loam; weak fine crumb structure; chert fragments ranging from 1/2 to 4 inches in diameter.
B1 551300	7 to 10 inches. Reddish yellow (7.5YR 6/6 - 5YR 6/8) friable cherty silt loam; weak fine subangular blocky structure.
B2 551301	10 to 32 inches. Yellowish red (5YR 5/8) and reddish yellow (7.5YR 7/6) firm cherty silty clay loam or silty clay; moderate fine to medium subangular and angular blocky structure.
C 551302	32 inches plus. Yellowish red (5YR 5/8) or red (2.5YR 4/6) splotched and streaked with yellow; firm cherty silty clay; moderate medium to coarse angular blocky structure.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Baxter cherty silt loam eroded rolling phase SOIL Nos. 854Tenn-16-13 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551343 - 551346

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm														Pct. of < 76cm		
0-7	Ap		60.3	9.4	1.0	1.0	1.0	12.4	14.9		38.2	47.0				16		
7-10	B1		56.7	19.6	0.8	0.9	0.7	9.1	12.2		37.2	39.3				18		
10-32	B2		52.1	21.5	0.8	1.0	0.8	10.4	13.4		34.3	39.9				14		
32+	C		35.3	44.8	1.8	1.9	1.2	6.4	8.6		23.0	25.9				12		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density: 4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: 4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in		pH: 8C1c (1:1) KCl	8C1a (1:1) H_2O
0-7	1.40	0.092	15			0.9										5.5
7-10	0.24	0.023				2.2										4.6
10-32	0.15	0.019				2.6										4.4
32+	0.28	0.029				2.8										4.7

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A8a Sum cations		6G1d Ext. Al			Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																	
0-7	3.1	0.3	0.2	0.1		4.5	8.2										45	
7-10	0.6	0.3	0.1	tr.		6.2	7.2										14	
10-32	0.1	0.2	0.1	0.1		7.5	8.0										6	
32+	4.4	0.3	tr.	0.1		10.4	15.2										32	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Mi	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray						DTA 7A3	
0-7								
7-10								
10-32	x		xxx				x	
32+								

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

USDA-SCS-HYATTSVILLE, MD. 1966

Soil Type: Baxter cherty silt loam, eroded rolling phase.
Soil No.: S54Tenn-16-13
Location: Coffee County, Tennessee. 0.6 mile north of Pleasant Knoll Church and 0.2 mile south of county line near large pond. 40 yards west of road at gate and 30 yards south of pond. Aerial photo 7G-44.

Horizon and Beltsville Lab. No.	
Ap 551343	0 to 7 inches. Brown (10YR 4/3 - 5/3) very friable cherty silt loam; weak fine crumb structure; chert fragments ranging from 1/2 to 4 inches in diameter.
B1 551344	7 to 10 inches. Reddish yellow (7.5YR 6/6 - 5YR 6/8) friable cherty silt loam; weak fine subangular blocky structure.
B2 551345	10 to 32 inches. Yellowish red (5YR 5/8) and reddish yellow (7.5YR 7/6) firm cherty silty clay loam or silty clay; moderate fine to medium subangular and angular blocky structure.
C 551346	32 inches plus. Yellowish red (5YR 5/8) or red (2.5YR 4/6) splotched and streaked with yellow; firm cherty silty clay; moderate medium to coarse angular blocky structure.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Hardin County, Tennessee SOIL TYPE Beason silt loam

LAB NOS. 12368 - 12374 SOIL NOS. S59Tenn-36-8

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12368	0-10	Ap	0.4a	1.1a	0.8a	1.4a	2.7b	67.8	25.8	25.5	45.7	-	sil
12369	10-19	B1g	0.7a	2.7a	1.9a	2.6a	3.2b	55.3	33.6	23.2	36.5	Tr.	sicl
12370	19-26	B2g	0.2a	1.5a	1.3a	2.7a	7.7b	50.5	36.1	30.0	29.8	-	sicl
12371	26-39	B3m1g	0.2a	0.7a	0.7a	2.6a	13.0b	47.9	34.9	35.3	27.4	-	sicl
12372	39-48	B3m2g	0.1a	0.6a	0.8a	2.4a	4.3b	55.7	36.1	26.6	34.8	-	sicl
12373	48-60	B3m3g	<0.1	<0.1	0.1a	1.2c	3.8	54.2	40.7	24.7	34.1	-	sic
12374	60-71+	C	<0.1	0.1	0.6	5.3	8.0	50.2	35.8	31.1	30.5	-	sicl

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3%	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12368	5.9			1.43	0.125	11	2.9	20.6	1.56	23.7	1.54	1.62	11.6
12369	5.0			0.40	0.054	7	3.9	22.2	1.50	24.1	1.50	1.56	14.9
12370	5.0			0.39	0.051	8	3.4	20.8	1.59	21.8	1.58	1.66	15.5
12371	4.9			0.32			2.7	19.9	1.61	21.4	1.60	1.67	14.9
12372	4.9			0.27			3.2	18.2	1.67	21.1	1.63	1.70	15.0
12373	4.9			0.28			3.1	19.9	1.67	21.7	1.63	1.71	17.2
12374	4.9			0.20			3.0	18.3	1.70	21.2	1.65	1.74	14.7

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a Na	6P2a K	6Q2a H	5C1 Base Sat.% NH_4OAc	5C3 Base Sat.% on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g	8D3 Ca/Mg
		milliequivalents per 100g soil									
12368	15.4	9.9	1.1	<0.1	0.2	10.3	73	52	11.2	21.5	9.0
12369	16.1	5.6	1.2	0.1	0.2	16.5	44	30	7.1	23.6	4.7
12370	17.4	5.0	1.7	0.1	0.2	17.8	40	28	7.0	24.8	2.9
12371	16.7	4.3	1.8	0.1	0.2	15.5	38	29	6.4	21.9	2.4
12372	15.9	4.0	1.7	0.2	0.2	16.2	38	27	6.1	22.3	2.4
12373	16.5	4.2	1.7	0.2	0.2	15.8	38	28	6.3	22.1	2.5
12374	13.8	3.6	1.6	0.2	0.2	13.5	40	29	5.6	19.1	2.2

a. Many Fe-Mn? bearing aggregates.
b. Few Fe-Mn? bearing aggregates.
c. Common Fe-Mn? bearing aggregates.

Soil type: Beason silt loam

Soil No. : S59Tenn-36-8

Location: Hardin County, Tennessee, 65 miles southwest of Savannah on Pittsburg Ferry road; 1/4 mile east of Tennessee River, on J. Hughes farm. Photo: AIK-7F-96,(1955)

Vegetation and Use; Wheat stubble, Johnson grass and ragweed; cultivated land.

Slope and Land Form: Level (0 to 1 percent) Tennessee River terrace land; slight concave. Elevation 386 feet.

Drainage and Permeability: Somewhat poorly drained; slow runoff; slow permeability.

Parent Material: Old alluvium from sediments chiefly of limestone origin.

Samples collected by: C. B. Breinig, Edwood Pedersen, George Phibbs, W. H. Proffitt, Bobby Hinton, E. T. Lampley, E. C. Sease, and T. R. Love, October 22,1959.

Profile described by: W. H. Proffitt, T. R. Love and E. C. Sease. October 22, 1959.

Horizon and Lincoln Lab.No.	Depth	
Ap 12368	0 to 10 inches	Dark grayish brown (10YR 4/2) silt loam; weak fine crumb structure; very friable; common fine roots; few fine pores; abrupt smooth boundary.
B1g 12369	10 to 19 inches	Grayish brown (10YR 5/2) to brown (10YR 5/3) heavy silty clay loam; few fine faint mottles of brown (10YR 4/3) and light brownish gray (10YR 6/2); weak medium subangular blocky breaking into weak fine granular structure; friable; many fine pores; common small (1-2 mm.) hard rounded concretions; clear irregular boundary.
B2g 12370	19 to 26 inches	Mottled grayish brown (2.5Y 5/2), gray (10YR 5/1), brown (10YR 4/3) and yellowish brown (10YR 5/4) silty clay; mottles are many medium faint; weak coarse subangular blocky structure; firm; few to common rounded concretions; few segregations; few black coatings or stains; some peds coated with grayish brown (10YR 5/2); gradual wavy boundary.
B3m1g 12371	26 to 39 inches	Mottled light brownish gray (10YR 6/2), grayish brown (10YR 5/2) and brown (10YR 4/3) silty clay; mottles are many fine faint; weak coarse angular blocky structure; very firm; some peds coated with grayish brown (10YR 5/2) silt; common black stains or coatings on some peds; few pores; diffuse smooth boundary.
B3m2g 12372	39 to 48 inches	Mottled dark yellowish brown (10YR4/4), dark brown (7.5YR4/4) and light brownish gray (10YR6/2) silty clay; mottles are many; medium faint; weak coarse prismatic structure breaking into weak coarse angular blocky structure; very firm; peds coated with grayish brown (10YR5/2) silt; few small pores; common small concretions; common black coatings or stains on some peds; diffuse smooth boundary.
B3m3g 12373	48 to 60 inches	Dark yellowish brown (10YR 4/4) silty clay; common medium faint mottles of pale brown (10YR6/3), light brownish gray (10YR6/2), grayish brown (10YR5/2) and dark brown (7.5YR4/4); weak medium prismatic breaking into weak coarse angular blocky structure; very firm; most peds coated with grayish brown (10YR5/2); some peds have black coatings or stains; few small concretions; gradual wavy boundary.
C 12374	60 to 71 inches plus	Dark yellowish brown (10YR4/4-3/4) light silty clay; weak coarse angular blocky structure to massive; some peds coated with grayish brown (10YR5/2), brown (10YR5/3) and dark brown (7.5YR4/4); weak coarse angular blocky structure to massive; very firm; few black stains or segregations on some ped faces; few fine pores; few concretions 2 to 6 mm. in diameter; few fine mica flakes.

Remarks: Colors given are for moist soil.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Hardin County, Tennessee SOIL TYPE Beaugon silt loam

LAB NOS. 12631 - 12637 SOIL NOS. S59Tenn-36-10

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
12631	0-7	Ap	0.2a	0.4a	0.3a	0.7a	1.8b	70.2	26.4	19.7	52.7	-	sil
12632	7-18	B1g	0.7a	1.8a	1.0a	1.8a	3.3c	56.1	35.3	21.1	39.3	-	sicl
12633	18-28	B2g	1.1a	1.6a	0.9a	1.9a	3.5d	52.3	38.7	18.2	38.7	-	sicl
12634	28-37	B3m1g	1.0a	1.9a	1.0a	1.9a	3.4c	49.9	40.9	18.8	35.6	-	sic
12635	37-46	B3m2g	1.7a	2.1a	1.0a	2.0c	3.8c	48.6	40.8	17.0	36.6	-	sic
12636	46-63	B3m3g	0.4a	1.2a	1.0a	2.4c	5.6b	52.0	37.4	23.6	35.4	-	sic
12637	63-86	C	<0.1	0.2d	0.3d	4.7	16.0	48.0	30.8	40.8	27.0	-	cl

LABORATORY NUMBER	pH 8C1a H_2O 1:1	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12631	5.7	1.18	0.111	11	3.2	24.1	1.36	27.3	1.36	1.44	12.0
12632	4.9	0.40	0.060	7	4.3	23.3	1.49	25.5	1.48	1.56	15.7
12633	5.0	0.44	0.065	7	4.3	24.6	1.44	25.8	1.43	1.54	16.8
12634	5.0	0.24			3.9	23.8	1.47	25.4	1.46	1.57	16.9
12635	4.9	0.17			4.2	22.8	1.54	24.0	1.53	1.60	16.6
12636	4.9	0.13			3.8	20.5	1.65	22.3	1.61	1.68	15.9
12637	4.9	0.13			3.2	18.2	1.66	21.5	1.62	1.70	13.8

LABORATORY NUMBER	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5C1 Base Sat.% NH_4OAc	5C3 Base Sat.% on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations	8D3 Ca/Mg
		milliequivalents per 100g soil									
12631	14.0	9.3	1.0	9.6	<0.1	0.2	75	52	10.5	20.1	9.3
12632	17.2	4.7	1.1	16.7	<0.1	0.2	35	26	6.0	22.7	4.3
12633	18.8	6.3	1.7	15.2	0.1	0.2	44	35	8.3	23.5	3.7
12634	19.7	5.1	1.6	16.5	0.1	0.2	36	30	7.0	23.5	3.2
12635	18.5	3.0	1.5	17.4	0.1	0.2	26	22	4.8	22.2	2.0
12636	16.0	1.8	1.4	18.2	0.1	0.2	22	16	3.5	21.7	1.3
12637	14.4	2.3	2.3	13.1	0.3	0.2	35	28	5.1	18.2	1.0

a. Many Fe-Mn? bearing aggregates.
b. Few Fe-Mn? bearing aggregates.
c. Common Fe-Mn? bearing aggregates.
d. Few Fe-Mn? bearing aggregates. Few mica fragments.

Soil type: Beason silt loam

Soil No.s. : S59Tenn-36-10

Location: Hardin County, Tennessee, 3 miles northwest of Savannah on Coffee Landing Road, 100 yards west of road. Photo AIK-6F-166(1955)

Vegetation and Use; Cultivated - corn.

Slope and Land Form: Nearly level (0-1 percent) Tennessee River terrace. Elevation 377 feet.

Drainage and Permeability: Somewhat poorly drained; slow runoff; slow permeability.

Parent Material: Old alluvium from sediments of limestone origin.

Samples collected by: C. B. Breinig, T. R. Love, W. H. Proffitt, E. T. Lampley, Bobby Hinton, E. C. Sease.

Profile described by: W. H. Proffitt, and E. C. Sease.

Harison and Lincoln Lab.No.	Depth	
Ap 12631	0 to 7 inches	Dark grayish brown (10YR 4/2) silt loam; weak fine crumb structure; very friable; common fine roots; few small concretions; clear wavy boundary. 6 to 12 inches thick.
B1g 12632	7 to 18 inches	Brown (10YR 5/3) silty clay loam; few fine faint mottles of yellowish brown (10YR 5/4) and grayish brown (10YR 5/2); weak fine subangular blocky structure; firm to friable few patchy clay films; few small roots; common small pores; few fine brown and black concretions and segregations; clear wavy boundary. 9 to 11 inches thick.
B2g 12633	18 to 28 inches	Mottled brown (10YR 5/3); yellowish brown (10YR 5/4); grayish brown (10YR 5/2); and strong brown (7.5YR 5/6); silty clay; mottles are many medium faint, weak fine subangular and angular blocky to vesicular; firm; patchy clay films; many voids or pores; few small brown and black hard concretions; clear wavy boundary. 7 to 11 inches thick.
B3alg 12634	28 to 37 inches	Mottled brown (10YR 5/3); yellowish brown (10YR 5/4-5/6); and grayish brown (10YR 5/2); silty clay; mottles are many medium faint; weak fine subangular and angular blocky structure to massive; firm; many small brown and black hard concretions; diffuse wavy boundary. 9 to 12 inches thick.
B3m2g 12635	37 to 46 inches	Mottled brown (10YR 5/3); yellowish brown (10YR 5/4) and grayish brown (10YR 5/2) silty clay; mottles are many, medium, faint; weak medium subangular blocky structure to massive; firm; few patchy clay films; common small pores; many small hard brown and black concretions; gradual wavy boundary. 8 to 16 inches thick.
B3m3g 12636	46 to 63 inches	Mottled grayish brown (10YR 5/2); light brownish gray (10YR 6/2) and light yellowish brown (10YR 6/4) silty clay; mottles are many medium faint; weak medium subangular blocky structure to massive; many small dark brown soft and hard concretions and segregations; few black stains; gradual wavy boundary. 15 to 23 inches thick.
C 12637	63 to 86 inches	Dark brown (7.5YR 4/4) to dark yellowish brown (10YR 4/4) silty clay loam; with common medium faint mottles of light brownish gray (10YR 6/2); grayish brown (10YR 5/2) brown (10YR 5/3) and strong brown (7.5YR 5/6); weak coarse angular blocky structure to massive; friable; few fine pores; few black stains and segregations; common fine mica flakes.

Remarks: Colors given are for moist soil.

SCS-421
10-66 (Rev. 8-68)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Dodge cherty silt loam, steep phase SOIL Nos. S54Tenn-16-7 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551318 - 551320

Depth (in.)	Horizon	1B1b Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (< 0.002)	Sand (Size class and particle diameter (mm) 3A1) Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt 0.05-0.02	Int. III (0.02-0.002)	Int II (0.2-0.02)	(2-0.1)		3B2 Cm	Coarse fragments 3B1 2A2 ≥ 2 Pct.	2-19	19-76
		Pct. of < 2 mm														Pct.	Pct. of < 76mm	
1-9	A2		68.5	13.4	4.8	3.4	1.8	3.1	5.0		48.8	26.4				33		
9-20	C1		60.9	11.2	8.6	6.1	2.6	4.4	6.2		42.8	26.8				58		
20-60+	C2		50.6	29.3	5.4	4.3	1.9	3.5	5.0		36.9	20.7				47		

Depth (in.)	6A1e Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density 4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content 4B1c ⅓ bar Pct.	4B2 15 bar Pct.	4C1 WRD in/in	pH 8C1c (1:1) KCl	8C1a (1:1) H_2O
1-9	1.37	0.080	17			1.0								5.0
9-20	0.31	0.027				1.0								4.8
20-60+	0.28	0.035				2.6								4.6

Depth (in.)	Extractable bases 5B1a Ca	Mg	Na	K	Sum	6H1a Ext. acidity	CEC 5A3a Sum cations	6G1d Ext Al	Ratios to clay CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg	Base saturation 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g													
1-9	0.4	0.2	0.1	0.2		7.2	8.1						11	
9-20	0.3	0.3	tr.	0.2		2.8	3.6						22	
20-60+	1.3	1.1	tr.	0.2		5.9	8.5						30	

Depth (in.)	Clay Fraction Analysis 7A1b-d Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	2:1						7A3	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

USDA-SCS-HYATTSVILLE, MD. 1966

Soil Type: Bodine cherty silt loam, steep phase.
Soil No.: S54Tenn-16-7
Location: Coffee County, Tennessee. 3.9 miles west of Rutledge Falls Church on gravel road to curve at second house past Woodland Church of Christ. 150 feet north of road at curve and 50 feet south of where two small drainageways intersect. Aerial photo 5G-87.
Vegetation and land use: Hardwood forest consisting chiefly of white oaks, hickory, and red oaks.
Slope and land form: 25 percent slope.

Horizon and Beltsville Lab. No.	
O1, O2 Not Sampled	1 to 0 inches. Leaf mold, partly decayed organic matter and forest litter.
A1 Not Sampled	0 to 1 inch. Dark grayish brown or grayish brown (10YR 4/2 - 5/2) very friable cherty silt loam; weak fine or medium granular structure.
A2 551318	1 to 9 inches. Light yellowish brown or pale brown (10YR 6/4 - 6/3) very friable cherty silt loam; moderate medium crumb structure.
C1 551319	9 to 20 inches. Yellowish brown to brownish yellow (10YR 5/6 - 6/6) very cherty friable silt loam or silty clay loam; weak fine to medium angular blocky structure; coarse angular chert fragments comprise 50 percent or more of the soil mass.
C2 551320	20 to 60 inches plus. Chert beds of coarse angular fragments intersilted with mottled reddish yellow, yellowish red, yellow, brown, and gray silty clay or silty clay loam material.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Bodine cherty silt loam, steep phase SOIL Nos. S54Tenn-16-9 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551327 - 551329

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm														Pct. of < 76mm		
1-9	A2		68.2	14.5	5.2	3.2	1.4	2.6	4.9		50.9	23.7				21		
9-20	C1		63.3	13.9	6.9	4.9	1.9	3.3	5.8		44.3	26.7				40		
20-60+	C2		59.3	15.4	7.2	5.0	2.1	3.9	7.1		37.8	31.0				45		

Depth (in.)	8A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density: g/cc	4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: Pct.	4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in		pH: 8C1c (1:1) KCl	8C1e (1:1) H_2O
1-9	1.42	0.110	13			1.0												5.1
9-20	0.35	0.036				1.3												5.2
20-60+	0.19	0.027				1.7												5.0

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations		6G1d Ext. Al			Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																	
1-9	0.6	0.8	tr.	0.3		8.5	10.2										17	
9-20	1.0	0.9	tr.	0.2		3.7	5.8										36	
20-60+	0.8	1.3	tr.	0.2		3.7	6.0										38	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite	
	7A2 X-ray						7A3		

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

USDA-SCS-HYATTSVILLE MD 1968

Soil Type: Bodine cherty silt loam, steep phase.
Soil No.: 854Tenn-16-9
Location: Coffee County, Tennessee. 2.8 miles south on Friendship-Mountview road (which is the first road to the south after sawmill 0.25 mile west of Blanton's Chapel). 120 yards south of T. A. Wiser's house to a power pole on west side of road and 70 feet east of road at power pole. Aerial photo 50-108.
Vegetation and land use: Mixed hardwood forest.
Slope and land form: 20 to 25 percent.

Morison and Beltsville Lab. No.	
O1, O2 Not Sampled	1 to 0 inches. Leaf mold, partly decayed organic matter and forest litter.
A1 Not Sampled	0 to 1 inch. Dark grayish brown or grayish brown (10YR 4/2 - 5/2) very friable cherty silt loam; weak fine or medium granular structure.
A2 551327	1 to 9 inches. Light yellowish brown or pale brown (10YR 6/4 - 6/3) very friable cherty silt loam; moderate medium crumb structure.
C1 551328	9 to 20 inches. Yellowish brown to brownish yellow (10YR 5/6 - 6/6) very cherty friable silt loam or silty clay loam; weak fine to medium angular blocky structure; coarse angular chert fragments comprise 50 percent or more of the soil mass.
C2 551329	20 to 60 inches plus. Chert beds of coarse angular fragments intersilted with mottled reddish yellow, yellowish red, yellow brown, and gray silty clay or silty clay loam material.

OIL SURVEY LABORATORY Lincoln, Nebr. October 1963

SOIL TYPE Bosket silt loam **LOCATION** Dyer County, Tennessee

SOIL NOS. 861Tenn-23-12 **LAB. NOS.** 16454-16459

DEPTH INCHES	HORIZON	1R1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	3A1 0.02-0.002	2A2 > 2	TEXTURAL CLASS
0-6	Ap	-	0.3a	0.4a	2.9	17.8	64.9	13.7	70.3	14.5	-	
6-14	B21	-	Tr.	Tr.	1.5	21.3	53.2	24.0	60.6	15.3	-	
14-24	B22	-	-	Tr.	0.9	16.4	59.8	22.9	59.9	17.1	-	
24-34	B3	-	-	Tr.b	0.4a	6.7a	74.1	18.8	59.1	22.1	-	
34-40	C1	-	Tr.b	0.1b	1.1a	8.6	70.5	19.7	56.9	23.1	-	
40-50	C2	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-	

8C1a pH 1:1	6E1c $CaCO_3$ equivalent %	ORGANIC MATTER 6A1a O.C. c %	6B1a N %	C/N	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	A.D. 4A1b g/cc	WATER RETENTION 4B1b 1/3-Bar Pieces %	4B2 15-Bar Sieved %	4C1 15-to 1/3-Bar in./in.
5.5		0.51	0.056	9	7.8	1.50	11.4	1.42	1.49	13.6	6.9	.10
4.8		0.32	0.044	7	13.1	1.58	22.4	1.52	1.59	20.1	10.7	.14
4.8		0.19	0.037		15.3	1.57	24.1	1.52	1.59	23.2	11.1	.18
4.9		0.16			16.0	1.50	26.7	1.46	1.52	24.2	10.1	.20
4.9		0.10			15.9	1.50	26.6	1.46	1.53	25.1	10.4	.21
4.6		0.10			12.2	1.48	26.5	1.44	1.50	19.7	8.5	.16

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6R2b Ca	6Q2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	5C1 Base Sat.% NH_4OAc	5C3 Base Sat.% on Sum Cations	6G2a Ext. Al me/100g	6C1a Ext. Iron as Fe %	SiR Ratios to Clay 15-Atm. Water	NH_4OAc CEC	Ext. Iron
	milliequivalents per 100g. soil											
8.7	4.9	1.6	4.2	Tr.	0.2	77	61	0.1	0.7	.50	.64	.051
13.6	4.8	2.2	10.3	0.1	0.3	54	42	3.0	1.1	.44	.57	.046
14.2	5.1	2.5	10.3	0.1	0.3	56	44	2.7	1.3	.48	.62	.057
13.8	5.7	2.6	8.5	0.1	0.3	63	50	1.9	1.3	.54	.73	.069
14.9	6.7	3.0	8.0	0.1	0.3	68	56	1.6	1.2	.53	.76	.061
12.7	5.9	2.8	6.8	0.1	0.2	71	57	1.5	1.0	.57	.86	.068

a. Few Fe-Mn nodules.
b. Common Fe-Mn nodules.
c. 4.0 Kg/M² to 50 inches.

Soil type: Bonket silt loam
Soil No.: S61Tenn-23-12
Location: Dyer County, Tennessee; from Bogota 1.2 miles west to gravel road - on gravel road 1.7 miles south to junction - on gravel road east 150 feet, then south 0.2 mile to another gravel road - on gravel road east 0.4 mile - north of gravel road 300 feet to sample site. Aerial photo AIN-2R-164.
Vegetation and use: Recently combined soybeans.
Slope and land form: Nearly level, about 2 percent, old natural levee of Mississippi River.
Drainage and permeability: Well drained with slow runoff and medium internal drainage; permeability is moderate.
Parent material: Alluvium from Mississippi River.
Collected by: R. J. Anderson, John L. Millet, J. A. Elder, E. C. Sease, W. C. Moffitt, C. L. Moore, and W. C. Jackson.
Described by: W. T. Brown, October 18, 1961.

Horizon and Lincoln Lab. Number	
Ap 16454	0 to 6 inches. Brown (10YR 4/3) silt loam; weak fine granular structure; very friable; firm, massive plow pan in lower one inch; many fine roots; abrupt smooth boundary.
B21 16455	6 to 14 inches. Brown (10YR 4/3) silty clay loam with ped surfaces of dark brown (7.5YR 4/4); weak coarse prismatic structure breaking to moderate medium subangular blocky structure; friable; few fine roots; few fine pores; few wormholes; gradual smooth boundary.
B22 16456	14 to 24 inches. Brown (10YR 4/3) silt loam with ped surfaces of dark brown (7.5YR 4/4); weak coarse prismatic structure breaking to moderate medium subangular blocky structure; friable; few fine roots; few fine pores; few wormholes; clear smooth boundary.
B3 16457	24 to 34 inches. Brown (10YR 4/3) silt loam with ped coatings of dark brown (7.5YR 4/4); weak coarse prismatic structure breaking to weak medium angular blocky structure; friable; common fine pores; clear smooth boundary.
C1 16458	34 to 40 inches. Brown (10YR 4/3) silt loam; weak coarse prismatic structure; friable; few fine pores; clear smooth boundary.
C2 16459	40 to 50 inches. Dark brown (7.5YR 4/4) silt loam; massive; very friable; few fine pores; few old worm channels; abrupt smooth boundary.
Du1	50 to 53 inches. Brown (10YR 4/3) loamy sand; massive; very friable; abrupt smooth boundary.
Du2	53 to 63 inches. Brown (10YR 4/3) silt loam; contains thin strata of silty clay loam with common fine grayish brown (10YR 5/2) mottles; massive; friable; common fine pores; clear smooth boundary.
Du3	63 to 68 inches. Yellowish brown (10YR 5/4) silty clay loam with common medium grayish brown (10YR 5/2) strong brown (7.5YR 5/6) mottles; massive; friable; few fine pores.

Remarks: Ap, B22, and C2 were sampled for the Bureau of Public Roads. Colors and Munsell notations are for moist soil; soil was dry when sampled. All samples were fumigated with methyl bromide for 24 hours.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1963

SOIL TYPE Bosket silt loam **LOCATION** Dyer County, Tennessee

SOIL NOS. S61Tenn-23-13 **LAB. NOS.** 16460-16466

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (In mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 0.2-0.02	0.02-0.002	2A2 > 2	TEXTURAL CLASS
0-7	Ap	Tr.	1.0	3.8	12.1	9.1	65.7	8.3	60.6	20.5	-	
7-12	B1	Tr.	0.4	1.8	7.4	8.0	60.4	22.0	50.3	21.9	-	
12-18	B21	-	0.1	0.8	5.5	12.0	49.8	31.8	48.5	17.1	-	
18-25	B22	-	0.1	0.6	5.5	17.2	47.6	29.0	54.0	14.6	-	
25-30	B3	-	0.1	0.6	5.4	16.5	52.6	24.8	58.6	13.6	-	
30-40	C	-	0.1	1.9	18.6	16.6	44.2	18.6	60.5	8.4	-	
40-52	D	Tr.	1.0	6.3	58.0	21.8	9.1	3.8	63.6	3.0	-	

8C1a pH 1:1	6E1c $CaCO_3$ equivalent %	ORGANIC MATTER 6A1a O.C. a %	6B1a N %	C/N	BULK DENSITY 4E1a Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	A.D. 4A1b g/cc	WATER RETENTION 4B1b 1/3-Bar Pieces %	4B2 15-Bar Sieved %	4G1 15-to 1/3-Bar in./in.
5.8		0.50	0.050	10	2.9	1.57	21.1	1.51	1.55	12.8	3.5	.14
5.4		0.26	0.047	6	8.2	1.60	19.4	1.49	1.58	16.7	9.2	.11
5.3		0.26	0.047	6	11.5	1.65	22.0	1.52	1.67		14.0	
5.0		0.19	0.041		11.8	1.62	21.8	1.52	1.63	23.8	13.4	.16
4.3		0.19			9.6	1.62	23.6	1.53	1.63	22.4	11.7	.16
4.5		0.10			6.9	1.68	19.3	1.62	1.67	14.4	8.6	.09
5.1		0.02									2.4	

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6G2b Mg	6H1a H	6P2a Na	6Q2a K	5C1 Base Sat. % NH_4OAc	5C3 Base Sat. % on Sum Cations	6G2a Ext. Al me/100g	6C1a Ext. Iron as Fe %	SIR Ratios to Clay 15-Atm. Water	NH_4OAc CEC	Ext. Iron
	milliequivalents per 100g. soil											
5.1	3.0	0.6	5.6	Tr.	0.2	74	40	Tr.	0.5	.42	.61	.060
10.8	6.6	1.6	4.7	Tr.	0.3	79	64	0.1	1.0	.42	.49	.045
17.0	10.5	3.4	6.8	0.1	0.4	85	68	0.3	1.5	.44	.53	.047
17.5	8.8	3.4	8.5	0.2	0.4	73	60	1.5	1.5	.46	.60	.052
15.2	6.2	2.8	9.4	0.1	0.3	62	50	3.0	1.4	.47	.61	.056
11.0	3.6	2.0	7.5	0.1	0.2	54	44	2.5	1.1	.46	.59	.059
3.7	1.6	0.7	2.1	Tr.	0.1	65	53	0.2	0.7	.63	.97	.184

a. 3.7 Kg/M^2 to 40 inches.

Soil type: Bosket silt loam
Soil Nos. : S61Tenn-23-13
Location: Dyer County Tennessee; from Bogota 1.2 miles west of gravel road - on gravel road 0.5 mile south to another gravel road - on gravel road 0.5 mile east to bend in road - along fence row 400 feet to sample site which is 30 feet south of fence row and about 400 feet north of a gravel road. Aerial photo AIN-2R-126.
Vegetation and use: Recently combined soybeans.
Slope and land form: Nearly level, about 2 percent, old natural levee of Mississippi River.
Drainage and permeability: Well drained with slow runoff and medium internal drainage; permeability is moderate.
Parent material: Alluvium from Mississippi River.
Collected by: E. J. Pedersen, J. L. Millet, J. A. Elder, E. C. Sease, W. C. Moffitt, C. L. Moore, and W. C. Jackson.
Described by: W. T. Brown, October 18, 1961.

Horizon and Lincoln Lab. Number	
Ap 16460	0 to 7 inches. Dark grayish brown (10YR 4/2) silt loam; weak fine granular structure, with massive firm plow pan in lower 2 inches; friable; few fine roots; abrupt smooth boundary.
B1 16461	7 to 12 inches. Yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; few fine roots; few fine pores and root holes; clear smooth boundary.
B21 16462	12 to 18 inches. Dark brown (7.5YR 4/4) silty clay loam; weak medium prismatic structure breaking to to moderate medium angular and subangular blocky structure; friable; common fine roots; common fine pores; gradual smooth boundary.
B22 16463	18 to 25 inches. Dark brown (7.5YR 4/4) silty clay loam or silt loam; weak medium prismatic structure breaking to moderate medium angular and subangular blocky structure; friable; common fine roots; common fine pores; clear smooth boundary.
B3 16464	25 to 30 inches. Dark brown (7.5YR 4/4) silt loam; weak medium prismatic structure breaking to weak medium angular and subangular blocky structure; friable; few fine roots; few fine pores; gradual smooth boundary.
C 16465	30 to 40 inches. Brown (10YR 4/3) fine sandy loam; massive; friable; clear smooth boundary.
D 16466	40 to 52 inches. Brown (10YR 4/3) loamy fine sand; massive; very friable; clear smooth boundary.
Du2	52 to 80 inches. Brown (10YR 5/3) fine sand; single grain; loose; strata of 1/2-inch wide brown (10YR 4/3) loamy fine sand are present.

Remarks: Ap, B22, and D were sampled for the Bureau of Public Roads. Colors and Munsell notations given are for moist soil; soil was dry when sampled. All samples were fumigated with methyl bromide for 24 hours.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Burton loam SOIL Nos. S53Tenn-5-27 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53368-53370 April 1965

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)			Coarse fragments 2A2 > 2 Pct.	2 - 19	19 - 76
		Pct. of < 2 mm														Pct.	Pct. of < 76mm	
0-6	A1	54.5	29.8	15.7	6.7	10.1	11.0	17.0	9.7	13.2	16.6	32.2	44.8			tr.		
6-10	B1	53.8	33.1	13.1	2.6	12.5	12.3	16.9	9.5	16.6	16.5	34.9	44.3			tr.		
10-19+	B2	49.9	43.9	6.2	2.2	11.1	11.2	14.7	10.7	17.9	26.0	36.0	39.2			-		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	6C1a Ext. Iron as Fe_2O_3 Pct.	Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH	8C1a (1:1) H_2O
0-6	7.91					2.32											4.2
6-10	2.81					2.40			-								4.5
10-19+	1.78					1.84											4.7

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-6	1.0	0.5	tr.	0.3	1.8	34.5	36.3									5	
6-10	0.2	0.0	tr.	0.1	0.3	25.0	25.3									1	
10-19+	0.1	0.9	tr.	0.1	1.1	20.0	21.1									5	

Depth (in.)					

USDA SCS HYATTSVILLE MD. 1964

Soil Type: Burton loam
Profile No.: 853Tenn-5-27
Location: Blount County, Tennessee

Horizon and Beltsville Lab. No.	
A1 53368	0 to 6 inches. Very dark brown (10YR 2/2) moderate medium crumb very friable loam. Lower boundary irregular, plus or minus 2 inches. Many fine grass roots in upper 3 inches. pH 4.50.
B1 53369	6 to 10 inches. Very dark grayish brown (10YR 3/2) heavy loam with some inclusions from A1. Weak fine subangular blocky structure. Contains a few very small pieces of charcoal in places. Graywacke parent rocks extend into this layer and are weathering within the horizon. pH 5.35.
B2 53370	10 to 19 inches plus. Olive brown (2.5Y 4/4) smooth heavy silt loam or light silty clay loam with weak medium subangular blocky structure. Contains many large size Graywacke rocks, some partly weathered. pH 5.10.

Notes: This soil is well drained and contains a large percent of coarse skeleton. It occupies a knoll area with grass vegetation, chiefly mountain oat grass. Formerly grazed. Colors are for moist soil unless indicated otherwise.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Burton loam SOIL Nos. 853Tenn-5-28 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53371-53376 April 1965

Depth (in.)	Horizon	1B1b Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (< 0.002)	Size class and particle diameter (mm) 3A1 Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)	(2-0.1)			Coarse fragments 2A2 > 2 Pct	2-19	19-76
		Pct. of < 2 mm															Pct of < 76mm	
0-2	A1	47.8	30.0	22.2	5.0	13.5	9.8	12.8	6.7	11.1	18.9	24.5	41.1			tr.		
2-5	A3	47.6	28.6	23.8	5.5	14.2	9.7	13.0	5.2	11.3	17.3	23.7	42.4			8		
5-9	B1	45.7	30.3	24.0	6.3	12.5	9.0	11.7	6.2	11.1	19.2	23.4	39.5			9		
9-14	B2	53.5	36.9	9.6	8.5	13.2	8.7	13.6	9.5	14.7	22.2	31.6	44.0			17		
14-72	B3	57.1	34.8	8.1	5.5	11.6	8.6	17.8	13.6	16.5	18.3	40.7	43.5			15		
72+	C	74.1	23.5	2.4	3.4	9.2	12.2	34.0	15.3	9.7	13.8	44.3	58.8			17		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N	6C1a Ext. Iron as Fe_2O_3 Pct.	Carbonate as $CaCO_3$ Pct		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct	Pct.			pH		8C1a (1:1) H_2O
0-2	6.04			2.72														4.2
2-5	3.78			3.12														4.4
5-9	0.45			3.20														4.4
9-14	0.48			1.92														4.8
14-72	0.12			2.40														5.0
72+	0.12			7.36														4.9

Depth (in.)	Extractable bases 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	5B1a Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-2	0.7	0.9	tr.	0.4	2.0	29.9	31.9									6	
2-5	0.4	0.2	tr.	0.1	0.7	26.5	27.2									2	
5-9	0.5	0.2	tr.	0.1	0.8	18.5	19.3									4	
9-14	0.0	0.2	tr.	tr.	0.2	9.8	10.0										
14-72	0.2	0.1	tr.	tr.	0.3	6.0	6.3									5	
72+	0.3	0.0	tr.	tr.	0.3	6.7	7.0									4	

Depth (in.)

USDA SCS-BELTSVILLE MD 1964

Soil Type: Burton loam
Profile No.: 853[illegible]-5-28
Location: Blount County, Tennessee

Morison and Beltsville Lab. No.	
A1 53371	0 to 2 inches. Very dark brown (10YR 2/2) very porous moderate fine crumb very friable loam with many fine grass roots. pH 4.30.
A3 53372	2 to 5 inches. Very dark grayish brown (10YR 3/2) smooth weak to moderate fine to medium crumb very friable loam. 2-inch transition. pH 4.50.
B1 53373	5 to 9 inches. Brown (7.5YR 4/4) weak fine to medium subangular blocky heavy friable loam or light silty clay loam. Contains numerous small unweathered black shale or slate fragments and a few greenish spots of weathered Graywacke rock. pH 5.15.
B2 53374	9 to 14 inches. Brown (7.5YR 4/4) weak medium subangular blocky friable silty clay loam containing numerous small unweathered black shale or slate fragments. pH 5.10.
B3 53375	14 to 72 inches. Dominantly brown (10YR 4/3) friable more or less structureless silt loam. Contains a large amount of fine black shale or slate fragments and a few larger fragments of partly weathered Graywacke rock. pH 5.35.
C 53376	72 inches plus. Brown to reddish brown (7.5YR 4/4 - 5YR 4/4) friable loam parent material. Contains many small black shale fragments and larger reddish or greenish weathered Graywacke rocks with their original structure. pH 5.25.

Notes: Colors are for moist soil unless indicated otherwise.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Burton loam SOIL Nos. 85-Tenn-5-29 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53377-53381 April 1965

Depth (in.)	Horizon	1B1b Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (< 0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)	(2-0.1)			Coarse fragments 2A2 > 2 Pct.	2-19	19-76
		Pct. of < 2 mm															Pct. of < 76mm	
0-8	A1	37.7	38.9	23.4	10.3	7.9	5.2	8.4	5.9	11.5	27.4	22.2	31.8			tr.		
8-13	A3	32.9	39.2	27.9	3.2	9.7	5.7	8.1	6.2	10.0	29.2	20.7	26.7			tr.		
13-21	B2	32.6	52.4	15.0	2.2	9.1	5.7	8.4	7.2	14.2	38.2	26.2	25.4			tr.		
21-32	B3	32.4	48.0	19.6	2.0	9.0	5.4	8.6	7.4	12.9	35.1	25.2	25.0			tr.		
32+	C	29.9	60.8	9.3	2.2	3.9	2.6	6.7	14.5	31.4	29.4	50.4	15.4			14		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	6C1a Ext. Iron as Fe_2O_3 Pct.	Bulk density g/cc	g/cc	g/cc	Water content Pct.	Pct.	Pct.			pH	8C1a (1:1) H_2O
0-8	9.47					3.84										4.4
8-13	4.73					3.68										4.6
13-21	1.68					3.68										4.6
21-32	1.03					3.12										4.8
32+	0.30					2.40										4.8

Depth (in.)	Extractable bases 5B1a: Ca	Mg	Na	K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations								Base saturation 5C3 Sum Cations Pct	Pct.
	meq/100 g															
0-8	0.1	0.3	tr.	0.2	0.6	37.7	38.3								2	
8-13	0.2	0.3	tr.	0.1	0.6	29.6	30.2								2	
13-21	0.2	0.2	tr.	0.1	0.5	20.9	21.4								2	
21-32	0.2	0.3	tr.	tr.	0.5	17.4	17.9								3	
32+	0.3	0.0	tr.	tr.	0.3	8.6	8.9								3	

Depth (in.)					

USDA SCS-BELTSVILLE, MD 1964

Soil Type: Burton loam
Profile No.: S53Tenn-5-29
Location: Blount County, Tennessee

Horizon and Beltsville Lab. No.	
A1 53377	0 to 8 inches. Black to very dark brown (10YR 2/1-2/2) very friable moderate medium and coarse granular loam. Many fibrous grass roots in upper 3 inches impart a fine granular structure to that portion. pH 4.60.
A3 53378	8 to 13 inches. Dark brown (7.5YR 3/2) weak medium blocky heavy friable loam. Grades through one or two inches of B1 into next horizon. pH 5.10.
B2 53379	13 to 21 inches. Brown (10YR 4/3) weak medium subangular blocky smooth friable light silty clay loam. Gradual transition to B3. pH 5.45.
B3 53380	21 to 32 inches. Brown (10YR 4/3) weak medium crumb friable heavy loam to light silty clay loam with a few dark brown pencil lines along small root channels. pH 5.40.
C 53381	32 inches plus. Grayish brown to brown (10YR 5/2-5/3) friable loam with slight olive cast containing a few fragments of black shale or slate. pH 5.25.

Notes: Colors are for moist soil unless indicated otherwise.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Fayette County, Tennessee SOIL TYPE Calloway silt loam, terrace phase

Lincoln LAB NOS. 12202 - 12208 SOIL NOS. S59Tenn-24-2

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12202	0-6	Ap	0.5a	1.4b	1.9c	2.3c	0.8c	73.7	19.4	36.5	38.6	-	sil
12203	6-11	B2	0.2a	1.0b	0.8c	1.2c	0.6c	72.0	24.2	32.5	40.5	-	sil
12204	11-15	B3mg1	1.0a	1.6a	0.9b	1.2b	0.7b	77.9	16.7	35.7	43.3	-	sil
12205	15-29	B3mg2	0.4a	0.9a	0.7b	0.9b	0.7b	73.8	22.6	35.8	39.0	-	sil
12206	29-39	B3mg3	<0.1	0.4a	0.5a	0.9a	0.6a	77.0	20.6	38.8	39.1	-	sil
12207	39-50	B3mg4	0.1a	1.0b	2.3c	2.8c	0.9c	74.9	18.0	39.8	36.6	-	sil
12208	50-74	B3m5	1.9b	9.0b	14.8	18.4	2.8	40.1	13.0	24.9	21.5	-	l

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12202	6.0			0.59	0.074	8	1.8	22.3	1.44	23.9	1.42	1.47	8.3
12203	5.2			0.31	0.059	5	2.2	23.6	1.37	28.0	1.35	1.46	10.5
12204	5.3			0.15	0.040		2.4	13.3	1.56	24.2	1.51	1.57	8.2
12205	5.1			0.10	0.035		1.5	15.1	1.63	22.2	1.55	1.65	11.6
12206	5.1			0.10			2.1	19.5	1.55	23.9	1.53	1.58	11.0
12207	5.3			0.07			1.9	17.3	1.58	22.9	1.55	1.62	8.9
12208	5.4			0.07			1.0	10.3	1.86	13.4	1.82	1.87	6.2

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6R1a H	5C3 Base Sat. % on Sum Cations	5C1 Base Sat. % NH_4OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg
		milliequivalents per 100g soil							< me/100g ->		
12202	9.0	4.2	2.2	0.1	0.2	6.3	52	74	6.7	13.0	1.9
12203	10.3	2.9	3.7	0.1	0.2	9.8	41	67	6.9	16.7	0.8
12204	9.7	1.3	1.8	0.2	0.2	9.3	27	36	3.5	12.8	0.7
12205	14.2	0.1	6.0	0.8	0.3	10.5	41	51	7.2	17.7	
12206	13.1	0.2	5.4	0.8	0.2	10.5	38	50	6.6	17.1	
12207	11.9	0.2	5.2	0.8	0.2	9.0	42	54	6.4	15.4	
12208	6.1	0.1	2.6	0.3	0.1	6.3	33	51	3.1	9.4	

a. Many Fe-Mn? bearing aggregates.
b. Common Fe-Mn? bearing aggregates.
c. Few Fe-Mn? bearing aggregates.

Soil type: Calloway silt loam, terrace phase
Soil Nos. : 859Tenn-24-2
Location: Fayette County, Tennessee, approximately 17 miles southeast of Somerville, on Cowan Brothers farm, 2 miles south of LaGrange and 650 yards east of LaGrange-Michigan City gravel road. Photo ADB-1F-106(1950)

Vegetation and Use: Cultivated field; grain sorghum.

Slope and Land Form: Nearly level (0-2 percent) broad flat nearly level terrace.

Drainage and Permeability: Somewhat poorly drained; surface runoff slow. Permeability slow to moderately slow.

Parent Material: Loess covered terraces and/or old alluvium from loessial uplands.

Samples Collected by: Edwood Pedersen, George Phibbs, D. K. Springer, M. E. Springer, R. L. Flowers, W. C. Mangrum, R. K. Moore, Louis Dungan, and E. C. Sease.

Profile Described by: R. L. Flowers and E. C. Sease - October 14, 1959.

Horizon and Lincoln Lab. No.	Depth	
Ap 12202	0 to 6 inches	Dark brown (10YR4/3) silt loam; weak fine granular structure; very friable; many small roots; few fine and medium concretions; abrupt wavy boundary. 3 to 7 inches thick.
B2 12203	6 to 11 inches	Dark yellowish brown (10YR4/4) fine silt loam; weak fine and medium subangular blocky structure; friable; slightly hard when dry; many small roots; few fine concretions; clear wavy boundary. 4 to 6 inches thick.
B3mg1 12204	11 to 15 inches	Light yellowish brown (10YR6/4) silt loam, with few fine faint mottles of light gray (10YR7/2) and yellowish brown (10YR5/4); weak fine subangular blocky structure; friable, common roots; common small brown concretions; clear wavy boundary. 2 to 5 inches thick.
B3mg2 12205	15 to 29 inches	Mottled brown (10YR5/3) and gray (10YR6/1) silt loam; weak medium subangular blocky structure to vesicular; slightly hard when moist; brittle; friable when crushed; few fine roots; few fine dark yellowish brown (10YR4/4) soft concretions; abrupt irregular boundary.
B3mg3 12206	29 to 39 inches	Dark yellowish brown (10YR4/4) silt loam; common gray (10YR6/1) on polygon faces and gray (10YR6/1) tongues inside the polygons; coarse prismatic structure breaking into weak fine angular and subangular blocky structure; slightly hard when moist; brittle breaking to friable; prisms or polygons about six inches in diameter; top of prisms at 29 inches and extend to 74 inches; 50 percent polygons; few small pores; arbitrary boundary.
B3mg4 12207	39 to 50 inches	Dark yellowish brown (10YR4/4) silt loam with common gray (10YR6/1) tongues; gray (10YR6/1) on polygon faces; coarse prismatic structure breaking into weak medium angular blocky structure; 25 percent polygons; slightly hard; friable when crushed; few pores; clear wavy boundary.
B3mg5 12208	50 to 74 inches	Brown (10YR5/3) heavy loam; massive; slightly hard when moist; brittle; friable when crushed, few black stains; clear wavy boundary.
Du (Not sampled)	74 to 80 inches plus	Pale brown (10YR6/3) sand, single grain; (water table 74 inches)

Remarks: Colors given are for moist soil.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Fayette County, Tennessee SOIL TYPE Calloway silt loam, terrace phase

Lincoln LAB NOS. 12226 - 12236 SOIL NOS. S59Tenn-24-5

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1 COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
12226	0-6	Ap	1.1a	1.7a	1.5c	1.4b	0.6b	78.1	15.6	37.7	41.4	-	sil
12227	6-10	B21	0.5a	1.4a	1.2c	1.1c	0.6a	72.3	22.9	33.4	39.9	-	sil
12228	10-16	B22g	0.7a	1.8a	1.2c	1.1c	0.8a	70.7	23.7	32.9	39.0	-	sil
12229	16-19	B3g	0.6a	2.2a	1.3c	1.3c	0.8a	72.1	21.7	34.3	39.1	Tr.	sil
12230	19-26	B3mg1	0.9a	2.3a	1.5c	1.4c	0.9a	75.5	17.5	36.6	40.3	Tr.	sil
12231	26-37	B3mg2	0.7a	2.0a	2.3b	2.0b	0.8b	69.7	22.5	34.3	36.8	Tr.	sil
12232	37-52	B3mg3	0.2a	2.2a	4.2b	3.2b	0.9b	69.7	19.6	37.5	33.9	Tr.	sil
12233	52-58	B3mg4	0.3	6.4	13.2	10.0	1.6	54.3	14.2	32.3	25.8	-	sil
12234	58-69	B3mg5	0.2	9.7	19.3	14.2	2.1	44.0	10.5	27.0	21.9	-	l
12235	69-85	B3u	0.2	12.2	24.2	19.2	2.3	34.3	7.6	24.1	16.7	-	sl
12236	85-113+	Du	0.7	17.1	35.6	28.1	1.9	13.6	3.0	14.4	6.6	-	ls

LABORATORY NUMBER	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY g 4B4 Field State Water %	4A1a Field State g/cc	4B3 30-Cm. Water %	4A1c 30-Cm. g/cc	4A1h O.D. g/cc	4B2 15-Bar Water %
12226	5.4			1.15	0.111	10	2.0	20.0	1.54	23.1	1.52	1.56	7.5
12227	4.9			0.28	0.055	5	2.3	20.6	1.46	25.2	1.46	1.51	9.9
12228	4.8			0.18	0.046		2.8	18.3	1.43	26.1	1.40	1.45	11.2
12229	4.9			0.18	0.041		3.2	17.2	1.42			1.44	10.7
12230	5.1			0.10	0.029		2.6	14.8	1.56	21.4	1.53	1.55	8.9
12231	5.0			0.09			1.5	14.9	1.61	21.5	1.50	1.61	11.8
12232	5.3			0.07			1.8	15.8	1.68	19.4	1.62	1.67	9.8
12233	5.6			0.06			1.3	12.8	1.72	17.0	1.64	1.68	7.9
12234	5.9			0.06			0.9	9.6	1.84	13.8	1.75	1.78	5.1
12235	6.1			0.04			0.7	6.3	1.83	12.2	1.74	1.75	3.6
12236	5.5			0.03			0.3						1.6

LABORATORY NUMBER	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat. % on Sum Cations	5C1 Base Sat. % NH_4OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg
	milliequivalents per 100g soil								<-me/100g->		
12226	9.5	3.6	1.2	0.1	0.3	13.9	27	55	5.2	19.1	3.0
12227	10.8	2.1	1.9	0.1	0.2	18.8	19	40	4.3	23.1	1.1
12228	11.8	1.4	2.1	0.1	0.2	12.2	24	32	3.8	16.0	0.7
12229	11.1	1.1	1.8	0.1	0.2	11.3	22	29	3.2	14.5	0.6
12230	10.0	0.5	2.1	0.2	0.2	10.0	23	30	3.0	13.0	
12231	14.0	0.7	5.8	0.6	0.2	10.5	41	52	7.3	17.8	
12232	12.2	0.7	5.2	0.6	0.2	9.3	42	55	6.7	16.0	
12233	8.9	0.8	5.1	0.6	0.1	5.4	55	74	6.6	12.0	
12234	7.0	0.8	3.8	0.4	0.1	3.4	60	73	5.1	8.5	
12235	4.5	0.6	2.5	0.3	0.1	3.1	53	78	3.5	6.6	
12236	1.5	0.2	0.4	0.1	<0.1	2.9	19	47	0.7	3.6	

a. Many Fe-Mn? bearing aggregates.
b. Few Fe-Mn? bearing aggregates.
c. Common Fe-Mn? bearing aggregates.
d. See remarks in description.

Soil type: Calloway silt loam, terrace phase

Soil Nos. : S59Tenn-24-5

Location: Fayette County, Tennessee, about 17 miles south of Somerville on Wolf River terrace about 2 miles southwest of LaGrange and 1 mile west of LaGrange-Michigan City Road and about 100 feet north of gravel road on Cosan Brothers Farm. Photo AIB-3F-96(1950)

Vegetation and Use: Cotton

Slope and Land Form: Nearly level (0-2 percent) on broad flat river terrace.

Drainage and Permeability: Somewhat poorly drained; surface runoff slow. Permeability slow to moderately slow.

Parent Material: Loess covered terraces and of old alluvium from loessial uplands.

Samples Collected by: Edwood Pedersen, George Phibbs, R. L. Flowers, W. C. Mangrum, R. K. Moore, and Louis Dungan.

Profile Described by: D. K. Springer and E. C. Sease

Horizon and Lincoln Lab. No.	Depth	
Ap 12226	0 to 6 inches	Dark brown (10YR3/3) silt loam; weak fine granular structure; very friable; many fine roots; few small hard dark brown concretions; clear smooth boundary. 4 to 7 inches thick.
B21 12227	6 to 10 inches	Dark yellowish brown (10YR4/4) heavy silt loam; weak fine and medium subangular blocky structure; friable when moist, slightly hard when dry; few fine roots; few small hard dark brown concretions; clear wavy boundary. 3 to 6 inches thick.
B22g 12228	10 to 16 inches	Yellowish brown (10YR5/4-5/6) heavy silt loam with common medium faint mottles of pale brown (10YR6/3), light yellowish brown (10YR6/4) and dark yellowish brown (10YR4/4); weak medium angular blocky structure; friable when moist, slightly hard when dry; few fine roots; common small pores, few small brown and black, hard and soft concretions; clear smooth boundary. 3 to 6 inches thick.
B3g 12229	16 to 19 inches	Light yellowish brown (10YR6/4) to yellowish brown (10YR5/4) silt loam, with common medium faint mottles of pale brown (10YR6/3), light brownish gray (10YR6/2) and dark yellowish brown (10YR4/4); friable when moist, slightly hard when dry; common small pores; common small brown and black concretions; clear wavy boundary. 2 to 4 inches thick.
B3mg1 12230	19 to 26 inches	Grayish brown (10YR5/2) silt loam; weak fine subangular blocky structure; friable; few small pores; common dark yellowish brown (10YR4/4) and black soft and hard small concretions; pockets of gray (10YR6/1) silt; vesicular; very friable; many dark yellowish brown (10YR4/4) soft and hard small concretions; these gray pockets consisted of about 25 to 50 percent of this horizon; clear wavy boundary. 4 to 12 inches thick.
B3mg2 12231	26 to 37 inches	Gray (10YR6/1) silty clay loam; weak medium angular blocky structure to massive; firm; brittle; 80 percent polygon faces; few fine pores; yellowish brown (10YR5/6) and yellowish red (5YR5/6) soft concretionary material; texture of polygon faces ranges from silty clay to silty clay loam from top to bottom of horizon; abrupt irregular boundary. 5 to 28 inches thick.
B3mg3 12232	37 to 52 inches	Dark brown (7.5YR4/4) silty clay loam with grayish brown (10YR5/2) circular tubes leading from polygon faces; 25 percent polygon faces; interfaces on large polygons are strong brown (7.5YR5/6); polygons 2 to 10 inches in diameter; massive; very firm; slightly hard; brittle; gradual wavy boundary. 7 to 21 inches thick.
B3mg4 12233	52 to 58 inches	Dark brown (7.5YR4/4) clay loam; with common grayish brown (10YR5/2) silt loam circular tubes (1-2 mm in diameter); massive, firm; few fine pores; gradual wavy boundary. 5 to 9 inches thick.
B3mg5 12234	58 to 69 inches	Reddish brown (5YR4/4) loam; massive; firm; brittle; few fine pores; gradual wavy boundary. 10 to 13 inches thick.
B3u 12235	69 to 85 inches	Dark brown (7.5YR4/4) sandy loam; massive; friable; clear wavy boundary.
Du 12236	85 to 113 inches plus	Reddish yellow (7.5YR6/6) sand; single grain; loose; water table at 85 inches.

Remarks: Polygons become more sandy with depth. Appears that clays have been eluviated from the B3mg1 and deposited in the B3mg2. Colors given are for moist soil. Some horizons have lower oven-dry than field-moist bulk density. The field-moist clods were air-dried and then remoistened to 30-cm. tension before being oven-dried and the volume determined. Wetting to 30-cm. tension against a weak confining pressure may result in irreversible expansion. The result would be lower oven-dry bulk density values than would be obtained were the clods oven-dried directly.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Calloway silt loam **LOCATION** Henderson County, Tennessee

SOIL NOS. 855Tenn-39-1 **LAB. NOS.** 7703-7714

DEPTH INCHES	HORIZON	1B1a PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent) 3A1 VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002	2A2 > 2	TEXTURAL CLASS
0-8	Ap	0.6a	1.4b	2.2b	4.4b	1.8b	76.5	13.1	40.1	40.5	Tr.	sil
8-12	B1	0.9a	1.4b	2.2b	5.2b	1.8b	71.9	16.6	40.6	35.8	Tr.	sil
12-16½	B21	0.5a	1.2b	2.0b	4.6b	1.7b	71.2	18.8	39.1	36.3	Tr.	sil
16½-22	B22	0.5a	1.1b	1.9b	4.0b	1.6b	70.9	20.0	37.3	37.4	Tr.	sil
22-26	B3	0.5a	1.3b	2.0b	4.3b	1.6b	71.7	18.6	36.0	39.6	Tr.	sil
26-30	B3m1	0.2a	1.2b	1.7b	4.4b	1.7b	77.1	13.7	40.7	40.5	Tr.	sil
30-36	B3m2	0.4a	0.9b	1.3b	3.0b	1.2b	63.0	30.2	30.4	35.4	Tr.	sicl
36-42	B3m3	0.8a	1.1b	1.3b	2.9b	1.4b	62.3	30.2	30.1	35.2	Tr.	sicl
42-52	C1m	0.6a	1.0b	1.7b	4.1b	2.0b	63.4	27.2	33.4	34.3	Tr.	sicl
52-58	C2	0.5a	1.2b	2.0b	5.1b	2.2b	61.1	27.9	32.7	33.3	Tr.	sicl
58-70	Du1	0.6	1.4a	2.3b	5.5b	2.5b	56.3	31.4	30.3	31.5	Tr.	sicl
70-85	Du2	0.6	1.9a	3.6b	8.0b	3.3b	49.0	33.6	28.2	28.2	Tr.	sicl

8C1a pH 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron Fe_2O_3%		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
6.6			0.98	0.103	10	1.2						
4.6			0.35	0.042	8	1.3						
4.6			0.19	0.031		1.7						
4.5			0.17	0.028		1.7						
4.6			0.17			1.9						
4.8			0.08			1.9						
4.8			0.08			1.6						
4.7			0.07			1.8						
4.9			0.06			1.8						
5.0			0.05			2.1						
4.8			0.05			2.4						
5.2			0.04			3.1						

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH.	5C3 Base Sat. % on Sum Cations	5B1a Sum Bases	5A1a Sum Cations	8D3 Ca/Mg
←	milliequivalents per 100g. soil					5C1		← me/100g →		
8.1	6.2	0.6	4.1	<0.1	0.2	86	63	7.0	11.1	
6.6	1.9	<0.1	6.9	<0.1	0.2	32	23	2.1	9.0	
7.4	1.9	0.2	7.7	0.1	0.1	31	23	2.3	10.0	
7.7	1.6	0.3	8.2	<0.1	0.2	27	20	2.1	10.3	
7.5	1.0	0.3	8.6	0.2	0.1	21	16	1.6	10.2	
6.1	0.2	0.6	6.9	0.2	0.1	18	14	1.1	8.0	
15.8	0.3	2.8	14.8	0.5	0.2	24	20	3.8	18.6	
16.6	0.3	3.2	15.2	0.6	0.2	26	22	4.3	19.5	
14.3	0.6	3.2	12.7	0.6	0.2	32	26	4.6	17.3	
13.0	1.2	3.6	10.2	0.7	0.2	44	36	5.7	15.9	0.3
14.5	2.2	4.4	9.0	0.9	0.2	53	46	7.7	16.7	0.5
13.3	3.6	5.3	5.3	1.0	0.1	75	65	10.0	15.3	0.7

a. Many smooth and irregular light brown to black concr. (Fe-Mn?)
b. Few smooth and irregular light brown to black concr. (Fe-Mn?)

Described by Joseph Winsor, Ralph McCracken, E. C. Sease, Robbie Flowers, C. B. Breinig.

Soil type: Calloway silt loam
Soil No.: 855Tenn-39-1
Date: January 27, 1955
Area: Henderson County, Tennessee
Location: About 10 miles northwest of Lexington, Tennessee. (See photo No. 3F-52) 150 feet south of A. G. Douglass house and 25 feet west of the road. A. G. Douglass house is exactly one mile south of Union Cross School. The site is on a slightly convex ridgetop of 2 percent slope. The ridgetop is the divide between the Tennessee and Mississippi Rivers drainage system.
Present land use: Cultivated field which in 1954 was in annual lespedeza and crabgrass.
Sampling party: Joseph Winsor, Ralph McCracken, E. C. Sease, Robbie Flowers, and C. B. Breinig.

Lincoln Lab. No.	Horizon	Depth	
7703	A_p	0-8 inches	Dark brown (10YR 3/3) friable silt loam, weak medium subangular blocky structure breaking to weak fine medium granular structure under pressure.
7704	B_1	8-12 inches	Yellowish brown (10YR 5/4) friable silt loam with moderate medium and coarse angular blocky structure with tongues and ped coatings of the A_p protruding into this horizon.
7705	B_{21}	12-16½ inches	Light olive brown (2.5Y 5/4) friable heavy silt loam with few faint fine and medium light brownish gray (2.5Y 6/2) mottles. Moderate fine and medium angular blocky structure. Few small ferro-manganese concretions.
7706	B_{22}	16½-22 inches	Light olive brown (2.5Y 5/4) friable to firm light silty clay loam with common fine faint mottles of light brownish gray (2.5Y 6/2). Moderate fine and medium angular blocky structure. Few medium-sized soft brown concretions (3-4 millimeter). Notable clay skins on the ped coatings.
7707	B_3	22-26 inches	Mottled common fine faint light olive brown (2.5Y 5/4), light yellowish brown (2.5Y 6/4), light brownish gray (2.5Y 6/2) firm silt loam; moderate medium angular blocky structure. Few medium-sized soft brown concretions.
7708	B_{3m1}	26-30 inches	Light gray (2.5Y 7/2) firm compact silt loam. Few fine distinct mottles of yellowish brown (10YR 5/6); weak coarse angular blocky; common dark brown concretionary material up to 3 millimeters.
7709	B_{3m2}	30-36 inches	Gray (2.5Y 6/0) firm silty clay loam with seams and balls of clay, somewhat sticky when wet; with few fine faint distinct mottles of yellowish brown (10YR 5/8) in the interior of the peds; strong medium columnar macrostructure and strong medium angular blocky microstructure. Few small dark brown concretions.
7710	B_{3m3}	36-42 inches	Grayish brown (2.5Y 5/2) compact firm silty clay loam with common fine and medium distinct mottles of dark brown (7.5YR 4/4). Strong coarse columnar macrostructure and strong medium and coarse angular blocky microstructure. Pronounced coating of white (2.5Y 8/0) silt on ped surfaces. Common small (1-2 millimeters) dark brown soft concretions.
7711	C_{1m}	42-52 inches	Grayish brown (2.5Y 5/2) compact firm heavy silt loam to silty clay loam with common medium distinct mottles of dark brown (7.5YR 4/4). Moderate medium and coarse angular blocky structure. Some peds are coated with white silt (2.5Y 8/0). A few gray clay seams. There are a few very small dark brown concretions and a small amount of dark brown irregular concretionary material.
7712	C_2	52-58 inches	Yellowish brown (10YR 5/6) firm silty clay loam with few fine distinct mottles of light gray (10YR 7/2). Weak medium and coarse angular blocky structure. A few medium sized (up to 3 millimeters) of small dark brown concretions. A few peds are coated with white silt.
7713	D_{u1}	58-70 inches	Mottled yellowish brown (10YR 5/6), light brownish gray (10YR 6/2), dark brown (7.5YR 4/4); mottles are common, medium, and distinct. Firm fine sandy clay with moderate medium angular blocky structure. Moderate amount of dark brown irregular shaped concretions.
7714	D_{u2}	70-85 inches	Brownish yellow (10YR 6/8) firm light sandy clay with common fine distinct mottles of light brownish gray (10YR 6/2); slightly sticky when wet. The gray material is heavier (clay) than the brown, and occurs in streaks. Weak fine and medium subangular blocky structure.

Remarks: Colors given are for moist soil unless otherwise stated. This is the gently sloping phase of Calloway.

OIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Calloway silt loam **LOCATION** Henderson County, Tennessee

SOIL NOS. S57Tenn-39-7 **LAB. NOS.** 7761-7767

DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	3A1 0.02-0.002	2A2 > 2	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-6	Ap	0.9a	2.6a	3.3a	13.5a	4.9a	63.9	10.9	50.8	26.2	Tr.	sil
6-11	A3	0.8a	1.7a	2.0a	8.2a	3.0a	65.5	18.8	39.7	34.0	Tr.	sil
11-18	B21	0.6a	1.6a	1.8a	7.8a	3.1a	66.8	18.3	39.0	35.9	Tr.	sil
18-24	B22	0.5a	1.9a	1.9a	7.5a	3.4a	67.6	17.2	37.9	37.8	Tr.	sil
24-36	B3m1	0.4a	1.6a	1.7a	6.4a	3.1a	67.2	19.6	36.4	37.9	Tr.	sil
36-48	B3m2	0.5a	1.7a	1.6a	6.1a	2.9a	59.1	28.1	32.6	33.2	Tr.	sicl
48-58	Du1	0.5a	2.1a	3.1a	15.1a	6.8a	53.0	19.4	40.5	29.1	Tr.	sil

8C1a pH 1:1	1:5	1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron Fe_2O_3%		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
			ORGANIC MATTER									
5.2			0.66	0.069	10	1.2						
5.0			0.36	0.054	7	1.6						
5.0			0.21	0.031		1.8						
5.0			0.12	0.020		2.1						
4.9			0.08			1.7						
5.0			0.05			1.7						
4.9			0.05			1.3						

5A1a CATION EXCHANGE CAPACITY NH_4Ac	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg		
	EXTRACTABLE CATIONS 5B1a											
←	milliequivalents per 100g. soil				→			← me/100g →				
5.6	0.9	<0.1	5.3	<0.1	0.2	20	17	1.1	6.4			
7.0	2.2	1.0	5.7	0.1	0.2	50	38	3.5	9.2	2.2		
7.3	1.6	0.4	6.9	0.1	0.2	32	25	2.3	9.2			
7.8	1.0	1.2	7.8	0.2	0.2	33	25	2.6	10.4	0.8		
9.9	0.7	1.8	9.4	0.2	0.2	29	24	2.9	12.3			
15.6	1.0	3.4	14.0	0.4	0.3	33	27	5.1	19.1	0.3		
9.0	1.6	2.9	5.7	0.4	0.2	57	47	5.1	10.8	0.6		

a. Common smooth and irregular light to dark brown concr. (Fe-Mn?)

Described by: E. C. Sease, Robbie Flowers, and Roy K. Moore.

Soil type: Calloway silt loam
Soil Nos.: 857Tenn-39-7
Date: March 4, 1957
Area: Henderson County, Tennessee
Location: About eight miles north of Lexington, Tennessee (see photo No. 3F-56), on gravel road 1/2 mile north of the Parkers Crossroads - Union cross road. On Webster Pendergrass farm 100 yards south of above described gravel road and 90 yards south of tenant house. The site is a slightly convex ridgetop.
Present land use: Idle field which in 1956 was in annual lespedeza and crabgrass.
Sampling party: E. C. Sease, Robbie Flowers, and Roy K. Moore.

Lincoln Lab. No.	Horizon	Depth	
7761	A_p	0-6 inches	Brown to dark brown (10YR 4/3) silt loam; weak fine granular structure; very friable; abrupt smooth boundary.
7762	A_3	6-11 inches	Yellowish brown (10YR 5/4) with a few medium faint mottles of brown to dark brown (10YR 4/3); silt loam; weak fine and medium subangular blocky structure; friable; gradual smooth boundary.
7763	B_{21}	11-18 inches	Yellowish brown (10YR 5/4) with a few fine faint mottles of grayish brown (2.5Y 5/2); silt loam; weak medium subangular blocky structure; friable; gradual smooth boundary.
7764	B_{22}	18-24 inches	Mottled yellowish brown (10YR 5/8), dark yellowish brown (10YR 4/4), and light brownish gray (10YR 6/2); mottles are many, medium, distinct; silt loam; moderate coarse subangular blocky structure; friable; vesicular; clear smooth boundary.
7765	B_{3m1}	24-36 inches	Light brownish gray (2.5Y 6/2) with many coarse prominent mottles of yellowish brown (10YR 5/8) and dark yellowish brown (10YR 4/4); coarse silty clay loam; weak coarse subangular blocky structure; friable; water is perched on this layer in wet seasons; diffuse smooth boundary.
7766	B_{3m2}	36-48 inches	Light brownish gray (2.5Y 6/2) with many coarse prominent mottles of light gray (5Y 7/1) and yellowish brown (10YR 5/8); silty clay loam; very weak coarse angular blocky structure; firm; diffuse smooth boundary.
7767	D_{u1}	48-58 inches	Mottled pale brown (10YR 6/3), yellowish brown (10YR 5/6), and white (5Y 8/1); mottles are many, coarse, prominent; sandy clay loam; massive; brittle; diffuse smooth boundary.
	D_{u2}	58-70 inches	(Not sampled). Mottled yellowish brown (10YR 5/6), dark yellowish brown (10YR 4/4), and light gray (2.5Y 7/0); mottles are many, large, prominent; sandy clay; massive; firm to friable.

Remarks: Colors given are for moist soil unless otherwise stated. This is the gently sloping phase of Calloway.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Fayette County, Tennessee SOIL TYPE Collins silt loam

Lincoln LAB NOS. 12209 - 12212, 12214 - 12216 SOIL NOS. S59Tenn-24-3

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12209	0-6	Ap	0.1	0.5	1.1	2.4	2.1	82.4	11.4	46.1	39.2	-	si
12210	6-11	C11	0.1	0.1	0.2	0.6	0.8	85.1	13.1	45.9	40.3	-	sil
12211	11-21	C12g	0.1	0.2	0.4	0.9	1.5	85.4	11.5	51.8	35.5	-	si/sil
12212	21-33	C13g	<0.1	0.3	1.5	5.4	2.5	78.5	11.8	50.7	32.7	-	sil
12213	33-35	Not sampled											
12214	35-51	C14g	<0.1	<0.1	0.1	0.4	0.6	86.8	12.1	37.7	49.9	-	sil/si
12215	51-58	A1b	0.1a	0.1b	0.5	2.1	1.2	80.5	15.5	31.8	51.0	-	sil
12216	58-68	B2b	0.1a	0.2b	0.7	2.9	2.0	75.0	19.1	35.4	43.1	-	sil

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY c Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12209	5.2			0.69	0.067	10	1.2	3.7	1.43	21.3	1.40	1.44	5.5
12210	5.0			0.47	0.055	8	1.3	4.2	1.60	22.8	1.54	1.61	5.9
12211	4.9			0.32	0.039	8	1.1	3.6	1.55	23.6	1.50	1.55	4.9
12212	5.2			0.19	0.028		1.2	3.2	1.57	22.7	1.53	1.58	5.3
12213	Not sampled												
12214	5.6			0.32			1.2	6.1	1.46	26.4	1.42	1.47	5.2
12215	5.2			0.73			1.2	5.1	1.33	28.9	1.27	1.30	5.7
12216	5.2			0.28			1.3	4.5	1.50	24.7	1.35	1.40	7.8

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat.% on Sum Cations	5C1 Base Sat.% NH_4OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg
	milliequivalents per 100g soil								K-me/100g->		
12209	6.7	3.2	1.6	<0.1	0.2	4.8	51	75	5.0	9.8	2.0
12210	6.8	2.5	1.8	0.1	0.1	5.1	47	66	4.5	9.6	1.4
12211	6.2	2.2	1.6	0.1	0.1	4.6	46	64	4.0	8.6	1.4
12212	5.5	2.3	1.7	0.2	0.1	3.4	56	78	4.3	7.7	1.4
12213	Not sampled										
12214	6.8	2.8	1.2	0.2	0.1	4.4	49	63	4.3	8.7	2.3
12215	8.8	2.5	1.1	0.1	0.1	9.2	29	43	3.8	13.0	2.3
12216	7.6	2.2	1.0	0.1	0.1	6.8	33	45	3.4	10.2	2.2

a. Many Fe-Mn? bearing aggregates.
b. Common Fe-Mn? bearing aggregates.
c. See remarks in description.

Soil type: Collins silt loam
Soil Nos. : S59Tenn-24-3
Location: Fayette County, Tennessee, 3½ miles southeast of Somerville on Somerville-LaGrange paved road, 150 feet south of road and 50 feet west of Bennetts Creek, on Wyatt Wilkenson farm. Photo ADB-3F-154(1950)

Vegetation and Use: Cultivated continuous cotton.

Slope and Land Form: Nearly level (0-2 percent) bottom land.

Drainage and Permeability: Moderately well-drained, with medium runoff. Permeability is moderately rapid.

Parent Material: Young alluvium from loess and coastal plain materials.

Samples Collected by: Edwood Pedersen, George Phibbs, D. K. Springer, M. E. Springer, R. L. Flowers, R. K. Moore, W. C. Mangrum, Louis Dungan and E. C. Sease - October 14, 1959.

Profile Described by: E. C. Sease and D. K. Springer - October 14, 1959.

Horizon and Lincoln Lab. No.	Depth	
Ap 12209	0 to 6 inches	Brown (10YR5/3) silt loam; weak fine granular structure; very friable; few fine roots; few small concretions; clear smooth boundary. 4 to 8 inches thick.
C11 12210	6 to 11 inches	Yellowish brown (10YR5/4) to dark yellowish brown (10YR4/4) coarse silt loam; weak fine subangular blocky structure to massive; firm in place; friable; few fine roots; gradual wavy boundary. 4 to 6 inches thick.
C12g 12211	11 to 21 inches	Yellowish brown (10YR5/4) silt loam or silt; with many medium faint mottles of light brownish gray (10YR6/2), and pale brown (10YR6/3); weak fine granular to massive, very friable; moderate thin platy structure in upper part of this layer either stratifications or plow pan; clear wavy boundary. 7 to 11 inches thick.
C13g 12212	21 to 33 inches	Brown (7.5YR5/4) to yellowish brown (10YR5/4) silt loam or silt; many medium faint mottles of light brownish gray (10YR6/2); weak fine granular structure to massive; very friable; abrupt wavy boundary. 12 to 15 inches thick.
Cu 12213 (Not sampled)	33 to 35 inches	Reddish yellow (7.5YR6/8) loamy sand; single grain; abrupt wavy boundary. ½" to 2 inches thick. (Not sampled for laboratory but sampled for correlation).
C14g 12214	35 to 51 inches	Yellowish brown (10YR5/4) silt loam, with few fine faint mottles of light brownish gray (10YR6/2); weak fine granular structure to massive; very friable; clear wavy boundary. 15 to 18 inches thick.
A1b 12215	51 to 58 inches	Very dark grayish brown (10YR3/2) silt loam, with few fine faint mottles of gray (10YR5/1); moderate fine granular structure; very friable; many fine pores; clear smooth boundary. 6 to 8 inches thick.
B2b 12216	58 to 68 inches	Dark yellowish brown (10YR4/4) silt loam; weak fine subangular blocky structure; friable; common fine pores; clear wavy boundary. 8 to 12 inches thick.
B3mgb (Not sampled)	68 to 103 plus inches	Light gray to gray (10YR7/1-6/1) silt or silt loam; with common medium faint mottles of grayish brown (10YR5/2); common soft brown concretions.

Remarks: Colors given are for moist soil. Some horizons have lower oven-dry than field-moist bulk density. The field-moist clods were air-dried and then remoistened to 30-cm. tension before being oven-dried and the volume determined. Wetting to 30-cm. tension against a weak confining pressure may result in irreversible expansion. The result would be lower oven-dry bulk density values than would be obtained were the clods oven-dried directly.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Fayette County, Tennessee SOIL TYPE Collins silt loam

Lincoln LAB NOS. 12591 - 12601 SOIL NOS. S59Tenn-24-8

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1										
12591	0-8	Ap	<0.1	0.6	1.5	3.7	1.2	77.8	15.2	33.8	47.0	-	sil
12592	8-17	C11	<0.1	0.1	0.4	1.8	0.9	81.9	14.9	42.5	41.2	-	sil
12593	18-28	C12g	<0.1	<0.1	<0.1	0.5	1.5	83.7	14.3	43.4	42.2	-	sil
12594	28-30	C13g	<0.1	<0.1	<0.1	<0.1	<0.1	80.0	20.0	19.6	60.4	-	sil
12595	30-39	C14g	<0.1	<0.1	<0.1	0.2a	0.3a	87.4	12.1	48.4	39.4	-	sil/si
12596	39-50	C15g	<0.1	0.1b	0.1b	0.2a	0.5a	87.9	11.2	47.5	41.0	-	si
12597	50-56	C16g	0.1c	0.3c	0.4b	1.1b	0.7b	83.5	13.9	38.4	46.2	-	sil
12598	56-58	A11b	0.2c	0.8c	3.0c	2.3b	1.2b	72.6	21.9	26.7	48.2	-	sil
12599	58-62	A12b	0.2c	0.4c	0.6b	1.9a	1.1a	74.2	21.6	25.5	50.7	-	sil
12600	62-71	B2gb	0.1c	0.7c	0.9b	2.8a	1.6a	78.4	15.5	34.8	46.6	-	sil
12601	71-83+	B3mgb	0.1d	0.6d	0.8e	3.0f	3.0f	80.3	12.2	40.0	45.0	-	sil/si

LABORATORY NUMBER	8C1a pH H_2O 1:1			6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	4B4 Field State Water %	4A1a Field State g/cc	4B3 30-Cm. Water %	4A1c 30-Cm. g/cc	4A1h O.D. g/cc	4B2 15-Bar Water %
				ORGANIC MATTER					BULK DENSITY				
12591	5.3			0.55	0.066	8	1.6	17.0	1.51	23.1	1.49	1.53	7.2
12592	4.9			0.20	0.030		1.4	7.4	1.42	28.7	1.39	1.41	6.2
12593	5.0			0.21	0.031		1.5	13.2	1.45	28.0	1.42	1.44	6.2
12594	4.9			0.48			1.9	21.3	1.36	30.0	1.34	1.40	9.2
12595	5.3			0.29			1.3	17.1	1.46	26.1	1.43	1.44	5.1
12596	5.5			0.40			1.2	17.6	1.41	28.0	1.38	1.40	5.5
12597	5.4			0.81			1.4	17.9	1.41	27.1	1.40	1.42	6.8
12598	5.0			2.06			1.7	25.2	1.19			1.23	11.8
12599	4.8			0.35			1.7	18.6	1.30	29.6	1.28	1.34	9.5
12600	4.8			0.14			1.6	15.8	1.47	25.3	1.43	1.46	6.8
12601	4.7			0.07			1.4	15.5	1.58	22.4	1.56	1.57	5.6

LABORATORY NUMBER	5A1a CATION EXCHANGE CAPACITY NH_4OAc	6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat. % on Sum Cations	5C1 Base Sat. % NH_4OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg
		EXTRACTABLE CATIONS 5B1a									
		milliequivalents per 100g soil							← me/100g →		
12591	8.5	4.7	1.9	<0.1	0.2	4.9	58	80	6.8	11.7	2.5
12592	7.0	2.4	2.2	0.1	0.1	5.3	48	68	4.8	10.1	1.1
12593	7.2	2.4	2.5	0.1	0.1	4.9	51	71	5.1	10.0	1.0
12594	11.5	3.1	3.6	0.2	0.2	8.3	46	62	7.1	15.4	0.9
12595	6.9	2.2	2.0	0.1	0.1	4.6	49	64	4.4	9.0	1.1
12596	6.7	2.5	1.6	0.1	0.1	5.1	46	64	4.3	9.4	1.6
12597	9.6	3.5	1.4	0.1	0.1	8.5	38	53	5.1	13.6	2.5
12598	15.4	3.1	1.4	0.2	0.1	22.1	18	31	4.8	26.9	2.2
12599	9.0	1.9	1.2	0.1	0.2	10.7	24	38	3.4	14.1	1.6
12600	6.9	1.4	0.8	0.1	0.1	7.5	24	35	2.4	9.9	
12601	5.7	0.7	0.8	0.1	0.1	7.8	18	30	1.7	9.5	

a. Few Fe-Mn? concr.
b. Common Fe-Mn? concr.
c. Many Fe-Mn? concr.
d. Many Fe-Mn? bearing aggregates.
e. Common Fe-Mn? bearing aggregates.
f. Few Fe-Mn? bearing aggregates.
g. See remarks in description.

Soil type: Collins silt loam
Soil No.: [illegible]-24-8
Location: Fayette County, Tennessee, 1 mile southeast of Somerville on Hickory Valley Road, 200 yards east of road and 150 yards south of creek on John Haverocamp farm. ADB 3P-150(1950)

Vegetation and Use: Cotton - cultivated land.

Slope and Land Form: Nearly level (0-1 percent) bottom land.

Drainage and Permeability: Moderately well drained; slow runoff and moderate permeability.

Parent Material: Alluvium washed from loess and coastal plain materials.

Samples Collected by: R. L. Flowers, W. C. Mangrum, R. K. Moore, Louis Dungan and E. C. Sease - November 9, 1959.

Profile Described by: E. C. Sease - November 9, 1959.

Horizon and Lincoln Lab. No.	Depth	
Ap 12591	0 to 8 inches	Dark brown (7.5YR4/4) to (10YR4/3) silt loam; weak fine granular structure; very friable; common small roots; clear smooth boundary. 4 to 8 inches thick.
C11 12592	8 to 17 inches	Dark brown (7.5YR4/4) silt loam with mottles or stratifications of very pale brown (10YR7/3), pale brown (10YR6/3) and light brownish gray (10YR6/2); moderate very fine platy structure or stratifications; very friable; few fine roots; common fine pores or voids; few thin lenses of loamy sand; this layer is yellowish brown (10YR5/4) when crushed; abrupt smooth boundary. 8 to 10 inches thick.
C2 (Not sampled)	17 to 18 inches	Reddish yellow (7.5YR6/6) sand; single grain; loose; abrupt smooth boundary. 1 to 3 inches thick.
C12g 12593	18 to 28 inches	Brown (10YR5/3) to yellowish brown (10YR5/4) silt loam, with many fine faint mottles of dark brown (10YR4/3), grayish brown (10YR5/2), and light brownish gray (10YR6/2); moderate very fine platy structure or stratifications; very friable; few small roots; few small pores; clear smooth boundary. 10 to 12 inches thick.
C13g 12594	28 to 30 inches	Dark brown to dark yellowish brown (10YR4/3-3/4) silt loam; many fine faint mottles of dark gray (10YR4/1), grayish brown (10YR5/2), light brownish gray (10YR6/2) and strong brown (7.5YR5/6); massive, friable, abrupt smooth boundary. 2 to 4 inches thick.
C14g 12595	30 to 39 inches	Brown to dark brown (10YR5/3-4/3) silt loam; many fine faint mottles of grayish brown (10YR5/2) light brownish gray (10YR6/2) and yellowish brown (10YR5/4);massive; crushes to weak fine granular structure; very friable; few small holes and pores; clear smooth boundary. 8 to 12 inches thick.
C15g 12596	39 to 50 inches	Dark grayish brown (10YR4/2) silt loam with many fine faint mottles of grayish brown (10YR5/2), light brownish gray (10YR6/2) and brown (10YR4/3);massive; crushes to weak fine granular structure; very friable; few thin stratified layers or weak fine platy structure in this horizon; few small pores; diffuse smooth boundary. 10 to 16 inches thick.
C16g 12597	50 to 56 inches	Dark brown (10YR4/3) silt loam with many fine faint mottles of grayish brown (10YR5/2) and dark gray (10YR4/1); massive in places; crushed weak fine granular structure; very friable; few fine pores; few small old worm channels; abrupt smooth boundary. 6 to 8 inches thick.
A11b 12598	56 to 58 inches	Very dark grayish brown (10YR3/2) to very dark brown (10YR2/2) silt loam; weak fine granular structure; very friable; common small pores; few small round black concretions; (apparently some wood had been burned as there were few pieces of charcoal.) Clear smooth boundary. 2 to 3 inches thick.
A12b 12599	58 to 62 inches	Dark brown (10YR4/3) to dark yellowish brown (10YR3/4) silt loam; massive to weak fine granular structure; very friable; many small pores or voids (has appearance of sponge); few fine brown hard concretions; clear smooth boundary. 4 to 6 inches.
B2gb 12600	62 to 71 inches	Brown (10YR5/3) silt loam with many fine faint mottles of light brownish gray (10YR6/2) and light gray (10YR7/1); vesicular; when crushed weak fine granular structure; very friable; few patchy clay films on wall of small holes; many small pores or voids; few small rounded hard concretions; clear smooth boundary. 8 to 14 inches thick.
B3ngb 12601	71 to 83 inches plus	Light brownish gray (10YR6/2) silt loam; with many medium faint mottles of light gray (10YR7/2) pale brown (10YR6/3) and brown (10YR5/3); weak fine angular blocky structure to vesicular; friable; brittle; few small pores; many small brown soft and hard concretions or segregations (1 to 6 mm in diameter).

Remarks: Colors given are for moist soil. Some horizons have lower oven-dry than field-moist bulk density. The field-moist clods were air-dried and then remoistened to 30-cm. tension before being oven-dried and the volume determined. Wetting to 30-cm. tension against a weak confining pressure may result in irreversible expansion. The result would be lower oven-dry bulk density values than would be obtained were the clods oven-dried directly.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Fayette County, Tennessee SOIL TYPE Collins Silt Loam

Lincoln LAB NOS. 12602 - 12609 SOIL NOS. S59Tenn-24-9

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	3A1 INTERNATIONAL III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12602	0-6	Ap	<0.1	<0.1	<0.1	0.2	1.3	88.4	10.1	76.4	13.4	-	si
12603	6-18	C1	<0.1	<0.1	<0.1	<0.1	0.8	90.0	9.2	47.0	43.8	-	si
12604	18-24	A1b	0.2a	0.7b	0.8c	1.2c	0.9c	83.6	12.6	39.2	45.8	-	sil
12605	24-37	B2gb	0.6a	1.5b	1.9c	2.7c	1.1c	80.9	11.3	38.4	44.7	-	si
12606	37-49	B3gb	0.5a	1.4b	1.6c	2.2c	0.9c	80.4	13.0	39.1	43.1	-	sil
12607	49-61	B3mgb1	0.6a	1.3a	1.7b	2.4b	1.1b	81.0	11.9	39.0	44.1	-	si/sil
12608	61-73	B3mgb2	1.1a	2.7b	3.1c	5.3c	1.8c	74.8	11.2	42.7	36.1	-	sil
12609	73-102	B3mb3	0.3	4.0	12.8	21.5	3.1	48.5	9.8	36.7	21.7	-	l

LABORATORY NUMBER	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY d Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12602	5.1			0.73	0.070	10	1.1	19.5	1.53	24.5	1.50	1.52	4.6
12603	5.7			0.35	0.038	9	1.1	20.6	1.48	25.8	1.45	1.46	4.2
12604	5.3			0.60	0.061	10	1.3	23.2	1.33	30.6	1.32	1.35	5.5
12605	5.2			0.15			1.6	21.6	1.46	26.0	1.44	1.45	5.1
12606	5.3			0.07			1.4	19.9	1.55	23.1	1.54	1.55	5.2
12607	5.7			0.07			1.6	17.0	1.62	20.6	1.60	1.58	5.3
12608	5.7			0.07			1.6	15.1	1.67	19.1	1.65	1.64	5.3
12609	5.9			0.07			1.0	9.7	1.81	14.2	1.78	1.79	3.8

LABORATORY NUMBER	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat. % on Sum Cations	5C1 Base Sat. % NH_4OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg
	milliequivalents per 100g soil								← me/100g →		
12602	6.2	2.5	1.1	0.1	0.1	5.6	40	61	3.8	9.4	2.3
12603	5.6	2.7	1.1	0.1	0.1	5.3	43	71	4.0	9.3	2.4
12604	7.0	2.0	0.7	0.1	0.1	7.5	28	41	2.9	10.4	
12605	5.5	1.6	0.7	0.1	0.1	6.1	29	45	2.5	8.6	
12606	5.4	0.9	0.8	0.2	0.1	6.8	23	37	2.0	8.8	
12607	5.5	0.8	0.8	0.4	0.1	6.5	24	38	2.1	8.6	
12608	5.4	0.8	1.0	0.4	0.1	6.3	27	42	2.3	8.6	
12609	4.1	1.0	1.1	0.3	0.1	3.1	45	61	2.5	5.6	0.9

a. Many Fe-Mn? concr.
b. Common Fe-Mn? concr.
c. Few Fe-Mn? concr.
d. See remarks in description.

Soil type: Collins silt loam
Soil No. : 899Tenn-24-9
Location: Fayette County, Tennessee, 2 miles east of Somerville on U. S. Highway 64, 1/4 mile south of highway and 200 yards east of Bennetts Creek in field on the Wetzler farm. Photo ADS-3F-24(1950)

Vegetation and Use: Corn and crab grass - cultivated.

Slope and Land Form: Nearly level bottom land.

Drainage and Permeability: Moderately well drained, with medium runoff. Permeability moderate.

Parent Material: Alluvium washed from loessial uplands.

Samples Collected by: R. L. Flowers, W. C. Mangrum, R. K. Moore, Louis Dungan, and E. C. Sease - November 10, 1959.

Profile Described by: E. C. Sease - November 10, 1959.

Davison and Lincoln Lab.No.	Depth	
Ap 12602	0 to 6 inches	Brown (10YR5/3-4/3) silt loam weak fine granular structure; very friable; common fine roots; clear smooth boundary. 5 to 8 inches thick.
C1 12603	6 to 18 inches	Brown (10YR4/3) silt loam, with thin layers or stratifications of brown (10YR5/3) silt; massive; when crushed breaks into weak fine granular structure; very friable; common fine roots; common fine pores; clear smooth boundary. 10 to 12 inches thick.
A1b 12604	18 to 24 inches	Brown (10YR4/3) silt loam with common medium faint mottles of pale brown (10YR6/3), gray (10YR5/1) and grayish brown (10YR5/2); weak fine granular structure to massive; very friable; many small pores; few dark brown soft concretions or segregations; clear smooth boundary. 5 to 8 inches thick.
B2gb 12605	24 to 37 inches	Brown (10YR5/3) silt loam with many medium faint mottles of grayish brown (10YR5/2), light brownish gray (10YR 6/2), gray (10YR5/1) and yellowish brown (10YR5/6) weak medium angular and subangular blocky structure to massive; very friable; few patchy clay films; many small pores, holes and voids; common soft brown and black concretions or segregations; clear smooth boundary. 12 to 14 inches thick.
B3gb 12606	37 to 49 inches	Grayish brown (10YR5/2) silt loam with many medium faint mottles of gray (10YR6/1-5/1), yellowish brown (10YR5/6) and brown (10YR5/3); weak fine and medium subangular blocky structure to massive; friable; few patchy clay or silt films along holes, common pores and small holes or voids; few small soft dark brown concretions; clear wavy boundary. 10 to 13 inches thick.
B3ngb1 12607	49 to 61 inches	Mottled gray (10YR6/1), grayish brown (10YR5/2) light brownish gray (10YR6/2) and yellowish brown (10YR5/6) silt loam; mottles are many medium faint; weak medium subangular blocky structure to massive; friable; brittle; common pores or voids; many small dark brown soft concretions and strong brown (7.5YR5/6) segregations. thin gray (10YR5/1) silt streaks on polygon faces; these gray streaks begin in this layer and extend to 102" and are from 1/4" to 1" wide. Diffuse smooth boundary. 24 to 32 inches thick.
B3ngb2 12608	61 to 73 inches	Same as layer above.
B3gb3 12609	73 to 102 inches	Grayish brown (10YR5/2) loam with many medium faint mottles of gray (10YR6/1), dark yellowish brown (10YR3/4) and yellowish brown (10YR5/4) massive; friable; brittle; few small pores, many soft dark brown concretions; seams of gray silt go through this layer; gradual smooth boundary.
Da	102 to 112 inches plus	Dark grayish brown (10YR4/2) loamy sand on sand; single grain; water table at 102 inches. (Not sampled).

Remarks: Colors given are for moist soil. Some horizons have lower oven-dry than field-moist bulk density. The field-moist clods were air-dried and then rewetted to 30-cm. tension before being oven-dried and the volume determined. Wetting to 30-cm. tension against a weak confining pressure may result in irreversible expansion. The result would be lower oven-dry bulk density values than would be obtained were the clods oven-dried directly.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Fayette County, Tennessee SOIL TYPE Collins Silt Loam

Lincoln LAB NOS. 12610 - 12614 SOIL NOS. S59Tenn-24-10

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12610	0-8	Ap	<0.1	<0.1	0.1	<0.1	0.3	86.4	13.2	27.6	59.0	Tr.	sil
12611	8-20	C11	<0.1	<0.1	<0.1	<0.1	0.2b	84.0	15.8	24.9	59.3	-	sil
12612	20-30	C12g	<0.1	<0.1	0.1	1.1	1.4	84.1	13.3	46.3	39.9	-	sil
12613	30-42	C13g	<0.1	<0.1	0.1a	1.1a	1.5a	87.4	9.9	50.8	38.8	-	si
12614	42-54	C14g	<0.1	0.2b	0.8a	4.3a	2.4a	80.7	11.6	50.9	34.3	-	si/sil

LABORATORY NUMBER	pH 8C1a H_2O 1:1	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6G1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12610	6.3	1.02	0.099	10	1.3	21.9	1.42	26.7	1.41	1.45	6.4
12611	5.8	0.54	0.062	9	1.4	23.7	1.36	28.5	1.35	1.40	6.6
12612	5.3	0.55	0.059	9	1.2	25.7	1.34	29.9	1.32	1.37	5.9
12613	5.0	0.32			0.9	25.9	1.42	28.4	1.41	1.44	4.1
12614	4.8	0.25			1.2	22.9	1.48	26.6	1.44	1.48	5.2

LABORATORY NUMBER	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat.% in Sum Cations	5C1 Base Sat.% NH_4OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg
		milliequivalents per 100g soil							<— me/100g —>		
12610	9.8	7.8	1.4	0.1	0.2	4.1	70	97	9.5	13.6	5.6
12611	9.4	5.8	1.9	0.1	0.2	5.8	58	85	8.0	13.8	3.0
12612	8.0	3.2	1.6	0.1	0.1	6.3	44	62	5.0	11.3	2.0
12613	5.9	1.5	1.5	0.1	0.1	6.1	34	54	3.2	9.3	1.0
12614	6.5	0.8	1.2	0.1	0.1	7.3	23	34	2.2	9.5	

a. Few Fe-Mn? concr.
b. Many Fe-Mn? concr.

Soil type: Collins silt loam Described by E. C. Sease
Soil No. S59Tenn-24-10
Location: Fayette County, Tennessee 7 miles northwest of Somerville along the Stanton Road, 50 feet east of road and 100 feet north of creek on Alexander Harvey farm. Photo AIB-2F-44(1950)

Vegetation and Use: Corn stubble - cultivated.

Slope and Land Form: Nearly level young alluvial soil.

Drainage and Permeability: Moderately well drained; slow runoff, moderate permeability.

Parent Material: Alluvium washed from loessial uplands.

Samples Collected by: R. L. Flowers, W. C. Mangrum, Louis Dungan, R. K. Moore and E. C. Sease - November 10, 1959

Horizon and Lincoln Lab. No.	Depth	
Ap 12610	0 to 8 inches	Dark brown (10YR4/3) silt loam; weak fine granular structure; very friable; common fine roots; clear smooth boundary. 6 to 9 inches thick.
C11 12611	8 to 20 inches	Dark brown (10YR4/3) silt loam; weak very fine platy structure or stratifications; stratified layers are light brownish gray (10YR6/2) and dark yellowish brown (10YR4/4); few medium faint mottles of light brownish gray (10YR6/2), grayish brown (10YR5/2) and dark yellowish brown (10YR4/4) very friable; common small pores; gradual smooth boundary.
C12g 12612	20 to 30 inches	Dark brown (10YR4/3) to dark grayish brown (10YR4/2) silt loam, with many medium faint mottles of gray (10YR6/1) light brownish gray (10YR6/2) and dark yellowish brown (10YR3/4); weak fine granular structure to massive; very friable; common fine pores or holes; clear smooth boundary.
C13g 12613	30 to 42 inches	Mottled dark brown (10YR4/3) gray (10YR6/1), light brownish gray (10YR6/2) and yellowish brown(10YR5/4) silt loam; mottles are many medium faint; massive; very friable; common small pores and holes; clear smooth boundary.
C14g 12614	42 to 54 inches	Dark grayish brown (10YR4/2) silt loam, with common medium faint mottles of light brownish gray (10YR6/2), gray (10YR6/1) and yellowish brown (10YR5/4); gray was along small holes and old root channels; massive breaking into weak fine granular structure; very friable; common small pores or holes.
C15g	54 to 86 inches	Water came into hole at 54". Too much water to sample below 54". Bored from 54" to 96". From 54" to 86" about same as 42"-54" except much more concretionary material and more gray; probably B_{3m} of buried Calhoun.
D	86 to 96 inches plus	Dark grayish brown (10YR4/2) loam with common coarse faint mottles of gray (10YR6/1) and light brownish gray (10YR6/2).

Remarks: Colors given are for moist soil.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Fayette County, Tennessee SOIL TYPE Collins fine sandy loam

Lincoln LAB NOS. 12615 - 12621 SOIL NOS. S59Tenn-24-11

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1 COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
12615	0-8	Ap	<0.1	1.3	4.3	13.1	2.6	69.8	8.9	42.4	35.6	-	sil
12616	8-20	C11	0.3	3.7	9.4	12.6	3.0	62.5	8.5	43.8	25.8	-	sil
12617	22-28	A1b	<0.1	0.5	1.4	2.4	2.0	81.5	12.2	39.8	44.5	-	sil/si
12618	28-39	C11b	<0.1	0.3	0.7	1.1	1.1	81.5	15.3	39.5	43.6	-	sil
12619	39-49	C12gb	<0.1	0.9	2.6	5.3	2.3	76.7	12.2	44.2	37.2	-	sil
12620	49-58	C13b	0.1	8.1	19.9	16.6	2.8	45.0	7.5	31.6	21.5	-	l/fsl
12621	58-76+	Du	0.1	6.6	20.6	29.5	4.0	33.7	5.5	31.8	15.7	-	sl/fsl

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12615	4.7			0.52	0.052	10	1.0	15.1	1.69	19.2	1.67	1.70	4.2
12616	5.1			0.19	0.024		1.0	11.6	1.59	17.8	1.58	1.60	3.1
12617	5.3			0.39	0.042	9	1.1	17.8	1.43	25.5	1.41	1.44	5.4
12618	5.2			0.21			1.4	17.8	1.38	26.4	1.36	1.39	6.0
12619	5.3			0.18			1.2	18.0	1.46	24.4	1.44	1.47	5.2
12620	5.4			0.14			0.7	15.7	1.54	19.9	1.54	1.56	3.3
12621	5.4			0.10			0.6						2.8

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat.% in Sum Cations	5C1 Base Sat.% NH_4OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg
		milliequivalents per 100g soil							<- me/100g ->		
12615	5.3	1.9	0.8	0.1	0.2	5.6	35	57	3.0	8.6	
12616	4.2	1.5	0.9	0.1	0.1	3.9	40	62	2.6	6.5	
12617	6.2	2.0	1.2	0.1	0.1	5.6	38	55	3.4	9.0	1.7
12618	6.8	2.0	1.2	0.1	0.1	6.6	34	50	3.4	10.0	1.7
12619	5.5	1.8	1.0	0.1	0.1	5.3	36	54	3.0	8.3	1.8
12620	3.9	1.2	0.8	<0.1	0.1	3.6	37	54	2.1	5.7	
12621	2.9	1.0	0.7	<0.1	0.1	2.6	41	62	1.8	4.4	

Soil type: Collins fine sandy loam
Soil Nos. : 859Tenn-24-11
Location: Fayette County, Tennessee, 17 miles south of Somerville, 2 miles south of Bateman's bridge along the gravel road that turns left off the Bateman bridge road at the Lewis farm. On Lewis farm 100 yards south of gravel road and 100 yards west of creek. Photo ADB-2F-4(1950)

Vegetation and Use: Cotton - cultivated.

Slope and Land Form: Nearly level (0-1 percent) bottom land.

Drainage and Permeability: Moderately well drained; slow runoff and moderate permeability.

Parent Material: Alluvium washed from loess and coastal plain material.

Samples Collected by: R. L. Flowers, W. C. Mangrum, R. K.Moore, Louis Dungan, and E. C. Sease - November 12, 1959.

Profile Described by: E. C. Sease - November 12, 1959

Horizon and Lincoln Lab. No.	Depth	
Ap 12615	0 to 8 inches	Brown (10YR4/3) to dark grayish brown (10YR4/2) loam or fine sandy loam; weak fine granular structure; very friable; few medium faint mottles (in the 6 to 8 inch layer) of grayish brown (10YR5/2) brown (10YR5/3) and yellowish brown (10YR5/4); this layer is compact and appears to be a plow pan; common small roots; clear smooth boundary.
C11 12616	8 to 20 inches	Brown (10YR4/3) to yellowish brown (10YR5/4) loam; few fine faint mottles of brown (10YR5/3); massive in place breaks into weak fine granular structure; very friable; common small holes; few small roots; occasional thin layers of sand less than 1/2 inch thick; in places very fine platy structure or stratifications; abrupt smooth boundary.
Cu (Not sampled)	20 to 22 inches	Light yellowish brown (10YR6/4) sand; single grain; loose; this is not a continuous layer; it varies in thickness from 0 to 3 inches. Abrupt smooth boundary.
A1b 12617	22 to 28 inches	Dark brown (10YR4/3 to 3/3) silt loam; common fine faint mottles of grayish brown (10YR5/2) and yellowish brown (10YR5/4); weak fine granular structure; very friable; common pores; common small holes; clear smooth boundary.
C11b 12618	28 to 39 inches	Dark brown (7.5YR4/4) silt loam; few fine faint mottles of grayish brown (10YR5/2) and dark yellowish brown (10YR4/4); weak fine granular structure; very friable; silt or clay films along old wormholes; common pores; many wormholes; gradual smooth boundary.
C12gb 12619	39 to 49 inches	Brown to dark brown (10YR4/3) silt loam; common fine faint mottles of grayish brown (10YR5/2), gray (10YR5/1) and dark yellowish brown (10YR3/4); weak medium granular; very friable; slightly brittle; few patchy clay films on old worm channels; common pores; common wormholes; common small pores or holes; gradual smooth boundary.
C13b 12620	49 to 58 inches	Brown to dark brown (10YR4/3) loam or fine sandy loam; common medium faint mottles of dark yellowish brown (10YR3/4); and grayish brown (10YR5/2); massive; very friable; few small holes and pores; clear smooth boundary.
Da 12621	58 to 76 inches plus	Brown (10YR4/3) sandy loam; massive; friable; water table at 76 inches

Remarks: Colors given are for moist soil.

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10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Cumberland silt loam SOIL Nos. S53Tenn-5-13 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53744-53746

Depth (in.)	Horizon	1B1b Total Sand (2–0.05)	Total Silt (0.05–0.002)	Total Clay (< 0.002)	Sand: Very coarse (2–1)	Sand: Coarse (1–0.5)	Sand: Medium (0.5–0.25)	Sand: Fine (0.25–0.1)	Sand: Very fine (0.1–0.05)	Silt: 0.05–0.02	Silt: Int. III (0.02–0.002)	3A1 Int. II (0.2–0.02)	(2–0.1)			Coarse fragments 2A2 > 2 Pct.	2 – 19 (Pct. of < 76mm)	19 – 76 (Pct. of < 76mm)
		Pct. of < 2 mm																
0-5	Ap	35.4	43.6	21.0	1.5	4.2	4.6	14.4	10.7	14.4	29.2	34.5	24.7			tr.		
5-14	B1	24.2	37.4	38.4	0.9	2.8	3.2	9.7	7.6	10.6	26.8	24.5	16.6			tr.		
14-56	B2	16.9	24.9	58.2	1.2	2.1	2.2	6.5	4.9	6.8	18.1	15.8	12.0			tr.		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-5	2.36																	5.8
5-14	0.44																	5.0
14-56	0.21																	4.9

Depth (in.)	Exchangeable bases Ca	Mg	6F2a Na	6G2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-5	2.4	0.6	tr.	0.2	2.9	6.7	9.6									30	
5-14	0.9	0.4	tr.	0.2	1.1	8.0	9.1									12	
14-56	0.3	0.6	tr.	0.1	1.0	10.8	11.8									8	

Depth (in.)

USDA SCS HYATTSVILLE, MD 1964

Soil Type: Cumberland silt loam
Soil No.: S53Tenn-5-13
Location: Blount County, Tennessee. 4-1/2 miles northwest of Friendsville.
Vegetation and land use: Unimproved pasture. Lespedeza and weeds.

Horizon and Beltsville Lab. No.	
Ap 53744	0 to 5 inches. Reddish brown (5YR 4/3) friable silt loam.
B1 53745	5 to 14 inches. Red (2.5YR 4/6) friable silty clay loam; weak fine blocky structure. Gradual gradation to;
B2 53746	14 to 56 inches. Red (2.5YR 4/6) to dark red (2.5YR 3/6) friable silty clay; plastic when wet; moderate medium blocky structure. Below 38 inches are occasional very small angular chert fragments and rounded pebbles. The underlying material is the residual products of a cherty dolomitic limestone.

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10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Cumberland silt loam SOIL Nos. S53Tenn-5-18 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53761-53763

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Size class and particle diameter (mm) 3A1 Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: (0.05–0.02)	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)			Coarse fragments: 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct. of < 76mm	
0-7	Ap	33.8	38.8	27.4	1.8	4.1	6.8	15.9	5.2	12.1	26.7	24.6	28.6			2		
7-14	B1	25.9	35.0	39.1	1.4	3.0	4.9	12.3	4.3	9.4	25.6	19.3	21.6			tr.		
14-56	B2	26.0	22.3	51.7	0.9	2.9	5.2	13.0	4.0	7.6	14.7	17.4	22.0			tr.		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-7	0.94																	6.4
7-14	0.24																	6.2
14-56	0.06																	5.0

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC: 5A3a Sum Cations									Base saturation: 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-7	2.2	0.8	tr.	0.1	3.1	4.6	7.7									40	
7-14	1.6	0.8	tr.	tr.	2.4	4.9	7.3									33	
14-56	0.6	0.3	tr.	tr.	0.9	8.7	9.6									9	

Depth (in.)					

USDA SCS-HYATTSVILLE MD 1964

Soil Type: Cumberland silt loam
Soil No.: S53Tenn-5-18
Location: Blount County, Tennessee. 2 miles south of Wildwood.
Vegetation and land use: Tobacco - crimson clover and oats rotation.

Horizon and Beltsville Lab. No.	
Ap 53761	0 to 7 inches. Reddish brown (5YR 4/4) friable silt loam; moderate medium granular structure.
B1 53762	7 to 14 inches. Dark red (2.5YR 3/6) friable silty clay loam with a few streaks of reddish brown along old root channels; moderately developed medium blocky structure. Gradual gradation to;
B2 53763	14 to 56 inches. Dark red (10R 3/6) moderately friable to firm silty clay loam; moderately developed medium blocky structure.

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U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Cumberland silt loam, eroded undulating phase — SOIL Nos. S55Tenn-16-27 — LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland — LAB. Nos. 551982 - 551991

Depth (in.)	Horizon	1B1b Total Sand (2–0.05)	Total Silt (0.05–0.002)	Total Clay (< 0.002)	Sand Very coarse (2–1)	Sand Coarse (1–0.5)	Sand Medium (0.5–0.25)	Sand Fine (0.25–0.1)	Sand Very fine (0.1–0.05)	Silt 0.05–0.02	Silt Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1 2A2 > 2 Pct.	2 – 19	19 – 76
		Size class and particle diameter (mm) 3A1 — Pct. of < 2 mm														Pct. of < 76mm		
0-8	Ap		58.7	22.8	0.8	2.0	3.2	6.9	5.6		33.9	34.1				-		
8-16	A3		55.1	3.16	0.8	1.6	2.0	4.5	4.4		39.4	22.6				-		
16-23	B1		50.8	34.4	1.0	1.9	2.1	4.8	5.0		35.2	23.5				-		
23-27	B21		44.0	41.8	0.6	1.2	2.2	5.2	5.0		31.2	21.0				-		
27-38	B22		41.6	44.1	0.6	1.0	2.2	5.2	5.3		28.4	21.6				-		
38-45	B23		39.5	46.3	0.4	1.0	2.2	5.2	5.4		28.4	19.6				tr.		
45-52	B24		35.7	49.5	0.3	0.9	2.3	5.5	5.8		25.3	19.5				tr.		
52-61	B25		32.4	52.9	0.3	1.0	2.2	5.4	5.8		23.3	18.2				-		
61-75	B31		26.7	59.3	0.4	0.8	2.0	5.1	5.7		19.4	16.1				-		
75-87	B32		27.3	58.6	0.2	0.8	2.1	5.2	5.8		18.9	17.3				-		

Depth (in.)	6A1a Organic carbon Pct	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density 4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content 4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in		pH 8C1c (1:1) KCl	8C1a (1:1) H_2O
0-8	1.17	0.118	10			2.4										6.6
8-16	0.74	0.053	14			3.0										6.3
16-23	0.28	0.038				3.3										5.0
23-27	0.27	0.040				4.1										4.8
27-38	0.25	0.040				4.4										4.8
38-45	0.26	0.041				4.7										4.8
45-52	0.26	0.041				5.1										4.8
52-61	0.26	0.041				5.5										4.8
61-75	0.26	0.046				6.4										4.7
75-87	0.25	0.037				6.3										4.8

Depth (in.)	Extractable bases 5B1a 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC 5A3a Sum cations		6G1d Ext. Al			Ratios to clay CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																	
0-8	7.7	0.5	0.1	0.2		4.9	13.4										63	
8-16	5.8	0.2	0.1	0.2		5.1	11.4										55	
16-23	2.7	0.7	0.1	0.2		8.2	11.9										31	
23-27	1.6	0.8	0.1	0.2		9.1	11.8										23	
27-38	1.0	0.9	tr.	0.2		9.1	11.2										19	
38-45	1.3	0.9	tr.	0.3		8.8	11.3										22	
45-52	2.1	0.9	tr.	0.3		8.2	11.5										29	
52-61	3.0	1.4	0.1	0.3		8.5	13.3										36	
61-75	3.0	1.3	0.1	0.3		9.3	14.0										34	
75-87	2.9	0.5	0.1	0.3		8.9	12.7										30	

Depth (in.)	Clay Fraction Analysis 7A1b-d Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite	
	7A2 X-ray						DTA 7A3		
0-8									
8-16			xx	x			xx		
16-23									
23-27									
27-38									
38-45									
45-52									
52-61									
61-75									
75-87			xx	x			xxx		

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

9994-905-RYATTSVILLE, MD. 1966

Soil Type: Cumberland silt loam, eroded undulating phase.
Soil No.: S55Tenn-16-27
Location: Coffee County, Tennessee. 12 miles southeast of Manchester on U. S. Highway 41 to gravel road at Howard McGregor farm. 0.1 mile south on gravel road to fence corner on east side of road. 200 yards east of road and 50 feet west by north of large hackberry tree at eastern boundary of field which is 60 feet south of northeast corner of field. Aerial photo 7G-58.

Horizon and Beltsville Lab. No.	
Ap 551982	0 to 8 inches. Dark reddish brown (5YR 3/3) friable heavy silt loam; contains enough sand to give the soil a gritty feel; moderate crumb structure; many fine roots less than 1.0 mm in diameter; a few small pinholes and wormholes ranging up to 2.0 mm in diameter.
A3 551983	8 to 16 inches. Dark reddish brown (2.5YR 3/4) friable light silty clay loam; moderate fine granular structure; contains a few soft black concretion less than 1.0 mm in diameter; common fine roots less than 1.0 mm in diameter.
B1 551984	16 to 23 inches. Dark reddish brown (2.5YR 3/4) friable heavy silty clay loam; slightly redder than horizon above; weak fine subangular and angular blocky structure; few to common clay skins on vertical and horizontal faces; common black concretions, segregations and stains ranging up to 1.0 in diameter; a few small roots present.
B21 551985	23 to 27 inches. Dark red to dusky red (10R 3/6 - 3/4) friable to firm silty clay; moderate fine to medium angular blocky structure; continuous prominent clay skins on vertical and horizontal faces; common black concretions and segregations 1.0 mm in diameter; occasional quartzite pebble 2 to 5 mm in diameter; contains fine sand to give the dry soil a gritty feel.
B22 551986	27 to 38 inches. Dusky red (10R 3/4) firm clay; strong coarse angular structure which breaks to strong fine and medium angular blocky structure; continuous prominent clay skins; interior of peds are dark red (2.5YR 3/6); occasional quartzite pebble ranging from 1.0 to 5.0 mm in diameter.
B23 551987	38 to 45 inches. Dusky red (10R 3/4) firm clay; strong coarse angular blocky structure which breaks to strong fine angular blocky structure; continuous prominent clay skins; a few black concretions and segregations ranging from 0.5 to 2.0 mm in diameter; occasional quartzite pebble and chert gravel ranging from 1.0 to 5.0 mm in diameter; contains a few pinholes and wormholes and an occasional very fine root.
B24 551988	45 to 52 inches. Dusky red (10R 3/4) friable to firm clay; strong coarse angular blocky structure which breaks to strong fine angular blocky structure; continuous prominent clay skins; an occasional quartzite pebble and chert gravel ranging from 2.0 to 5.0 mm in diameter; a few fine pinholes and an occasional wormhole 2.0 to 3.0 in diameter.
B25 551989	52 to 61 inches. Dusky red (10R 3/4) friable to firm clay; strong coarse angular blocky structure which breaks to strong fine angular blocky structure; continuous prominent clay skins; contains an occasional quartzite pebble ranging from 2.0 to 5.0 mm in diameter; a few pinholes and an occasional wormhole 2.0 to 3.0 mm in diameter.
B31 551990	61 to 75 inches. Dusky red (10R 3/4) friable to firm clay; contains enough sand to be slightly more friable than horizon above; strong coarse angular blocky structure which breaks to strong fine angular blocky structure; prominent clay skins which are somewhat thinner than horizon above; contains a few quartzite pebbles 1.0 to 2.0 mm in diameter.
B32 551991	75 to 87 inches. Dusky red (10R 3/4) friable clay; contains a small amount of medium and coarse sand to give the dry soil a gritty feel; strong coarse angular blocky structure which breaks to strong fine angular blocky structure; prominent clay skins; contains a few quartzite pebbles and an occasional chert gravel 2.0 to 5.0 mm in diameter.

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U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Cumberland silt loam, eroded undulating phase SOIL Nos. 55STenn-16-28 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551992 - 552000

Depth (in.)	Horizon	1B1b Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (< 0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: Int. III (0.02-0.002)	Int. II (0.2-0.02)	(2-0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 ≥ 2 Pct.	2 - 19	19 - 76
		Size class and particle diameter (mm) 3A1 — Pct. of < 2 mm														Pct. of < 76mm		
0-7	Ap		52.6	17.8	0.3	1.7	5.3	13.5	8.8		35.6	33.1						
7-13	A3		54.0	27.4	0.1	0.8	3.1	8.4	6.2		41.5	23.3						
13-21	B1		51.2	30.6	0.3	1.0	3.0	8.0	5.9		37.7	23.8						
21-29	B21		43.1	37.6	0.3	0.9	3.0	8.6	6.5		31.6	22.9						
29-40	B22		38.7	41.5	0.4	0.8	3.2	8.8	6.6		25.9	24.4						
40-52	B23		36.2	42.2	0.1	0.8	3.4	9.9	7.4		26.0	23.4						
52-61	B24		32.8	44.0	0.3	0.8	3.6	10.2	8.3		23.5	23.3						
61-73	B31		31.7	44.3	0.2	0.8	3.7	10.8	8.5		21.6	24.8						
73-85+	B32		28.8	44.2	0.2	0.9	4.1	11.9	9.9		20.2	25.3						

Depth (in.)	6A1a Organic carbon	Nitrogen	C/N		Carbonate as $CaCO_3$	Ext. iron as Fe_2O_3	Bulk density:	4A1e ⅓ bar	4A1h Oven dry	4D1 COLE	Water content:	4B1c ⅓ bar	4B2 15 bar		4C1 WRD	pH:	8C1c (1:1) KCl	8C1a (1:1) H_2O
	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		in/in			
0-7	1.20	0.080	15			1.7												5.8
7-13	0.58	0.056	10			2.4												5.5
13-21	0.36	0.041				2.7												5.2
21-29	0.34	0.038				3.5												5.0
29-40	0.27	0.034				3.9												4.9
40-52	0.24	0.033				4.1												4.7
52-61	0.24	0.032				4.5												4.7
61-73	0.25	0.031				4.6												4.6
73-85+	0.25	0.031				4.7												4.6

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations	6G1d Ext. Al		Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations	5C1 NH_4OAc
	meq/100 g														Pct.	Pct.
0-7	3.6	0.8	0.1	0.3		6.6	11.4								42	
7-13	3.4	0.4	tr.	0.2		5.9	9.9								40	
13-21	3.4	1.2	tr.	0.2		6.4	11.2								43	
21-29	1.6	1.5	tr.	0.2		7.0	10.3								32	
29-40	0.4	1.6	0.1	0.2		8.2	10.5								22	
40-52	0.3	0.2	0.1	0.2		9.3	10.3								8	
52-61	0.1	1.8	0.1	0.2		10.1	12.3								18	
61-73	0.1	0.8	0.1	0.2		9.9	11.1								11	
73-85+	0.1	0.8	0.1	0.2		9.9	11.1								11	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray						DTA 7A3	
0-7								
7-13			xxx	x			x	
13-21								
21-29								
29-40			xx	x			xx	
40-52								
52-61								
61-73								
73-85+			xx	x			xxx	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

USDA-SCS-BYATTSVILLE, MD. 1966

Soil Type: Cumberland silt loam, eroded undulating phase.
Soil No.: S55Tenn-16-28
Location: Coffee County, Tennessee. 1.7 miles east of Hillsboro on Hillsboro-Rodgers Quarry Road. 125 feet south of road at a fence corner on the north side of road, which is 100 yards east of the S. J. Meyers house, and 25 feet east of corn field. Aerial photo 70-54.
Vegetation and land use: Lespedeza and crab grass in small grain stubble.
Slope and land form: 3 percent.
Physiographic position: Broad undulating high terrace ridge.

Horizon and Beltsville Lab. No.	
Ap 551992	0 to 7 inches. Dark brown (7.5YR 3/2) friable silt loam; weak fine crumb structure; contains many fine roots and an occasional fine reddish brown and dark reddish brown (5YR 4/4 and 3/4) splotch apparently brought to surface by subsoiling or deep plowing.
A3 551993	7 to 13 inches. Reddish brown (5YR 4/3) friable light silty clay loam; moderate fine granular to weak fine subangular blocky structure; contains many fine roots and common pinholes and worm-holes.
B1 551994	13 to 21 inches. Dark reddish brown (2.5YR 3/4) friable heavy silty clay loam; slightly redder than above horizon; weak to moderate fine subangular blocky structure; a few clay skins on peds; common fine roots; contains a few black concretions 1.0 mm in diameter and an occasional quartzite pebble 1.0 to 2.0 mm in diameter.
B21 551995	21 to 29 inches. Dark reddish brown (2.5YR 3/4) exterior and dark red (2.5YR 3/6) interior; firm silty clay; moderate fine to medium angular blocky structure; clay skins on vertical and horizontal faces become more prominent with depth; contains a few black concretions 1.0 mm in diameter and a few fine roots.
B22 551996	29 to 40 inches. Dark reddish brown (2.5YR 3/4) exterior, dark red (2.5YR 3/6) interior; firm clay; strong coarse angular blocky structure which breaks to strong fine angular blocky structure; common black concretions and segregations 1.0 to 2.0 mm in diameter; occasional quartzite pebble 0.5 to 1.0 mm in diameter; continuous prominent clay skins; a very few fine roots.
B23 551997	40 to 52 inches. Dark reddish brown (2.5YR 3/4) exterior, dark red (10R 3/6) interior; firm clay; moderate to strong coarse angular blocky structure which breaks to moderate to strong fine angular blocky structure; contains an occasional medium prominent brown (7.5YR 5/4) and pale brown (10YR 6/3) streak of silty clay loam or silty clay; a few black concretions 1.0 mm in diameter; continuous clay skins on peds; occasional fine roots.
B24 551998	52 to 61 inches. Dusky red (10R 3/4) exterior, dark red (10R 3/6) interior; friable to firm clay; moderate to strong coarse angular blocky structure which breaks to moderate to strong fine angular blocky structure; continuous prominent clay skins; contains occasional black concretions 1.0 mm in diameter.
B31 551999	61 to 73 inches. Dusky red (10R 3/4) exterior, dark red (10R 3/6) interior; friable to firm clay; contains a few fine and medium prominent gray, pale brown (10YR 5/1 - 6/3), and brown (7.5YR 5/4) variegations; moderate coarse angular blocky structure which breaks to moderate fine angular blocky structure; continuous prominent clay skins on peds; contains an occasional quartzite pebble 1.0 to 2.0 mm in diameter.
B32 552000	73 to 85 inches plus. Dusky red (10R 3/4) exterior, dark red (10R 3/6) interior; friable to firm clay; contains a few medium and fine prominent gray, pale brown (10YR 5/1 - 6/3) and brown (7.5YR 5/4) variegations; moderate coarse angular blocky structure; clay skins are slightly less prominent than in horizon above; contains occasional quartzite pebble 1.0 to 2.0 mm in diameter.

606-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Dandridge silt loam SOIL Nos. S53Tenn-5-5 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53714-53715

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)			Coarse fragments 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct. of < 76mm	
0–8	A2	5.0	48.3	46.7	1.4	1.8	0.6	0.6	0.6	6.8	41.5	7.7	4.4			9		
8+	C	11.7	51.3	37.0	3.0	4.5	1.5	1.5	1.2	7.5	43.8	9.5	10.5			10		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0–8	2.44																	6.5
8+	0.89																	7.1

Depth (in.)	Extractable bases 5B1a: 6N2a Ca	6Q2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0–8	15.5	0.8	tr.	0.1	16.4	5.5	21.9									75	
8+	20.7	0.4	tr.	tr.	21.1	5.0	26.1									81	

Depth (in.)					

9684-SCS-HYATTSVILLE, MD. 1964

Soil Type: Dandridge silt loam
Soil No.: S53Tenn-5-5
Location: Blount County, Tennessee. 1/4 mile south of Hopewell.
Vegetation and land use: Forest.

Horizon and Beltsville Lab. No.	
A2 53714	0 to 8 inches. Yellowish brown (10YR 5/4) moderately plastic silt loam. Contains numerous soft and hard shale fragments.
C 53715	8 inches plus. Yellowish brown (10YR 5/4) plastic silty clay soil material mixed with leached and unleached shale fragments. Calcareous shale bedrock is at depth of 17 inches, locally.

Note: Colors refer to moist soil.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Dandridge silt loam SOIL Nos. 853Tenn-5-6 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53716-53717

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: (0.05–0.02)	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)			2A2 Coarse fragments ≥ 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct. of < 76mm	
0-8	A2	5.7	48.9	45.4	1.2	1.7	0.6	0.8	1.4	8.9	40.0	10.8	4.3			12		
8+	C	7.5	47.1	45.4	1.2	2.5	0.9	1.3	1.6	9.4	37.7	11.7	5.9			44		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-8	2.64																	6.1
8+	1.54																	6.3

Depth (in.)	Extractable bases 5B1a: 6N2a Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-8	10.6	0.5	0.1	0.1	11.3	8.3	19.6									58	
8+	12.3	0.4	0.1	tr.	12.8	7.1	19.9									64	

Depth (in.)					

USDA SCS HYATTSVILLE, MD 1964

Soil Type: Dandridge silt loam
Soil No.: S53Tenn-5-6
Location: Blount County, Tennessee. 2 miles south of Hopewell.
Vegetation and land use: Forest.

Horizon and Beltsville Lab. No.	
A2 53716	0 to 8 inches. Yellowish brown (10YR 5/4) moderately plastic silt loam to silty clay loam. Numerous weathered and partially weathered shale fragments. Upper 1 inch stained dark with organic matter.
C 53717	8 inches plus. Yellowish brown (10YR 5/4) plastic silty clay loam soil material mixed with soft and hard shale fragments. Calcareous shale bedrock is at depth of 16 inches.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Decatur silt loam SOIL Nos. 853Tenn-5-3 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53705-53709

Depth (in.)	Horizon	1B1b Total Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Size class and particle diameter (mm) Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: (0.05–0.02)	Int. III (0.02–0.002)	Int. II (0.2–0.02)	3A1 (2–0.1)			Coarse fragments 2A2 > 2 Pct.	2 - 19	19 - 76
		Pct. of < 2 mm															Pct. of < 76mm	
0-8	Ap	28.8	51.6	19.6	1.5	7.3	7.0	8.0	5.0	13.1	38.5	22.2	23.8			tr.		
8-14	B1	20.8	48.2	31.0	0.8	5.4	5.3	5.1	4.2	13.1	35.1	20.1	16.6			tr.		
14-20	B21	20.4	44.6	35.0	0.6	5.2	5.4	5.0	4.2	11.9	32.7	18.9	16.2			tr.		
20-40	B22	18.7	39.8	41.5	0.4	4.4	5.1	4.6	4.2	11.1	28.7	17.7	14.5			tr.		
40-60	C	16.2	35.5	48.3	0.5	4.2	4.1	3.8	3.6	9.7	25.8	15.4	12.6			-		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct	Pct	Pct.			pH		8C1a (1:1) H_2O
0-8	1.70																	6.2
8-14	0.28																	6.6
14-20	0.19																	6.5
20-40	0.12																	5.1
40-60	0.08																	5.0

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g.																
0-8	3.0	0.5	tr.	0.2	3.7	6.4	10.1									37	
8-14	1.8	1.0	tr.	0.2	3.0	4.6	7.6									39	
14-20	1.7	0.6	tr.	0.1	2.4	4.3	6.7									36	
20-40	0.6	0.6	tr.	0.1	1.3	7.4	8.7									15	
40-60	0.3	0.4	tr.	0.1	0.8	8.1	8.9									9	

Depth (in.)					

USDA-SCS-HYATTSVILLE, MD 1964

Soil Type: Decatur silt loam
Soil No.: 853Tenn-5-3
Location: Blount County, Tennessee. 1/2 mile west of Maryville.
Vegetation and land use: Permanent pasture. Orchard grass and lespedeza.

Horizon and Beltsville Lab. No.	
Ap 53705	0 to 8 inches. Dark reddish brown (5YR 3/3) friable silt loam.
B1 53706	8 to 14 inches. Dark reddish brown (2.5YR 3/4) friable silty clay loam; moderately developed fine blocky structure.
B21 53707	14 to 20 inches. Dark red (2.5YR 3/6) firm silty clay; moderately developed medium blocky structure.
B22 53708	20 to 40 inches. Dark red (10R 3/6) firm silty clay; strongly developed medium blocky structure.
C 53709	40 to 60 inches. Red (10R 4/6) to dark red (10R 3/6) firm or very firm silty clay. A few faint brownish yellow mottles. Strongly developed medium blocky structure.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Decatur silt loam SOIL Nos. 853Tenn-5-4 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53710-53713

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Total: Silt (0.05–0.002)	Total: Clay (< 0.002)	Sand: Very coarse (2–1)	Sand: Coarse (1–0.5)	Sand: Medium (0.5–0.25)	Sand: Fine (0.25–0.1)	Sand: Very fine (0.1–0.05)	Silt: 0.05–0.02	Silt: Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)			Coarse fragments: 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct. of < 76mm	
0-7	Ap	23.3	46.8	29.9	1.2	3.7	4.3	7.6	6.5	13.9	32.9	24.6	16.8			tr.		
7-17	B1	17.4	40.6	42.0	0.8	2.7	3.0	4.9	6.0	11.1	29.5	20.0	11.4			tr.		
17-39	B2	18.8	39.7	41.5	0.5	2.6	3.4	5.4	6.9	12.1	27.6	22.1	11.9			tr.		
39-60	C	17.5	35.8	46.7	0.4	2.4	2.9	4.9	6.9	10.5	25.3	20.2	10.6					

Depth (in.)	6A1a Organic carbon Pct	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-7	1.07																	5.4
7-17	0.22																	5.2
17-39	0.09																	4.7
39-60	0.04																	4.8

Depth (in.)	Extractable bases 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-7	1.7	0.5	tr.	0.3	2.5	9.8	12.3									20	
7-17	1.3	0.6	tr.	0.1	2.0	7.7	9.7									21	
17-39	0.3	0.6	tr.	0.1	1.0	7.8	8.8									11	
39-60	0.2	0.4	tr.	0.1	0.7	8.6	9.3									8	

Depth (in.)					

USDA-SCS-HYATTSVILLE, MD 1964

Soil Type: Decatur silt loam
Soil No.: S53Tenn-5-4
Location: Blount County, Tennessee. 1/2 mile south of Clover Hill.
Vegetation and land use: Winter pasture - tobacco. Crimson clover and oats.

Horizon and Beltsville Lab. No.	
Ap 53710	0 to 7 inches. Dark reddish brown (5YR 3/3) friable silt loam to silty clay loam.
B1 53711	7 to 17 inches. Dark reddish brown (2.5YR 3/4) to dark red (2.5YR 3/6) firm silty clay loam; moderately developed fine blocky structure.
B2 53712	17 to 39 inches. Dark red (10R 3/6) firm silty clay; moderate to strongly developed medium blocky structure.
C 53713	39 to 60 inches. Red (10R 4/6) to dark red (10R 3/6) firm or very firm silty clay; strongly developed medium to coarse blocky structure. A few faint brownish yellow mottles.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1963

SOIL TYPE Dekoven silt loam **LOCATION** Dyer County, Tennessee

SOIL NOS. S61Tenn-23-8 **LAB. NOS.** 16425-16430

DEPTH INCHES	HORIZON	1H1a PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	3A1 0.02-0.002	2A2 > 2	TEXTURAL CLASS
0-6	Ap1	0.1a	0.2a	Tr.a	0.1a	1.2b	75.3	23.1	45.2	31.4	-	
6-10	Ap2	0.1a	0.1a	0.1a	0.2a	1.0b	73.1	25.4	43.3	30.9	-	
10-18	A1b1	0.5a	0.4a	0.2a	0.2a	0.9b	68.3	29.5	39.3	30.0	-	
18-24	A1b2	0.5a	0.5a	0.2a	0.2a	1.0c	69.4	28.2	39.6	30.9	-	
24-39	C1g	0.2a	0.2a	0.1a	0.2a	0.8b	73.4	25.1	43.2	31.1	-	
39-56	C2g	0.2a	0.3a	0.1a	0.2a	1.4d	76.3	21.5	49.3	28.5	-	

8C1a pH 1:1	6E1c $CaCO_3$ equivalent %	ORGANIC MATTER 6A1a O.C. e %	6B1a N %	C/N	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	A.D. 4A1b g/cc	WATER RETENTION 4B1b 1/3-Bar Pieces %	4B2 15-Bar Sieved %	4C1 15-to 1/3-Bar in./in.
6.2		2.06	0.167	12	18.8	1.50	27.9	1.40	1.60	25.1	11.7	.19
6.3		1.18	0.100	12	16.9	1.53	28.6	1.40	1.60	24.9	12.1	.18
6.6	-	1.02	0.080	13	17.6	1.57	27.0	1.44	1.65	26.5	14.7	.17
6.6	-	0.78	0.065	12	17.5	1.58	27.8	1.43	1.67	26.8	14.3	.18
7.0	-	0.37			19.8	1.56	27.8	1.46	1.65	26.6	12.1	.21
7.1	-	0.13			20.3	1.57	28.3	1.46	1.65	25.7	11.3	.21

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	5C1 Base Sat.% NH_4OAc	5C3 Base Sat.% on Sum Cations	6Q2a Ext. Al me/100g	6C1a Ext. Iron as Fe %	Ratios to Clay 15-Atm. Water	NH_4OAc CEC	8D2 Ext. Iron
	milliequivalents per 100g. soil											
21.7	15.6	6.0	5.4	Tr.	0.2	100	80		0.8	.51	.94	.035
21.8	14.9	6.7	4.7	0.1	0.3	101	82		0.7	.48	.86	.028
24.7	16.8	8.4	4.0	0.1	0.4	104	86		0.8	.50	.84	.027
23.4	15.6	8.5	3.6	0.1	0.3	105	87		0.8	.51	.83	.028
20.8	13.3	7.9	2.6	0.1	0.4	104	89		0.8	.48	.83	.032
19.6	12.0	7.3	2.4	0.1	0.4	101	89		0.8	.52	.91	.037

a. Many Fe-Mn nodules.
b. Few Fe-Mn nodules.
c. Common Fe-Mn nodules.
d. Trace Fe-Mn nodules.
e. 14 Kg/M² to 60 inches.

Soil type: Dekoven silt loam
Soil Nos. : S61Tenn-23-8
Location: Dyer County, Tennessee; north of Dyersburg, Tennessee, from junction of U. S. Highway 51 and U. S. Highway 51 by-pass, one mile to a gravel road - on gravel road 0.25 mile south - 300 feet northeast to sample site which is also 30 feet north of a field road. Aerial photo AIN-2R -42.
Vegetation and use: Recently combined soybeans.
Slope and land form: Slight depression in recent flood plain.
Drainage and permeability: Somewhat poorly drained with very slow runoff and slow internal drainage; permeability is slow.
Parent material: Alluvium, chiefly from loess, deposited under ponded conditions.
Collected by: E. J. Pedersen, J. L. Millet, J. A. Elder, E. C. Sease, W. C. Moffitt, C. L. Moore, and W. C. Jackson.
Described by: W. T. Brown, October 16, 1961.

Horizon and Lincoln Lab. Number	
Ap1 16425	0 to 6 inches. Very dark gray (10YR 3/1) silt loam; coarse angular clods breaking to weak fine granular structure (weak fine granular structure has developed in top three inches); friable; few fine roots; undecomposed corn residue in lower one inch; abrupt smooth boundary.
Ap2 16426	6 to 10 inches. Very dark gray (10YR 3/1) silt loam or silty clay loam with few fine distinct gray (10YR 6/1) mottles; coarse angular clods breaking to weak fine granular structure; friable; few very fine roots; clear smooth boundary.
Alb1 16427	10 to 18 inches. Black (N 2/) silty clay loam, moderate fine prismatic structure breaking to moderate medium subangular blocky structure; friable; few fine roots; few very fine pores; few small black concretions; gradual smooth boundary.
Alb2 16428	18 to 24 inches. Very dark gray (10YR 3/1) silty clay loam with few coarse distinct yellowish brown (10YR 5/4) mottles; moderate medium prismatic structure breaking to moderate medium subangular blocky structure; friable; few fine roots; few very fine pores; few small black concretions; clear smooth boundary.
C1g 16429	24 to 39 inches. Dark gray (10YR 4/1) silt loam with many coarse distinct yellowish brown (10YR 5/4) mottles; weak coarse prismatic structure; friable; few very fine pores; few root and worm holes; clear smooth boundary.
C2g 16430	39 to 56 inches. Gray (5Y 5/1) silt loam with many medium distinct light olive brown (2.5Y 5/4) mottles; weak very coarse prismatic structure to massive; friable; few very fine pores; few root and worm holes.

Remarks: Ap1, Alb1, and C2g sampled for Bureau of Public Roads. Colors and Munsell notations given are for moist soil; soil was dry when sampled. Crayfish holes, filled with very dark gray material from above were evident in C1g and C2g horizons. All samples were fumigated with methyl bromide for 24 hours.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1963

SOIL TYPE Dekowm silt loam **LOCATION** Dyer County, Tennessee

SOIL NOS. S61Tenn-23-9 **LAB. NOS.** 16431-16436

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1 VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002	2A2 > 2	TEXTURAL CLASS
0-8	Ap	0.1a	0.1a	0.2a	0.6a	0.5b	74.7	23.8	29.8	45.6	-	
8-15	Alb1	0.2a	0.3a	0.1a	0.2a	0.6b	70.6	28.0	36.7	34.6	-	
15-20	Alb2	0.3a	0.7a	0.3a	0.3a	0.5a	71.0	26.9	38.3	33.4	-	
20-37	C1g	0.1a	0.3a	0.1a	0.2a	0.6b	72.3	26.4	37.2	35.8	-	
37-55	C2g	0.3a	0.3a	0.1a	0.2a	0.8a	75.7	22.6	39.0	37.6	-	
55-63	C3g	0.4a	0.6a	0.1a	0.2a	1.0d	77.9	19.8	44.1	34.9	-	

8C1a pH 1:1	6E1c $CaCO_3$ equivalent %	ORGANIC MATTER 6A1a O.C. e %	6B1a N %	C/N	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	A.D. 4A1b g/cc	WATER RETENTION 4B1b 1/3-Bar Pieces %	4B2 15-Bar Sieved %	4C1 15-to 1/3-Bar in./in.
6.1		1.18	0.114	10	16.2	1.59	26.5	1.48	1.64	25.0	11.0	.21
6.7	-	1.11	0.083	13	19.4	1.54	28.7	1.40	1.65	27.1	14.1	.18
6.9	-	0.75	0.066	11	22.6	1.46	29.7	1.38	1.59	25.9	13.8	.17
7.1	-	0.36	0.040	9	18.6	1.56	28.2	1.44	1.64	26.8	13.8	.19
7.2	-	0.17			20.2	1.58	26.7	1.47	1.66	27.1	12.5	.21
7.2	Tr.	0.14									11.4	

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	5C1 Base Sat.% NH_4OAc	5C3 Base Sat.% on Sum Cations	6Q2a Ext. Al me/100g	6C1a Ext. Iron as Fe %	Ratios to Clay 8D2 15-Atm. Water	NH_4OAc CEC	Ext. Iron
←	milliequivalents per 100g. soil				→							
19.4	12.2	5.5	5.9	0.1	0.2	93	75		0.9	.46	.82	.038
24.7	16.3	8.7	3.8	0.1	0.3	103	87		0.6	.50	.88	.021
22.2	14.5	8.4	3.3	0.1	0.3	105	88		0.8	.51	.82	.030
22.1	14.1	9.2	2.4	0.1	0.4	108	91		0.9	.52	.84	.034
20.8	12.8	8.7	1.9	0.1	0.3	105	92		0.8	.55	.92	.035
16.5	10.1	7.0	2.1	0.1	0.3	106	89		2.4	.58	.83	.12

a. Many Fe-Mn nodules.
b. Few Fe-Mn nodules.
c. Common Fe-Mn nodules.
d. Trace Fe-Mn nodules.
e. 11 Kg/M² to 60 inches.

Soil type: Dekoven silt loam
Soil Nos. : S61Tenn-23-9
Location: Dyer County, Tennessee; from Roellen 1.8 miles south to a gravel road parallel to a railroad - on gravel road 0.8 mile west - on field road 0.2 mile south - 100 feet east from ditch to sample site which is also 30 feet south of a field road; sample site is on the Ed Davis farm. Aerial photo ADN-1R-102.
Vegetation and use: Corn and sorghum recently cut for silage.
Slope and land form: Slight depression in recent flood plain.
Drainage and permeability: Somewhat poorly drained with slow runoff and slow internal drainage; permeability is slow.
Parent material: Alluvium, chiefly from loess, deposited under ponded conditions.
Collected by: E. J. Pedersen, J. L. Millet, J. A. Elder, E. C. Sease, W. C. Moffitt, C. L. Moore, and W. C. Jackson.
Described by: W. T. Brown, October 16, 1961.

Horizon and Lincoln Lab. Number	
Ap 16431	0 to 8 inches. Very dark grayish brown (10YR 3/2) silt loam; weak fine granular structure; friable; common fine roots; abrupt smooth boundary.
Alb1 16432	8 to 15 inches. Black (10YR 2/1) silty clay loam; weak fine prismatic structure breaking to weak medium subangular blocky structure; friable; common fine roots; thin patchy clay films on vertical ped faces; few fine pores; clear smooth boundary.
Alb2 16433	15 to 20 inches. Very dark gray (10YR 3/1) silty clay loam; weak fine prismatic structure breaking to weak medium subangular blocky structure; friable; thin patchy clay films on vertical ped faces; few very fine pores; common small black concretions; clear wavy boundary.
C1g 16434	20 to 37 inches. Gray (10YR 5/1) silty clay loam with common, coarse and medium distinct light olive brown (2.5Y 5/4) mottles; weak medium and coarse prismatic structure; friable; common fine roots; common fine pores and root holes; clear wavy boundary.
C2g 16435	37 to 55 inches. Gray (5Y 5/1) silt loam with many coarse distinct light olive brown (2.5Y 5/6) mottles; massive; friable; few fine pores and root holes; few small black concretions; clear wavy boundary.
C3g 16436	55 to 63 inches. Gray (5Y 5/1) silt loam with common coarse distinct light olive brown (2.5Y 5/6) mottles; massive; friable; common medium pores or root holes; common small black concretions.
	63 inches. Water.

Remarks: Ap, Alb1, and C2g sampled for Bureau of Public Roads. Colors and Munsell notations are for moist soil; soil was dry in upper layer when sampled--water at 63 inches. All samples were fumigated with methyl bromide for 24 hours.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Dellrose cherty silt loam, eroded steep light colored, subsoil phase SOIL Nos. 855Tenn-16-25 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551966 - 551973

Depth (in.)	Horizon	1B1b Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (< 0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: Int. III (0.02-0.002)	Silt: Int. II (0.2-0.02)	(2-0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 ≥ 2 Pct.	2-19 (Pct. of < 76mm)	19-76 (Pct. of < 76mm)
		Pct. of < 2 mm																
0-9	Ap		66.2	19.2	5.1	3.9	1.8	2.0	1.8		49.3	19.7				30		
9-16	A3		65.4	21.0	5.2	3.5	1.6	1.7	1.6		48.8	19.1				17		
16-25	B1		57.1	26.1	5.9	4.4	1.9	2.2	2.4		43.2	17.4				17		
25-35	B21		54.5	29.8	4.2	4.2	2.2	2.6	2.5		41.5	16.9				8		
35-44	B22		54.4	30.1	4.3	4.3	2.0	2.4	2.5		41.1	17.1				7		
44-55	B23		53.3	31.8	4.2	4.2	1.9	2.2	2.4		39.2	17.7				14		
55-62	B24		52.0	31.6	5.5	4.5	1.8	2.2	2.4		38.8	16.8				11		
62-74	B3		52.0	31.6	4.3	4.0	1.9	2.8	3.4		37.9	18.9				13		

Depth (in.)	6A1e Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron & as Fe_2O_3 Pct.	Bulk density: g/cc	4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: Pct.	4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in	pH:	8C1c (1:1) KCl	8C1e (1:1) H_2O
0-9	1.38	0.140	10			2.3												5.3
9-16	0.96	0.060	16			2.8												5.5
16-25	0.18	0.046				3.2												5.2
25-35	0.14	0.060				3.5												4.9
35-44	0.12	0.056				3.8												4.8
44-55	0.09	0.058				4.3												4.7
55-62	0.12	0.058				4.3												4.6
62-74	0.09	0.062				4.9												4.6

Depth (in.)	Extractable bases 5B1a: 6N2d Ca (meq/100 g)	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations		6G1d Ext. Al		Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
0-9	2.3	0.2	0.1	0.2		11.7	14.5									19	
9-16	2.6	0.3	0.1	0.1		6.6	9.7									32	
16-25	3.4	0.3	0.1	0.2		7.4	11.4									35	
25-35	1.4	0.6	0.1	0.2		8.8	11.1									21	
35-44	0.8	0.4	tr.	0.2		9.4	10.8									13	
44-55	0.4	0.6	tr.	0.2		10.7	11.9									10	
55-62	0.3	0.5	tr.	0.2		10.7	11.7									8	
62-74	0.3	0.3	tr.	0.2		10.5	11.3									7	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite	
	7A2 X-ray						7A3		

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

USDA SCS-HYATTSVILLE, MD. 1966

Soil Type: Dellrose cherty silt loam, eroded steep light colored subsoil phase.
Soil No.: S55Tenn-16-25
Location: Coffee County, Tennessee. 0.1 mile north of Stepp's store at Noah on U. S. Highway 41 at Texaco Service Station. 100 yards northeast of highway and 60 yards west of edge of woods near top of ridge. Aerial photo 5G-77.
Vegetation and land use: Consists chiefly of lespedeza and rag weeds.
Slope and land form: 26 percent.

Horizon and Beltsville Lab. No.	
Ap 551966	0 to 9 inches. Dark brown to brown (10YR 3/3 - 4/3) friable cherty silt loam; weak fine granular structure; contains many small roots; larger chert fragments comprising an estimated 2 percent of volume discarded.
A3 551967	9 to 16 inches. Brown (7.5YR 4/4 - 5/4) friable cherty silt loam; weak medium to fine granular and weak fine subangular blocky structure; contains a few black concretions 1.0 mm in diameter; larger chert fragments comprising an estimated 2 percent of volume discarded.
B1 551968	16 to 25 inches. Strong brown (7.5YR 5/6) friable cherty heavy silt loam; weak to moderate fine angular blocky structure; contains many black concretions and segregations 1.0 mm in diameter; a few yellowish red (5YR 5/6) clay skins on vertical and horizontal faces of peds and chert fragments; larger chert fragments comprising an estimated 5 percent of volume discarded.
B21 551969	25 to 35 inches. Yellowish red (5YR 5/6) with a few light yellowish brown (10YR 6/4) variegations which are strong brown (7.5YR 5/6) when crushed; friable cherty light silty clay loam; moderate fine and medium subangular and angular blocky structure; common distinct clay skins on vertical and horizontal faces of peds and chert fragments; many black stains and concretions 1.0 mm in diameter; contains an occasional small piece of weathered shale; larger chert fragments comprising an estimated 1 percent of volume discarded.
B22 551970	35 to 44 inches. Yellowish red (5YR 5/6) with many fine and medium distinct strong brown (7.5YR 5/6) and light yellowish brown (10YR 6/4) variegations; friable to firm cherty silty clay loam; moderate medium angular blocky structure; prominent clay skins on vertical and horizontal faces of peds and chert fragments; contains many black concretions and stains 1.0 mm in diameter; occasional small piece of weathered shale; larger chert fragments comprising an estimated 2 percent of total volume discarded.
B23 551971	44 to 55 inches. Yellowish red (5YR 5/6) with common fine distinct strong brown (7.5YR 5/6) and light yellowish brown (10YR 6/4) variegations; friable to firm cherty silty clay loam; moderate medium angular blocky structure; prominent yellowish red (5YR 4/6) clay skins on horizontal and vertical faces of peds and chert fragments; common black concretions 1.0 mm in diameter; occasional small piece of partly weathered greenish and black shale; larger chert fragments comprising an estimated 2 percent of total volume discarded.
B24 551972	55 to 62 inches. Yellowish red (5YR 5/6) with many fine faint to distinct strong brown (7.5YR 5/6) and light yellowish brown (10YR 6/4) variegations; friable to firm cherty silty clay loam; moderate medium and coarse angular blocky structure; prominent clay skins on horizontal and vertical faces of peds and chert fragments; contains a few black concretions 1.0 mm in diameter and an occasional small piece of partly weathered greenish and black shale; larger chert fragments comprising an estimated 2 percent of total volume discarded.
B3 551973	62 to 74 inches. Yellowish red (5YR 5/6) with many fine distinct strong brown (7.5YR 5/6) and light yellowish brown (10YR 6/4) variegations; friable to firm cherty silty clay loam; moderate medium to coarse angular blocky structure; common distinct clay skins on vertical faces of peds and chert fragments but few faint clay skins on horizontal faces; common black concretions 1.0 mm in diameter; occasional small pieces of partly weathered greenish and black shale; chert fragments range from 1/4 to 4 inches in diameter; fine chert of sand size gives the soil a gritty feel; larger chert fragments comprising an estimated 10 percent of the total volume discarded.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Dellrose cherty silt loam, eroded steep light colored subsoil phase SOIL Nos. 855Tenn-16-26 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551974 - 551981

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm														Pct. of < 76mm		
0-8	Ap		67.9	17.4	5.2	3.9	1.8	2.2	1.6		49.2	21.4				30		
8-14	A3		67.6	19.9	4.0	3.4	1.6	2.0	1.5		50.7	19.3				32		
14-22	B1		63.8	19.6	5.6	4.6	2.0	2.3	2.1		46.4	20.7				42		
22-33	B21		60.8	19.5	6.4	5.3	2.5	2.9	2.6		44.5	20.4				40		
33-44	B22		57.4	17.9	7.9	6.0	2.9	3.9	4.0		40.3	23.3				34		
44-57	B23		59.5	17.0	7.2	5.3	2.6	3.9	4.5		40.5	25.7				29		
57-65	B24		63.0	19.3	5.4	3.8	1.9	2.7	3.9		44.8	23.7				26		
65-77	B3		57.3	26.4	4.7	4.0	1.9	2.4	3.3		40.9	20.9				40		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density: 4A1a ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: Pct.	4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in		pH: 8C1c (1:1) KCl	8C1a (1:1) H_2O
0-8	1.96	0.170	12			2.1											5.3
8-14	0.48	0.066	7			2.4											5.5
14-22	0.24	0.046				2.7											5.5
22-33	0.15	0.035				3.0											5.4
33-44	0.08	0.031				3.0											4.9
44-57	0.08	0.029				3.0											4.8
57-65	0.09	0.030				3.0											4.8
65-77	0.09	0.040				4.1											4.9

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations	6G1d Ext. Al			Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																
0-8	1.8	0.6	0.1	0.2		12.1	14.8									18	
8-14	2.5	0.4	0.1	0.2		6.8	10.0									32	
14-22	3.0	0.4	0.1	0.2		5.5	9.2									40	
22-33	2.7	0.7	0.1	0.2		5.3	9.0									41	
33-44	0.4	0.6	tr.	0.2		6.4	7.6									16	
44-57	0.2	0.2	tr.	0.2		5.8	6.4									9	
57-65	0.1	0.1	tr.	0.2		5.6	6.0									7	
65-77	0.7	0.4	tr.	0.2		7.3	8.6									15	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray						7A3	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

USDA-SCS-HYATTSVILLE, MD 1966

Soil Type: Dellrose cherty silt loam, eroded steep light colored subsoil phase.
Soil No.: S55Tenn-16-26
Location: Coffee County, Tennessee. 2.0 miles north of Noah on Noah-Gnat Hill Road on the Russell Carden farm. 60 yards east of road at short fence at north of barn on west side of road and 40 yards north west of mulberry tree near edge of woods. Aerial photo 5G-118.
Vegetation and land use: Unimproved pasture of lespedeza, sedge grass, crab grass and weeds.
Slope and land form: 28 percent.

Horizon and Beltsville Lab. No.	
Ap 551974	0 to 8 inches. Dark brown to brown (10YR 3/3 - 4/3) friable cherty silt loam; weak fine granular structure; contains many fine grass and weed roots; chert fragments on surface and in plow layer range mostly from 1 to 6 inch diameter. Larger chert fragments comprising an estimated 3 percent of the total volume discarded.
A3 551975	8 to 14 inches. Brown (7.5YR 4/4) friable cherty silt loam; weak to moderate fine granular to weak fine subangular blocky structure; contains an occasional black concretion 0.5 to 1.0 mm in diameter; larger chert fragments comprising an estimated 10 percent of the total volume discarded.
B1 551976	14 to 22 inches. Strong brown to brown (7.5YR 5/6 - 4/4) friable cherty light silty clay loam; weak fine angular blocky structure; contains a few black concretions and segregations 1.0 mm in diameter; a few clay skins on vertical and horizontal faces of peds and chert fragments which are yellowish red (5YR 5/6) in color; larger chert fragments comprising an estimated 5 percent of the total volume discarded.
B21 551977	22 to 33 inches. Yellowish red (5YR 5/6) strong brown (7.5YR 5/6) (when crushed) with a few light yellowish brown (10YR 6/4) mottles or variegations; friable cherty silty clay loam; moderate fine and medium angular and subangular blocky structure; common distinct clay skins on horizontal and vertical faces of peds and chert fragments; common black concretions and stains 1.0 mm in diameter; an occasional small piece of weathered shale; larger chert fragments comprising an estimated 10 percent of total volume discarded.
B22 551978	33 to 44 inches. Yellowish red (5YR 5/6) with common fine and medium distinct strong brown (7.5YR 5/6) and light yellowish brown (10YR 6/4) variegations, friable to firm cherty silty clay loam; moderate medium angular blocky structure; prominent clay skins on vertical and horizontal faces of peds and chert fragments; contains common black concretions 1.0 mm in diameter; a few blackish stains, and an occasional small piece of weathered shale; larger chert fragments comprising an estimated 2 percent of the total volume discarded.
B23 551979	44 to 57 inches. Yellowish red (5YR 5/6) friable to firm cherty silty clay loam with common distinct light yellowish brown (10YR 6/4) and strong brown (7.5YR 5/6) variegations; moderate medium angular blocky structure; prominent clay skins on horizontal and vertical faces of peds and chert fragments which are yellowish red (5YR 4/6) in color; common black concretions 1.0 mm in diameter; an occasional small piece of partly weathered black or greenish shale; larger chert fragments comprising an estimated 2 percent of the total volume discarded.
B24 551980	57 to 65 inches. Yellowish red (5YR 5/6) friable to firm cherty silty clay loam with many fine faint to distinct light yellowish brown (10YR 6/4) and strong brown (7.5YR 5/6) variegations; moderate medium and coarse angular blocky structure; prominent clay skins on horizontal and vertical faces of peds and chert fragments; a few black concretions 1.0 mm in diameter; an occasional small piece of partly weathered black or greenish shale; larger chert fragments comprising an estimated 2 percent of the toal volume discarded.
B3 551981	65 to 77 inches. Yellowish red (5YR 5/6) friable to firm cherty silty clay loam with many fine distinct light yellowish brown (10YR 6/4) and strong brown (7.5YR 5/6) variegations; moderate medium to coarse angular blocky structure; distinct clay skins on vertical faces, few clay skins on horizontal faces; a few black concretions 1.0 mm in diameter; an occasional small piece of partly weathered black or greenish shale; larger chert fragments comprising an estimated 10 percent of the total volume discarded.

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10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Dewey silt loam, undulating phase SOIL Nos. 554Tenn-16-3 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551303 - 551306

Depth (in.)	Horizon	1B1b Total Sand (2–0.05)	Total Silt (0.05–0.002)	Total Clay (< 0.002)	Sand Very coarse (2–1)	Sand Coarse (1–0.5)	Sand Medium (0.5–0.25)	Sand Fine (0.25–0.1)	Sand Very fine (0.1–0.05)	Silt (0.05–0.02)	Silt Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm														Pct.	Pct. of < 76mm	
0-2	A1		70.5	11.4	2.0	2.2	1.2	4.5	8.2		44.2	37.6				4		
2-8	A2		70.0	13.9	2.0	1.9	1.0	3.8	7.4		43.3	36.7				2		
13-32	B2		47.4	42.1	0.5	0.5	0.4	2.5	6.6		33.5	22.6				-		
32+	C		31.2	57.8	0.2	0.5	0.3	3.0	7.0		22.2	18.7				-		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density: g/cc	4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: Pct.	4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in	pH:	8C1c (1:1) KCl	8C1a (1:1) H_2O
0-2	1.99	0.118	17			1.6												5.6
2-8	1.00	0.073	14			1.9												5.0
13-32	0.13	0.039				5.0												4.7
32+	0.06	0.046				7.1												4.8

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations		6G1d Ext. Al			Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																	
0-2	3.0	1.0	tr.	0.4		6.5	10.9										40	
2-8	0.8	0.2	tr.	0.2		6.1	7.3										16	
13-32	0.3	1.1	tr.	0.2		11.9	13.5										12	
32+	0.7	1.3	tr.	0.2		16.5	18.7										12	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Mi.	Int	Qtz.	Kl.	Gibbsite	
	7A2 X-ray						7A3		

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

USDA-SCS-HYATTSVILLE, MD. 1966

Soil Type: Dewey silt loam, undulating phase.
Soil No.: S54Tenn-16-3
Location: Coffee County, Tennessee. 2.5 miles east of Summitville-Hopewell Road on gravel road to Calvin Williams farm at Mud Creek, then north 0.1 mile on side road to small wood on west side of road. 60 feet north west of power pole with transformer and 20 feet west of road. Aerial photo 6G-175.
Vegetation and land use: Woods consisting chiefly of red oaks.

Horizon and Beltsville Lab. No.	
O1, O2 Not Sampled	1 to 0 inches. Forest litter and leaf mold.
A1 151303	0 to 2 inches. Brown (10YR 5/3 - 4/3) very friable silt loam; weak fine crumb structure.
A2 151304	2 to 8 inches. Yellowish brown (10YR 5/4) very friable silt loam; moderate medium crumb to weak fine subangular blocky structure.
B1 Not Sampled	8 to 13 inches. Strong brown (7.5YR 5/8) friable silty clay loam; weak fine to medium subangular blocky structure.
B2 151305	13 to 32 inches. Yellowish red (5YR 4/6) or red (2.5YR 4/6) firm silty clay loam; moderate medium subangular structure; finely divided chert fragments are common and increase with depth.
C 151306	32 inches plus. Red to dark red (2.5YR 4/8 - 3/6) mottled or splotched with yellow (10YR 7/6); firm silty clay; moderate medium angular blocky structure; contains finely divided chert fragments and angular chert pieces.

SCS-421
10-64 (Rev. 9-68)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Dewey silt loam, undulating phase SOIL Nos. 554Tenn-16-14 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551347 - 551350

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Total: Silt (0.05–0.002)	Total: Clay (< 0.002)	Sand: Very coarse (2–1)	Sand: Coarse (1–0.5)	Sand: Medium (0.5–0.25)	Sand: Fine (0.25–0.1)	Sand: Very fine (0.1–0.05)	Silt: 0.05–0.02	Silt: Int. III (0.02–0.002)	Silt: Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct. of < 76mm	
0-2	A1		58.3	8.2	2.5	4.0	2.8	11.8	12.4		32.4	46.1				tr.		
2-8	A2		65.4	10.9	2.7	2.0	0.9	7.1	11.0		39.4	42.7				3		
14-34	B2		50.7	40.3	0.7	0.5	0.3	2.7	4.8		35.8	21.9						
34+	C		29.5	54.9	1.8	1.7	1.0	4.2	6.9		26.6	13.0				tr.		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density: g/cc	4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: Pct.	4B1a ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in	pH:	8C1c (1:1) KCl	8C1a (1:1) H_2O
0-2	7.7	0.355	22			1.6												4.7
2-8	1.73	0.082	21			2.1												4.5
14-34	0.37	0.040				4.2												4.7
34+	0.07	0.023				6.7												4.8

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations		6G1d Ext. Al		Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																
0-2	7.4	2.5	0.1	0.5		16.5	27.0									39	
2-8	1.5	0.3	0.1	0.1		7.0	9.0									22	
14-34	0.3	0.9	tr.	0.2		10.6	12.0									12	
34+	0.2	0.2	tr.	0.1		11.3	11.8									4	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray						7A3	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

USDA-SCS-BEALTSVILLE, MD. 1966

Soil Type: Dewey silt loam, undulating phase.
Soil No.: S54Tenn-16-14
Location: Coffee County, Tennessee. Small wooded area 100 yards south of Pleasant Knoll Church at intersection of gravel roads. 60 yards west of intersection to large cedar tree at edge of wooded area and 25 feet south of road at cedar tree. Aerial photo 7G-44.

Horizon and Beltsville Lab. No.	
O1, O2 Not Sampled	1 to 0 inches. Forest litter and leaf mold.
A1 551347	0 to 2 inches. Brown (10YR 5/3 - 4/3) very friable silt loam; weak fine crumb structure.
A2 551348	2 to 8 inches. Yellowish brown (10YR 5/4) very friable silt loam; moderate medium crumb or weak fine subangular blocky structure.
B1 Not Sampled	8 to 14 inches. Strong brown (7.5YR 5/8) friable silty clay loam; weak fine to medium subangular blocky structure.
B2 551349	14 to 34 inches. Yellowish red (5YR 4/6) or red (2.5YR 4/6) firm silty clay loam; moderate medium subangular blocky structure.
C 551350	34 inches plus. Red or dark red (2.5YR 4/8 - 3/6) moderately cherty firm silty clay; moderate medium angular blocky structure.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Dickson silt loam, undulating phase SOIL Nos. S54Tenn-16-4 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551307 - 551311

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm														Pct. of < 76mm		
0-1	A1		72.1	10.9	1.3	2.2	1.6	6.0	5.9		46.0	35.8				tr.		
1-6	A2		73.8	12.9	0.7	1.0	0.8	4.8	6.0		48.2	35.0				tr.		
11-23	B2		69.6	20.4	1.2	0.8	0.6	3.0	4.4		49.1	27.1				tr.		
27-48	Bm		68.0	21.8	0.8	0.7	0.5	3.2	5.0		46.5	28.8				tr.		
48+	D		54.1	32.9	1.7	1.0	0.7	3.9	5.7		37.0	25.7				tr.		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density: 4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: Pct.	4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in	pH: 8C1c (1:1) KCl	8C1a (1:1) H_2O
0-1	5.0	0.193	26			1.4										4.0
1-6	1.03	0.064	16			1.7										4.3
11-23	0.16	0.032				2.5										4.5
27-48	0.08	0.018				2.2										4.6
48+	0.05	0.016				4.5										4.7

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext acidity	CEC: 5A3a Sum cations		6G1d Ext Al		Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct	5C1 NH_4OAc Pct.
	meq/100 g																
0-1	1.0	0.9	0.1	0.3		14.1	16.4									14	
1-6	0.2	0.3	tr.	0.1		7.6	8.2									7	
11-23	0.1	0.2	0.1	0.1		8.8	9.3									5	
27-48	0.2	0.1	0.1	0.1		8.8	9.3									5	
48+	0.2	0.2	tr.	0.1		11.0	11.5									4	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray						7A3	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts, blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

a Undecomposed organic matter in sand fraction.

USDA-SCS-HYATTSVILLE, MD 1966

Soil Type: Dickson silt loam, undulating phase.
Soil No.: S54Tenn-16-4
Location: Coffee County, Tennessee. 1.5 miles south of Hopewell Cemetery on Summitville-Hopewell road to gravel side road marked with T. C. Barrel mail box with red milk can for base. 100 yards east on gravel road and 25 feet south of road in woods. Aerial photo 6G-127.

Horizon and Beltsville Lab. No.	
01, 02 Not Sampled	1 to 0 inches. Forest litter and leaf mold.
A1 551307	0 to 1 inch. Grayish brown (10YR 5/2) very friable silt loam; weak fine crumb structure.
A2 551308	1 to 6 inches. Light yellowish brown or yellowish brown (10YR 6/4 - 5/4) very friable silt loam; weak fine to medium subangular blocky structure.
B1 Not Sampled	6 to 11 inches. Light yellowish brown or yellowish brown (10YR 6/4 - 5/4) very friable silt loam; weak medium to coarse angular blocky structure.
B2 551309	11 to 23 inches. Light yellowish brown or yellowish brown (10YR 6/4 - 5/4) (slightly paler than layer above) very friable silt loam; weak to moderate medium angular and subangular blocky structure.
B3 Not Sampled	23 to 27 inches. Mottled light yellowish brown, yellowish brown (10YR 6/4 - 5/4) and gray friable silt loam; weak to moderate medium angular and subangular blocky structure; many medium prominent mottles; brown concretion averaging about 5 mm generally present.
Bm 551310	27 to 48 inches. Mottled yellowish brown, yellow and gray compact in place but breaks or crushes to friable silt loam; strong medium angular blocky to coarse platy structure; many medium prominent mottles.
D 551311	48 inches plus. Mottled yellow, gray, and red firm silty clay loam or silty clay; generally moderately cherty; strong medium to coarse angular blocky structure; many medium prominent mottles which become more pronounced with depth.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Dickson silt loam, undulating phase SOIL Nos. S54Tenn-16-10 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551330 - 551334

Depth (In.)	Horizon	1B1b Total Sand (2–0.05)	Total Silt (0.05–0.002)	Total Clay (< 0.002)	Sand Very coarse (2–1)	Sand Coarse (1–0.5)	Sand Medium (0.5–0.25)	Sand Fine (0.25–0.1)	Sand Very fine (0.1–0.05)	Silt (0.05–0.02)	Silt Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1 2A2 > 2 Pct.	2 – 19 (Pct. of < 76mm)	19 – 76 (Pct. of < 76mm)
		Pct. of < 2 mm																
0-1	A1		71.7	8.6	2.1[a]	2.5[a]	1.5[a]	4.7	8.9		44.2	39.2				2		
1-6	A2		75.2	12.1	1.3	1.1	0.7	2.2	7.4		51.3	32.7				7		
11-24	B2		66.9	22.4	1.6	0.9	0.5	1.4	6.3		46.9	27.2				10		
28-46	Bm		71.1	17.0	1.3	0.9	0.5	1.7	7.5		49.6	30.1				10		
46+	D		49.9	36.9	1.2	1.1	0.7	2.0	8.2		34.7	24.7				12		

Depth (In.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonates as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density 4A1e ⅓ bar g/cc	Bulk density 4A1h Oven dry g/cc	4D1 COLE	Water content 4B1c ⅓ bar Pct.	Water content 4B2 15 bar Pct.		4C1 WRD in/in		pH 8C1c (1:1) KCl	pH 8C1a (1:1) H_2O
0-1	5.0	0.180	28			1.2										4.4
1-6	1.53	0.081	19			1.5										4.6
11-24	0.23	0.031				2.6										4.4
28-46	0.13	0.013				2.7										4.4
46+	0.11	0.022				5.1										4.5

Depth (In.)	Extractable bases 5B1a 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC 8A3a Sum cations	6G1d Ext. Al			Ratios to clay CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																
0-1	2.2	0.7	tr.	0.3		13.7	16.9									19	
1-6	0.3	0.2	0.1	0.2		7.4	8.2									10	
11-24	0.2	0.2	0.1	0.2		9.1	9.8									7	
28-46	0.2	tr.	0.1	0.1		7.7	8.1									5	
46+	0.1	0.5	tr.	0.1		14.2	14.9									5	

Depth (In.)	Clay Fraction Analysis 7A1b-d Mt.	Chl.	Vm.	Mi	Int.	Qtz.	Kl.	Gibbsite	
	7A2 X-ray						7A3		

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

a Undecomposed organic matter in sand fraction.

USDA-SCS-HYATTSVILLE MD 1969

Soil Type: Dickson silt loam, undulating phase.
Soil No.: S54Tenn-16-10
Location: Coffee County, Tennessee. 0.8 mile west of Blanton's Chapel on Black Top Road. 50 yards west of concrete culvert and 25 feet north of black top road. Aerial photo 5G-110.
Vegetation and land use: Mixed hardwood forest.
Slope and land form: 3 percent.

Horizon and Beltsville Lab. No.	
O1, O2 Not Sampled	1 to 0 inches. Forest litter and leaf mold.
A1 551330	0 to 1 inch. Grayish brown (10YR 5/2) very friable silt loam; weak fine crumb structure.
A2 551331	1 to 6 inches. Light yellowish brown or yellow brown (10YR 6/4 - 5/4) very friable silt loam; weak fine to medium subangular blocky structure.
B1 Not Sampled	6 to 11 inches. Light yellowish brown or yellowish brown (10YR 6/4 - 5/4) very friable silt loam; weak medium to coarse angular blocky structure.
B2 551332	11 to 24 inches. Light yellowish brown or yellowish brown (10YR 6/4 - 5/4) (slightly paler than layer above) very friable silt loam; weak to moderate medium angular and subangular blocky structure.
B3 Not Sampled	24 to 28 inches. Mottled light yellowish brown, yellowish brown (10YR 6/4 - 5/4) and gray; weak to moderate medium angular and subangular blocky structure; brown concretions averaging about 5 mm. in diameter; common medium distinct mottles.
Bm 551333	28 to 46 inches. Mottled yellowish brown, yellow and gray, compact in places but breaks or crushes to friable silt loam with strong medium angular blocky to coarse platy structure; many medium prominent mottles.
D 551334	46 inches plus. Mottled yellow, gray, and red moderately cherty firm silty clay loam; strong medium to coarse angular blocky structure; many medium prominent mottles.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Dulac silt loam **LOCATION** Henderson County, Tennessee

SOIL NOS. S57Tenn-39-9 **LAB. NOS.** 7773-7780

DEPTH INCHES	HORIZON	3B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1 VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002	2A2 > 2 (>10mm)	TEXTURAL CLASS
0-7	Ap	0.4a	1.9a	2.1a	5.0a	6.3a	73.8	10.5	48.7	34.5	-	sil
7-14	B21	0.1a	1.0a	1.1a	1.8a	2.2a	68.2	25.6	30.5	40.9	-	sil
14-21	B22	0.1a	1.0a	1.1a	1.8a	2.3a	66.2	27.5	28.8	40.7	Tr.	sicl
21-32	B3m1	0.2a	1.4a	1.7a	3.1a	4.5a	63.3	25.8	32.0	37.7	-	sil
32-39	B3m2	0.2a	1.7a	2.4a	4.9a	7.6a	57.8	25.4	35.7	32.8	Tr.	sil
39-48	Du1	0.4a	2.5a	4.0a	7.9a	13.6a	47.0	24.6	40.1	25.5	Tr.	l
48-56	Du2	4.6b	5.0b	5.4b	8.5b	14.8b	25.8	35.9	30.5	15.1	4	cl
56-68	Du3	9.2b	8.4b	7.6a	9.1a	16.2a	15.0	34.5	27.4	8.5	5	scl

8C1 pH 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron Fe_2O_3%		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
6.4			0.49	0.048	10	1.5						
5.5			0.26	0.037	7	2.6						
4.7			0.18	0.035		3.1						
4.8			0.12	0.032		3.2						
4.9			0.11			3.4						
5.0			0.08			4.7						
5.0			0.13			12.2						
4.9			0.09			14.0						

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Bases	5A3a Sum Cations	8D5 Ca/Mg
←	milliequivalents per 100g. soil				→			← me/100g.	→	
5.4	3.8	0.7	2.8	<0.1	0.2	87	63	4.7	7.5	
9.0	3.7	2.6	5.3	0.1	0.3	74	56	6.7	12.0	1.4
11.5	1.3	4.3	9.8	0.1	0.3	52	38	6.0	15.8	0.3
11.8	0.3	3.9	10.7	0.1	0.3	39	30	4.6	15.3	
11.1	0.2	3.8	10.2	0.1	0.3	40	30	4.4	14.6	
10.1	0.1	3.7	9.0	0.4	0.2	44	33	4.4	13.4	
14.3	0.2	5.6	12.8	0.1	0.2	43	32	6.1	18.9	
16.0	0.1	5.3	15.4	0.2	0.3	37	28	5.9	21.3	

a. Common smooth and irregular light brown and black concr. (Fe-Mn?)
b. Many smooth and irregular light brown and black concr. (Fe-Mn?)

Described by E. C. Sease, Robbie Flowers, Wiley Mangrum, and Lewis Dungan.

Soil type: Dulac silt loam
Soil No. : S57Tenn-39-9
Date: May 20, 1957
Area: Henderson County, Tennessee
Location: About 15 miles east of Lexington near Crowell Chapel Church. About 150 feet west of church and 20 feet south of gravel road (see photo No. 2F-142).
Present land use: Cultivated field, corn in 1957.
Sampling party: E. C. Sease, Robbie Flowers, Wiley Mangrum, and Lewis Dungan.

Lincoln Lab. No.	Horizon	Depth	
7773	A_p	0-7 inches	Brown to dark brown (10YR 4/3) silt loam; weak fine granular structure; very friable; a little of the subsoil has recently been plowed into this layer and occurs in streaks; abrupt smooth boundary.
7774	B_{21}	7-14 inches	Brown to dark brown (7.5YR 4/4) silt loam; weak medium subangular blocky structure; friable; very few clay skins; clear smooth boundary.
7775	B_{22}	14-21 inches	Yellowish brown (10YR 5/4) to dark yellowish brown coarse silty clay loam; moderate medium subangular blocky structure; firm; more clay skins than above horizon; gradual smooth boundary.
7776	B_{3m1}	21-32 inches	Dark brown (7.5YR 4/4) with a few fine faint mottles of dark reddish brown (5YR 3/3) and pale brown (10YR 6/3) silt loam; moderate medium subangular and angular blocky structure; friable; many vertical clay skins; many soft dark brown (7.5YR 3/2) and black (7.5YR 2/0) concretions; gradual smooth boundary.
7777	B_{3m2}	32-39 inches	Mottled reddish brown (5YR 4/3), pale brown (10YR 6/3), and light gray (2.5Y 7/2); mottles are many, coarse, prominent; many soft dark brown concretions; silt loam; strong medium angular and subangular blocky structure; friable; many clay skins; gradual smooth boundary.
7778	D_{u1}	39-48 inches	Dark reddish brown (5YR 3/4) with many coarse prominent mottles and streaks of light gray (2.5Y 7/2) and strong brown (7.5YR 5/6); sandy clay; very weak coarse angular blocky structure; firm, friable when large peds are broken down; diffuse smooth boundary.
7779	D_{u2}	48-56 inches	Mottled dark reddish brown (2.5YR 3/4), gray (5Y 5/1), and dark brown (7.5YR 4/4); mottles are many, large, prominent; sandy clay; massive; firm; gradual smooth boundary.
7780	D_{u3}	56-68 inches	Yellowish red (2.5YR 4/6) with a few coarse prominent mottles of light gray (2.5Y 7/2); sandy clay; massive; firm; micaceous.

Remarks: Colors given are for moist soil unless otherwise stated. This is the eroded gently sloping phase of Dulac.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Dulac silt loam **LOCATION** Henderson County, Tennessee

SOIL NOS. S57Tenn-39-10 **LAB. NOS.** 7781-7787

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 0.2-0.02	0.02-0.002	2A2 > 2	TEXTURAL CLASS
0-6	Ap	0.8a	2.4a	2.4a	4.9a	6.4a	75.9	7.2	54.1	30.8	Tr.	sil
6-13	B21	0.3a	1.2a	1.0a	1.6a	2.3a	70.9	22.7	32.0	42.0	Tr.	sil
13-18	B22	0.4a	1.1a	0.9a	1.6a	2.3a	64.4	29.3	27.9	39.6	Tr.	sicl
18-22	B3m1	0.4a	1.4a	1.3a	2.3a	3.0a	62.7	28.9	29.4	37.5	Tr.	sicl
22-31	B3m2	0.6a	2.2a	2.2a	4.1a	6.0a	56.6	28.3	34.7	30.1	-	sicl
31-39	B3m3	1.0a	2.9a	2.9a	5.1a	8.0a	52.3	27.8	33.4	29.5	-	cl/sicl
39-51	D1	1.1a	4.2a	4.7a	8.2a	13.4a	37.8	30.6	30.7	24.8	-	cl

8C1a pH 1:1	1:5	1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron Fe_2O_3%		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
5.4			0.49	0.062	8	1.4						
5.0			0.27	0.041	6	2.6						
4.9			0.21	0.035		3.3						
4.9			0.21	0.039		3.3						
5.0			0.17	0.028		3.3						
5.1			0.08			3.5						
5.0			0.05			8.4						

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg		
←	milliequivalents per 100g. soil				→			← me/100g →				
4.4	1.5	0.6	3.2	<0.1	0.2	52	42	2.3	5.5			
8.3	3.1	1.3	6.9	0.1	0.2	57	40	4.7	11.6	2.4		
12.4	2.2	2.6	11.5	0.2	0.2	42	31	5.2	16.7	0.8		
13.4	1.5	3.0	12.8	0.2	0.3	37	28	5.0	17.8	0.5		
11.7	0.8	2.9	12.7	0.2	0.2	35	24	4.1	16.8			
13.0	0.6	3.4	12.4	0.3	0.2	35	27	4.5	16.9			
16.0	0.6	4.5	15.7	0.4	0.2	36	27	5.7	21.4			

a. Common smooth and irregular light brown concr. (Fe-Mn?)

Described by E. C. Sease, Robbie Flowers, Wiley Mangrum, and Lewis Dungan.

Soil type: Dulac silt loam
Soil No. : S57Tenn-39-10
Date: May 21, 1957
Area: Henderson County, Tennessee
Location: Two miles northeast of Sardis on Pipkin farm, 200 yards east of gravel road and 250 yards southeast of farmhouse in sericea field on ridgetop (see photo No. 2F-100).
Present land use: Sericea field which in 1956 was in cotton.
Sampling party: E. C. Sease, Robbie Flowers, Wiley Mangrum, and Lewis Dungan.

Lincoln Lab. No.	Horizon	Depth	
7781	A_p	0-6 inches	Yellowish brown (10YR 5/4) silt loam; weak fine granular and medium subangular blocky structure; very friable; abrupt smooth boundary.
7782	B_{21}	6-13 inches	Dark yellowish brown (10YR 4/4) to brown to dark brown (7.5YR 4/4) fine silt loam; moderate medium subangular blocky structure; firm; very few clay skins; gradual smooth boundary.
7783	B_{22}	13-18 inches	Dark yellowish brown (10YR 4/4) to brown to dark brown (7.5YR 4/4) coarse silty clay loam; moderate medium subangular blocky structure; firm; clay skins present; gradual smooth boundary; old root channels through this layer.
7784	B_{3m1}	18-22 inches	Mottled dark yellowish brown (10YR 4/4 and 10YR 3/4), and pale brown (10YR 6/3); mottles are common, fine, faint; fine silt loam; weak medium subangular blocky structure; firm; a few soft dark brown concretions; gradual smooth boundary.
7785	B_{3m2}	22-31 inches	Mottled reddish brown (5YR 4/3), light brownish gray (2.5Y 6/2), and yellowish red (5YR 5/8); mottles are many, coarse, prominent; silt loam; platy structure at top of large columns; columns break to strong medium angular blocks; very firm; many clay skins and dark brown and black concretions; streaks of gray silt and clay between columns; gradual smooth boundary.
7786	B_{3m3}	31-39 inches	Reddish brown (5YR 4/3) with many coarse prominent mottles of light brownish gray (2.5Y 6/2) and brown to dark brown (7.5YR 4/4); silt loam; very weak coarse angular blocky structure; abrupt smooth boundary; many clay skins and dark brown concretions.
7787	D_1	39-51 inches	Dark red (2.5YR 3/6) with many coarse prominent mottles and streaks of strong brown (7.5YR 5/8), dark gray (2.5Y 4/0), and light gray to gray (2.5Y 6/0); sandy clay; massive; very firm.

Remarks: Colors given are for moist soil unless otherwise stated. This is the eroded gently sloping phase of Dulac.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Dunmore silt loam SOIL Nos. S53Tenn-5-1 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53695-53699

Depth (in.)	Horizon	1B1b Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (< 0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: (0.05-0.02)	Silt: Int. III (0.02-0.002)	Int. II (0.2-0.02)	(2-0.1)			Coarse fragments 2A2 > 2 Pct.	2-19	19-76
		Pct. of < 2 mm															Pct. of < 76mm	
0-7	Ap	39.7	42.2	18.1	1.4	3.0	8.9	17.8	8.6	12.4	29.8	30.3	31.1			5		
7-13	B1	16.6	25.2	58.2	0.3	1.1	3.6	7.2	4.4	6.0	19.2	14.2	12.2			tr.		
13-22	B21	9.5	16.3	74.2	0.2	0.5	1.3	2.8	4.7	3.4	12.9	9.9	4.8			-		
22-28	B22	8.6	15.7	75.7	0.1	0.2	0.5	1.4	6.4	3.1	12.6	10.4	2.2			-		
28-50+	C	6.7	18.6	74.7	0.0	0.2	0.3	1.4	4.8	4.3	14.3	10.0	1.9			-		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-7	1.25																	5.6
7-13	0.32																	5.2
13-22	0.26																	5.3
22-28	0.18																	5.2
28-50	0.14																	5.1

Depth (in.)	Extractable bases 5B1a: 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-7	1.0	0.3	tr.	0.1	1.4	5.9	7.3									19	
7-13	1.6	0.5	tr.	0.2	2.3	7.1	9.4									24	
13-22	2.1	0.3	tr.	0.2	2.6	7.1	9.7									27	
22-28	1.9	1.5	tr.	0.2	3.6	8.6	12.2									30	
28-50	0.9	0.5	tr.	0.2	1.6	10.5	12.1									13	

Depth (in.)

WASH-900-BEVERTSVILLE, MD. 1966

Soil Type: Dunmore silt loam
Soil No.: 853Tenn-5-1
Location: Blount County, Tennessee. 1 mile northeast of Providence.
Vegetation and land use: Unimproved pasture. Chiefly brocmsedge and lespedeza.

Horizon and Beltsville Lab. No.	
Ap 53695	0 to 7 inches. Brown (10YR 5/3) to yellowish brown (10YR 5/4) friable silt loam; moderate medium granular structure. Rapid gradation to;
B1 53696	7 to 13 inches. Yellowish red (5YR 5/8) firm silty clay with streaks of yellowish brown extending from surface soil. Well developed medium blocky structure. Structural interfaces coated with brownish yellow. Rapid gradation to;
B21 53697	13 to 22 inches. Yellowish red very firm silty clay; strongly developed medium to coarse blocky structure.
B22 53698	22 to 28 inches. Yellowish red (5YR 5/8) very firm silty clay; strongly developed medium to coarse blocky structure. Some faint and distinct brownish yellow mottles.
C 53699	28 to 50 inches plus. Yellowish red (5YR 5/8) very firm silty clay. Numerous prominent brownish yellow mottles. Strongly developed medium to coarse blocky structure.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Dunmore silt loam SOIL Nos. S53Tenn-5-2 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53700-53704

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	3A1 Int. II (0.2–0.02)	(2–0.1)			Coarse fragments 2A2 > 2	2 – 19	19 – 76
		Pct. of < 2 mm														Pct.	Pct. of < 76mm	
0-6	Ap	32.8	51.0	16.2	6.7	8.2	4.9	5.6	7.4	18.3	32.7	28.8	25.4			28		
6-10	A3-B1	17.3	53.3	29.4	2.4	4.1	2.6	3.2	5.0	13.3	40.0	20.2	12.3			10		
10-18	B21	5.1	21.5	73.4	0.7	0.9	0.6	0.9	2.0	4.6	16.9	7.1	3.1			tr.		
18-26	B22	4.8	18.6	76.6	0.1	0.6	0.5	0.9	2.7	4.5	14.1	7.9	2.1			-		
26-50	C	10.4	21.8	67.8	0.4	2.5	1.6	1.9	4.0	5.9	15.9	11.1	6.4			-		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-6	0.89																	5.0
6-10	0.41																	5.2
10-18	0.24																	5.0
18-26	0.14																	5.0
26-50	0.08																	5.0

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-6	0.5	0.2	tr.	0.2	0.9	5.5	6.4									14	
6-10	0.8	0.3	tr.	0.1	1.2	3.8	5.0									24	
10-18	1.6	0.9	tr.	0.2	2.7	13.8	16.5									16	
18-26	0.6	0.6	tr.	0.2	1.4	16.9	18.3									8	
26-50	0.2	0.2	tr.	0.2	0.6	14.2	14.8									4	

Depth (in.)

Soil Type: Dunmore silt loam
Soil No.: S53Tenn-5-2
Location: Blount County, Tennessee. 1 mile northeast of Prospect.
Vegetation and land use: Idle. Weeds and some lespedeza. Corn last year.

Horizon and Beltsville Lab. No.	
Ap 53700	0 to 6 inches. Yellowish brown (10YR 5/4) friable silt loam; weak medium granular structure.
A3 & B1 53701	6 to 10 inches. Strong brown (7.5YR 5/8) with streaks of yellowish brown moderately friable silty clay loam. Yellowish brown streaks are chiefly along old root channels. Moderately developed fine and medium subangular blocky structural aggregates. Sharp gradation to;
B21 53702	10 to 18 inches. Yellowish red (5YR 5/8) very firm silty clay; strongly developed medium to coarse blocky structure.
B22 53703	18 to 26 inches. Yellowish red (5YR 5/8), faintly mottled with brownish yellow, very firm silty clay. Strongly developed coarse subangular blocky structure.
C 53704	26 to 50 inches plus. Yellowish red (5YR 5/8), with numerous distinct brownish yellow mottles, very firm silty clay. Very strongly developed coarse subangular blocky structure.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Hardin County, Tennessee SOIL TYPE Egam silty clay loam

LAB NOS. 12335 - 12343 SOIL NOS. S59Tenn-36-4

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12335	0-5	Ap1	<0.1	0.3a	0.2a	0.9a	1.5a	58.2	38.9	12.7	47.6	-	sicl
12336	5-8	Ap2	<0.1	0.2a	0.2a	1.0a	1.9a	52.8	43.9	12.2	43.2	-	sic
12337	8-13	A1b	0.6	1.3	0.7b	1.0b	1.6a	51.5	43.3	13.1	40.6	-	sic
12338	13-22	C1	<0.1	0.1a	0.1a	1.3a	1.8a	50.1	46.6	13.4	39.4	-	sic
12339	22-33	C2	<0.1	0.2a	0.3a	6.4b	3.1b	46.6	43.4	16.9	37.0	-	sic
12340	33-49	C3	<0.1	<0.1	0.1b	1.1b	5.0b	52.4	41.4	24.0	34.0	-	sic
12341	49-58	Du1	<0.1	<0.1	0.1c	5.7	18.6	44.7	30.9	43.7	24.5	-	cl
12342	58-75	Du2	<0.1	<0.1	0.3c	13.4	25.8	34.5	26.0	54.7	17.0	-	l
12343	75-91	Du3	<0.1	0.1c	0.5c	31.6	22.4	23.7	21.7	57.4	12.1	-	scl

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12335	5.7			1.36	0.134	10	3.5	21.1	1.50	24.5	1.47	1.58	16.5
12336	5.1			1.03	0.091	11	3.8	23.8	1.52	24.4	1.50	1.61	19.1
12337	5.3			1.16	0.090	13	3.7	22.2	1.57	24.7	1.51	1.66	18.4
12338	4.9			0.98	0.093	10	3.9	24.2	1.55	25.1	1.52	1.67	19.9
12339	5.1			1.03	0.088	12	3.6	21.2	1.63			1.72	18.8
12340	5.2			0.60			3.7	21.0	1.63			1.72	17.5
12341	5.3			0.38			2.9						13.6
12342	5.2			0.30			2.6						11.5
12343	5.4			0.20			2.2						9.8

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5C1 Base Sat. % NH_4OAc	5C3 Base Sat. % Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g	8D3 Ca/Mg	
		milliequivalents per 100g soil										
12335	21.6	14.1	1.5	9.8	0.1	0.2	74	62	15.9	25.7	9.4	
12336	22.6	9.6	1.3	19.7	0.1	0.2	50	36	11.2	30.9	7.4	
12337	23.8	13.8	1.4	17.8	0.1	0.2	65	46	15.5	33.3	9.8	
12338	22.6	9.2	1.3	21.8	0.1	0.2	48	33	10.8	32.6	7.1	
12339	22.7	11.5	1.5	18.2	0.1	0.2	58	42	13.3	31.5	7.7	
12340	19.1	11.4	1.3	13.8	0.1	0.2	68	48	13.0	26.8	8.8	
12341	15.4	9.0	1.0	11.5	0.1	0.2	67	47	10.3	21.8	9.0	
12342	13.5	7.0	1.0	10.8	0.1	0.1	61	43	8.2	19.0	7.0	
12343	10.9	6.1	0.8	8.1	<0.1	0.1	64	46	7.0	15.1		

a. Many Fe-Mn? bearing aggregates.
b. Few Fe-Mn? bearing aggregates.
c. Common mica fragments.

Soil type: Egam silty clay loam

Soil Nos. : S59Tenn-36-4

Location: Hardin County, Tennessee, 3½ miles northwest of Savannah, on Coffee Landing Road, on J. D. Dodd farm, half way between Tennessee River and Coffee Landing Road. Photo AIK-6F-164(1955).

Vegetation and Use: Lespedeza and Johnson grass pasture.

Slope and Land Form: Nearly level to gently sloping bottom land, 2-3 percent slope. Narrow low lying ridge about 50 yards wide. Small shallow slough on the east and west sides. Elevation 375 ft.

Drainage and Permeability: Moderately well to well drained. Surface runoff slow. Permeability slow.

Parent Material: Sediments derived largely from uplands of limestone origin.

Samples collected by: Edwood Pedersen, George Phibbs, T. R. Love, W. H. Proffitt, E. C. Sease - October 20, 1959.

Profile described by: W. H. Proffitt, T. R. Love. and E. C. Sease - October 20,1959.

Horizon and Lincoln Lab. No.	Depth	
Ap1 12335	0 to 5 inches	Dark brown (10YR 3/3) silty clay loam; moderate fine and medium granular structure; friable to firm; many small roots; clear smooth boundary.
Ap2 12336	5 to 8 inches	Dark brown (10YR 3/3) to brown (10YR 4/3 silty clay loam; weak medium and fine subangular blocky structure; firm; common small roots; clear smooth boundary.
A1b 12337	8 to 13 inches	Very dark grayish brown (10YR 3/2) silty clay, with few fine faint mottles of dark brown (10YR 3/3) and dark grayish brown (10YR 4/2); moderate medium angular and subangular blocky structure; firm; slightly plastic when wet; common small roots; clear smooth boundary.
C1 12338	13 to 22 inches	Dark brown (10YR 3/3) interior of peds and dark grayish brown (10YR 4/2) on ped faces, silty clay or clay; moderate to strong medium prismatic structure breaking into strong medium angular blocky structure; firm; few small roots; few tubular pores; diffuse smooth boundary.
C2 12339	22 to 33 inches	Very dark grayish brown (10YR 3/2) silty clay or clay interior of peds; dark grayish brown (10YR 4/2) on ped surfaces; strong medium prismatic structure breaking to strong medium angular blocky structure; firm to very firm; few small roots; few small holes or pores; clear wavy boundary.
C3 12340	33 to 49 inches	Dark brown (10YR 3/3) silty clay or clay, with few fine faint mottles of grayish brown (10YR 5/2) and brown (10YR 4/3); moderate medium prismatic structure breaking into moderate medium angular and subangular blocky structure; firm, common small holes or pores; clear smooth boundary.
Da1 12341	49 to 58 inches	Brown to dark brown (10YR 4/3-3/3) silty clay loam; with common fine faint light brownish gray (10YR 6/2) and grayish brown (10YR 5/2) mottles; weak coarse prismatic structure; friable to firm; grayish brown (10YR 5/2) and dark grayish brown (10YR 4/2) silt coatings on peds; clear smooth boundary.
Da2 12342	58 to 75 inches	Brown to dark brown (10YR 4/3-3/3) clay loam or loam; common fine and medium faint grayish brown (10YR 5/2) to light brownish gray (10YR 6/2) mottles; massive, friable; common small pores 0.25 mm to 0.50 mm in diameter; clear smooth boundary.
Da3 12343	75 to 91 inches	Brown to dark brown (10YR 4/3-3/3) fine sandy loam with common fine and medium faint mottles of light brownish gray (10YR 6/2) massive; very friable; common mica flakes and a few black specks 0.5 mm in diameter.

Remarks: Colors given are for moist soil. An occasional gravel ranging from 1 to 5 cm. in diameter distributed throughout the profile. Roots below the Ap1 are chiefly along the structure breaks.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Hardin County, Tennessee SOIL TYPE Egam silty clay loam

LAB NOS. 12359 - 12367 SOIL NOS. S59Tenn-36-7

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	3A1 INTERNATIONAL III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12359	0-7	Ap	<0.1	<0.1	0.1a	0.5a	2.2b	64.6	32.6	21.8	45.3	-	sicl
12360	7-15	A1b1	<0.1	<0.1	<0.1	0.7c	3.5a	54.8	41.0	20.4	38.4	-	sic
12361	15-22	A1b2	<0.1	<0.1	0.1c	0.8c	5.9b	55.0	38.2	27.1	34.4	-	sicl
12362	22-31	C1	<0.1	<0.1	0.1c	0.8b	9.1	53.9	36.1	32.7	30.9	-	sicl
12363	31-42	C2	<0.1	<0.1	<0.1	0.4b	4.9	55.1	39.6	26.7	33.6	-	sicl/sic
12364	42-51	C3	<0.1	<0.1	<0.1	0.4b	3.4	55.3	40.9	23.5	35.5	-	sic
12365	51-70	C4	<0.1	<0.1	<0.1	0.3b	3.2	55.2	41.3	20.7	37.9	-	sic
12366	70-86	C5	<0.1	<0.1	0.1b	0.4b	2.4	55.0	42.1	19.9	37.8	-	sic
12367	86-96+	C6	<0.1	0.1	0.1d	0.3	4.2	56.8	38.5	26.9	34.3	-	sicl

	8C1a pH H_2O 1:1			6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Irons Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12359	5.9			1.57	0.140	11	3.0	22.7	1.47	25.6	1.44	1.55	13.4
12360	5.5			1.43	0.119	12	3.4	23.7	1.53	24.1	1.52	1.67	17.4
12361	5.7			1.08	0.091	12	3.3	20.2	1.63	20.7	1.62	1.73	16.3
12362	5.6			0.79	0.070	11	3.2	20.0	1.64	21.0	1.62	1.74	15.6
12363	5.5			0.76			3.4	21.2	1.62	22.5	1.59	1.72	16.9
12364	5.4			0.69			3.6	21.7	1.61	23.7	1.57	1.71	17.3
12365	5.4			0.65			3.5	21.4	1.61	23.8	1.57	1.69	18.2
12366	5.4			0.60			3.7						18.1
12367	5.5			0.44			3.6						16.7

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5C1 Base Sat. % NH_4OAc	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g	8D3 Ca/Mg
		milliequivalents per 100g soil									
12359	18.9	13.6	1.8	10.4	<0.1	0.2	82	60	15.6	26.0	7.6
12360	24.7	16.5	1.6	15.1	<0.1	0.2	74	55	18.3	33.4	10.3
12361	22.8	15.6	1.6	12.9	<0.1	0.2	76	57	17.4	30.3	9.8
12362	20.9	14.3	1.3	11.1	<0.1	0.2	76	59	15.8	26.9	11.0
12363	22.4	15.0	1.4	12.6	0.1	0.2	74	57	16.7	29.3	10.7
12364	21.1	14.5	1.5	12.6	0.1	0.2	77	56	16.3	28.9	9.7
12365	21.6	14.3	1.4	12.6	0.1	0.2	74	56	16.0	28.6	10.2
12366	21.2	15.1	1.4	12.2	0.1	0.2	79	58	16.8	29.0	10.8
12367	20.2	14.2	1.2	10.9	0.1	0.2	78	59	15.7	26.6	11.8

a. Common Fe-Mn? bearing aggregates.
b. Few Fe-Mn? bearing aggregates.
c. Many Fe-Mn? bearing aggregates.
d. Trace mica fragments.

Soil type: Egam silty clay loam

Soil No. : 859Tenn-36-7

Location: Hardin County, Tennessee, 2.3 miles west of Pickwick Dam, on Churchwell farm 50 yards north of farm road. Photo: AIK-6F-124, (1955)

Vegetation and Use: Row crop - corn.

Slope and Land Form: Nearly level about 1 percent slope slightly concave on large broad flat area in Tennessee River flood plain. Elevation 383 feet.

Drainage and Permeability: Moderately well to well drained. Surface runoff slow. Permeability slow.

Parent Material: Tennessee River sediments derived largely from uplands of limestone origin.

Samples collected by: Edwood Pedersen, George Phibbs, T. R. Love, W. H. Proffitt, E. T. Lampley; Bobby Hinton; E. C. Sease, and C. B. Breinig. October 21, 1959.

Profile described by: W. H. Proffitt, E. C. Sease and T. R. Love. October 21, 1959.

Morison and Lincoln Lab. No.	Depth	
Ap 12359	0 to 7 inches	Very dark grayish brown (10YR 3/2) silty clay loam; dark brown (10YR 3/3) when crushed; weak fine granular structure; very friable to friable; common roots; abrupt wavy boundary. 5 to 9 inches thick.
Alb1 12360	7 to 15 inches	Very dark grayish brown (10YR 3/2) silty clay; dark gray (10YR 4/1) to very dark gray (10YR 3/1) on ped faces; moderate fine and medium angular and subangular blocky structure; firm to very firm, slightly sticky and plastic, hard; few patchy clay films; few small roots; common small pores; gradual smooth boundary. 6 to 9 inches thick.
Alb2 12361	15 to 22 inches	Very dark grayish brown (10YR 3/2) silty clay; dark gray (10YR 4/1) on ped surfaces; moderate fine and medium angular and subangular blocky structure; firm; patchy clay films; few small roots; few fine pores; gradual wavy boundary. 7 to 10 inches thick.
C1 12362	22 to 31 inches	Dark brown (10YR 3/3)silty clay; peds coated with dark gray (10YR 4/1) and dark grayish brown (10YR 4/2); moderate medium prismatic structure breaking into moderate medium angular blocky structure; firm; patchy clay films;few small roots and root channels; few small pores; diffuse smooth boundary.
C2 12363	31 to 42 inches	Dark brown (10YR 3/3) silty clay; moderate medium prismatic breaking into moderate medium angular blocky structure; firm; peds coated with patchy clay films of dark grayish brown (10YR 4/2); few roots and root channels; common fine pores; diffuse smooth boundary.
C3 12364	42 to 51 inches	Brown to dark brown (10YR 4/3-3/3) silty clay; weak medium prismatic structure breaking into moderate medium angular blocky structure; firm; dark grayish brown (10YR 4/2) patchy thin clay films on ped faces; few roots and channels; common fine pores; diffuse smooth boundary.
C4 12365	51 to 70 inches	Dark brown (10YR 4/3) silty clay, with few fine faint light brownish gray (10YR 6/2) and dark yellowish brown (10YR 3/4) mottles; weak medium prismatic breaking into weak medium angular blocky structure;firm;peds coated with dark grayish brown (10YR 4/2) patchy clay films; few small pores; few concretions 2 to 3 mm. in diameter.
C5 12366	70 to 86 inches	Dark brown (7.5YR 4/4) silty clay; few fine faint mottles of light brownish gray (10YR 6/2) and grayish brown (10YR 5/2); massive; firm; few small black concretions and segregations.
C6 12367	86 to 96 inches plus	Dark brown (7.5YR 4/4) to dark yellowish brown (10YR 4/4) silty clay loam; few fine faint grayish brown (10YR 5/2) mottles; massive; firm.

Remarks: Colors given are for moist soil.

SCS-A21
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Etowah silt loam SOIL No. S53Tenn-5-21 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53772-53774

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: (0.05–0.02)	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)			Coarse fragments 2A2 > 2 Pct.	2 – 19	19 – 76
		Size class and particle diameter (mm) — Pct. of < 2 mm										3A1				Pct.	Pct. of < 76mm	
0-9	Ap	49.7	29.2	21.1	1.4	3.4	13.0	26.6	5.3	7.9	21.3	25.6	44.4			tr.		
9-16	B1	40.8	30.7	28.5	0.5	2.3	10.3	22.6	5.1	8.1	22.6	24.2	35.7			tr.		
16-50	B2	39.2	24.5	36.3	0.9	2.6	10.1	21.0	4.6	6.2	18.3	21.1	34.6			tr.		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-9	1.10																	6.1
9-16	0.37																	5.6
16-50	0.11																	5.1

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-9	1.9	0.5	tr.	0.1	2.5	5.8	8.3									30	
9-16	1.3	0.4	tr.	tr.	1.7	5.8	7.5									23	
16-50	0.8	0.3	tr.	tr.	1.1	6.1	7.2									15	

Depth (in.)

Soil Type: Etowah silt loam
Soil No.: 853Tenn-5-21
Location: Blount County, Tennessee. 1/2 mile north of Mt. Tabor.
Vegetation and land use: Small grain. Oats.

Horizon and Beltsville Lab. No.	
Ap 53772	0 to 9 inches. Dark reddish brown (5YR 3/4) friable gritty silt loam.
B1 53773	9 to 16 inches. Reddish brown (2.5YR 4/4) friable clay loam; weak fine blocky structure.
B2 53774	16 to 50 inches. Reddish brown (2,5YR 4/4) to red (2.5YR 4/6) friable clay loam to silty clay loam; weakly developed fine to medium blocky structure. Numerous black specks or stains below 32 inches.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Etowah silt loam SOIL Nos. 853Tenn-5-23 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53777-53780

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)			Coarse fragments 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct. of < 78mm	
0-7	Ap	13.7	70.1	16.2	3.5	3.4	2.0	2.9	1.9	11.7	58.4	15.1	11.8			14		
7-19	B1	9.0	64.8	26.2	2.5	2.0	0.9	1.8	1.8	11.5	53.3	14.3	7.2			14		
19-39	B2	8.2	62.1	29.7	2.5	1.7	0.8	1.5	1.7	11.9	50.2	14.5	6.5			20		
39-54	C	8.8	57.5	33.7	2.7	1.7	0.9	1.6	1.9	10.4	47.1	13.2	6.9			11		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct		Bulk density g/cc	g/cc	g/cc		Water content Pct	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-7	2.31																	7.0
7-19	0.37																	6.8
19-39	0.17																	5.0
39-54	0.12																	5.0

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-7	5.8	0.2	tr.	0.1	6.1	4.2	10.3									59	
7-19	2.3	0.1	tr.	0.1	2.5	3.5	6.0									42	
19-39	0.6	0.3	tr.	0.3	1.2	7.4	8.6									14	
39-54	0.6	0.1	tr.	tr.	0.7	7.8	8.5									8	

Depth (in.)				

Soil Type: Etowah silt loam
Soil No.: S53Tenn-5-23
Location: Blount County, Tennessee. 4-1/2 miles south of Kiser.
Vegetation and land use: Idle. Sprouts and weeds.

Horizon and Beltsville Lab. No.	
Ap 53777	0 to 7 inches. Dark brown (7.5YR 3/2) very friable silt loam.
B1 53778	7 to 19 inches. Reddish brown (5YR 4/4) friable silt clay loam; weak fine blocky structure. Gradual gradation to;
B2 53779	19 to 39 inches. Yellowish red (5YR 4/6) or reddish brown (5YR 4/4) friable silty clay loam; moderate fine blocky structure.
C 53780	39 to 54 inches. Yellowish red (5YR 4/8) or red (2.5YR 4/8) moderately friable silty clay loam. A few faint yellowish brown mottles, and numerous black specks and stains. Moderate medium blocky structure.

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Fairmount silty clay loam **LOCATION** Loudon County, Tennessee

SOIL NOS. S58Tenn-53-7 **LAB. NOS.** 7853-7856

DEPTH INCHES	HORIZON	1B1a PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-1	A11	3.0a	1.4a	0.5a	0.8a	1.0a	37.7	55.6	9.6	29.5	1	c
1-6½	A12	3.8a	1.9a	0.9a	1.3a	1.3a	42.2	48.6	9.6	34.5	4	sic
6½-11	A3	2.8a	1.2a	0.6a	1.2a	1.2a	43.8	49.2	9.3	36.3	3	sic
11-15	B	1.0a	1.9a	0.7a	2.9a	3.3a	46.7	43.5	13.2	38.5	3	sic

DEPTH INCHES	8C1a pH 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3% 6C1a		6E1a $CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
0-1	7.2			8.21	0.497	16	4.2		4				25.8
1-6½	7.6			4.38	0.339	13	4.7		7				22.8
6½-11	7.5			2.96	0.201	15	4.9		4				22.6
11-15	7.7			2.39	0.150		4.7		8				22.2

DEPTH INCHES	5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS Ca	602b Mg	6H1a H	6P2a Na	5B1a 602a K	BASE SAT. % NH_4Ac EXCH.	Base Sat. % on Sum Cations	5B1a Sum Ext. Bases me/100g	Sum Ext. Cations			
	← milliequivalents per 100g. soil →												
0-1	39.6		2.3	5.7	<0.1	0.8							
1-6½	32.4		1.8	3.8	<0.1	0.7							
6½-11	35.7		1.0	4.2	<0.1	0.5							
11-15	37.2		1.2	3.3	<0.1	0.3							

a. Few smooth black to brown concr. (Mn-Fe?) Also, common calcareous fragments.

Soil type: Fairmount silty clay loam
Soil No. : S58Tenn-53-7
Location: Loudon County, Tennessee; three miles north of Morgantown, Tennessee; elevation about 900 feet. (Field Sheet ANU-IL-30.)
Topography: The sampling site is on a 5-percent slope which is dissected by drainage ways parallel to the slope. The ridge thus formed between two drainage ways is several hundred feet wide at the sampling site.
Physiography: Residual material from argillaceous limestone.
Vegetation: Poor stand of second growth oak, pine, and poplar.
Sampled by: R. H. Jordan and Klaus W. Flach, April 10, 1958.
Described by: Klaus W. Flach.

Horizon and Lincoln Lab. Number	
01	1/2 to 0 inch. Black, partly decomposed leaves and other plant residues; some worm casts.
A11 7853	0 to 1 inch. Very dark gray (10YR 3/1) silty clay loam; strong fine granular structure; loose; gradual and smooth boundary.
A12 7854	1 to 6½ inches. Very dark grayish brown (10YR 3/2) silty clay loam; strong very fine subangular blocky structure; friable; sticky; gradual and wavy boundary.
A3 7855	6½ to 11 inches. Very dark grayish brown (10YR 3/2 to 2.5Y 3/2) on the faces of peds with dark grayish brown (10YR 4/2) interiors; silty clay loam; strong fine and medium blocky to subangular blocky structure; friable; gradual and smooth boundary.
B 7856	11 to 15 inches. Dark grayish brown (10YR 4/2) silty clay loam; moderate to strong fine and very fine subangular to angular blocky structure; friable; abrupt and irregular boundary.
D	15 inches plus. Argillaceous limestone; within the excavation the dimensions of which are about 2 by 3 feet, the limestone lies almost flat; the maximum difference in elevation is about 1 inch.

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Fairmount silty clay loam **LOCATION** Loudon County, Tennessee

SOIL NOS. S58Tenn-53-8 **LAB. NOS.** 7857-7859

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-4½	A1	0.4a	0.8a	0.5b	0.8b	2.6b	46.4	48.5	21.5	27.9	Tr.	sic
4½-9	A3	0.2a	0.3a	0.4b	0.6b	2.4b	41.9	54.2	19.3	25.3	-	sic
9-14	B	0.1b	0.2b	0.2b	0.4b	2.4b	32.6	64.1	14.3	20.9	-	c

8C1a pH 1:1	pH 1:5	pH 1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3% 6C1a		6E1a $CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
6.8			3.34	0.234	14	3.6		<1				19.4
6.6			1.91	0.139	14	4.0		<1				19.7
6.5			1.27	0.083	15	4.8		<1				22.8

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat.% on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g	8D3 Ca/Mg		
←	milliequivalents per 100g. soil				→							
30.4	25.3	2.7	7.0	<0.1	0.4	93	80	28.4	35.4	9.4		
29.5	25.1	2.8	7.0	<0.1	0.3	96	80	28.2	35.2	9.0		
34.2	31.0	3.5	7.5	<0.1	0.3		82	34.8	42.3	8.8		

a. Common smooth brown to black concr. (Fe-Mn?)
b. Few smooth brown to black concr. (Fe-Mn?)

Soil type: Fairmount silty clay loam
Soil Nos. : S58Tenn-53-8
Location: Loudon County, Tennessee; two miles south of Centerville, Tennessee; elevation about 920 feet. (Field Sheet AMU-IL-30.)
Topography: The sampling site is on the almost level narrow crest of a ridge; at the site, the crest is about 80-feet wide and has a slope of 5 percent. There are common exposures of olive gray argillaceous limestone.
Physiography: Residual material from argillaceous limestone.
Vegetation: Red oak, juniper, Virginia pine, and hickory; the oldest trees are about 50 years old.
Sampled by: R. H. Jordan and Klaus W. Flach, April 10, 1958.
Described by: Klaus W. Flach.

Horizon and Lincoln Lab. Number	
O1	½ to 0 inch. Black, partly decomposed organic material; worm casts are common.
A1 7857	0 to 4½ inches. Dark gray (10YR 4/1) silty clay loam; moderate fine granular structure; loose; gradual and smooth boundary.
A3 7858	4½ to 9 inches. Dark gray (10YR 4/1) on surfaces of peds with brown to strong brown (7.5YR 5/4 to 5/6) interiors; clay; weak to moderate fine angular blocky to subangular blocky structure; friable; gradual and wavy boundary.
B 7859	9 to 14 inches. Dark grayish brown (10YR 4/2 to 2.5Y 4/2) surfaces of peds with brown to strong brown (7.5YR 5/5) interiors; clay; weak to moderate fine blocky to subangular blocky structure; abrupt and irregular boundary.
D	14 inches plus. Olive gray argillaceous limestone; effervesces with HCl.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Falaya silt loam **LOCATION** Henderson County, Tennessee

SOIL NOS. S57Tenn-39-8 **LAB. NOS.** 7768-7772

DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002	2A2 > 2	TEXTURAL CLASS
		PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent) 3A1										
0-12	Ap	0.1	0.2	0.2a	1.7a	12.5a	67.4	17.9	43.7	37.6	Tr.	sil
12-24	Cg1	<0.1	0.3	0.4a	2.1a	17.1a	65.5	14.6	53.7	30.5	-	sil
24-36	Cg2	<0.1	0.3	0.4a	1.5a	18.4a	66.7	12.7	59.0	27.2	-	sil
36-48	Cg3	0.1	0.4	0.3a	2.1a	25.2a	60.7	11.2	63.7	24.0	-	sil
48-60	Cg4	0.1	0.4	0.3a	3.3a	23.4a	63.1	9.4	61.8	27.5	Tr.	sil

8C1a pH 1:1	pH 1:5	pH 1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron Fe_2O_3%		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
5.4			0.96	0.099	10	1.4						
5.4			0.29	0.043	7	1.2						
5.2			0.23			1.1						
5.5			0.21			0.9						
5.8			0.21			1.0						

5A1a CATION EXCHANGE CAPACITY NH_4Ac	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5H1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg		
	EXTRACTABLE CATIONS 5B1a							← me/100g →				
←		milliequivalents per 100g. soil			→							
10.5	5.7	1.5	6.5	0.1	0.3	72	54	7.6	14.1	3.8		
8.4	5.1	1.2	4.9	0.2	0.1	78	57	6.6	11.5	4.2		
7.8	4.5	1.3	4.5	0.5	0.1	82	59	6.4	10.9	3.5		
6.8	4.2	1.2	3.2	0.5	0.1	88	65	6.0	9.2	3.5		
7.4	4.3	1.4	3.2	0.4	0.1	84	66	6.2	9.4	3.1		

a. Common smooth light brown concr. (Fe-Mn?)

Described by E. C. Sease, Robbie Flowers, and Roy K. Moore.

Soil type: Falaya silt loam
Soil Nos.: S57Tenn-39-8
Date: March 5, 1957
Area: Henderson County, Tennessee.
Location: Two miles west of Chesterfield and one-half mile south of Beach River along Cane Creek (see photo No. 2F-110). On Belton Robinson farm, 100 yards north of new drainage ditch and 30 feet south of old run. Twenty feet east of old field road.
Present land use: Small grain (oats) which was in corn in 1956.
Sampling party: E. C. Sease, Robbie Flowers, and Roy K. Moore.

Lincoln Lab. No.	Horizon	Depth	
7768	A_p	0-12 inches	Brown to dark brown (10YR 4/3) silt loam; weak fine granular structure; friable; abrupt smooth boundary.
7769	C_{g1}	12-24 inches	Mottled light brownish gray (2.5Y 6/2), yellowish brown (10YR 5/4), and very dark grayish brown (10YR 3/2); mottles are many, medium, distinct; silt loam; massive; friable; clear smooth boundary.
7770	C_{g2}	24-36 inches	Mottled light brownish gray (2.5Y 6/2) and brown to dark brown (10YR 4/3) with a few soft black (10YR 2/1) concretions; mottles are many, coarse, distinct; silt loam; no apparent structure; friable, vesicular; diffuse smooth boundary.
7771	C_{g3}	36-48 inches	Gray to light gray (5Y 6/1) with many fine prominent mottles of dark yellowish brown (10YR 4/4) and yellowish red (5YR 4/8); very few concretions; silt loam; structureless; friable; diffuse smooth boundary.
7772	C_{g4}	48-60 inches	Gray to light gray (5Y 6/1) with many medium distinct mottles and streaks of dark yellowish brown (10YR 4/4) and very dark brown (10YR 2/2); silt loam; massive; friable; gradual smooth boundary.
	C_{g5}	60 plus inches	(Not sampled.) Mottled gray (5Y 5/1), dark red (2.5YR 3/6), and dark yellowish brown (10YR 3/4); mottles are many, medium, prominent; silt loam; massive; friable.

Remarks: Colors given are for moist soil unless otherwise stated.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Falaya silt loam **LOCATION** Henderson County, Tennessee

SOIL NOS. S57Tenn-39-11 **LAB. NOS.** 7788-7792

DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002	2A2 > 2	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1										
0-9	Ap	0.2a	0.9a	1.5a	7.0a	18.0a	59.0	13.4	54.8	26.6	-	sil
9-20	C1	<0.1	0.8a	1.7a	8.0a	18.9a	52.5	18.1	49.3	27.1	-	sil
20-30	C2	0.1a	0.6a	1.3a	6.8a	17.0a	52.0	22.2	46.9	26.5	-	sil
30-42	C3	0.1a	0.7a	1.5a	8.1a	19.7a	51.1	18.8	50.7	25.2	-	sil
42+	C4	0.1a	0.7a	1.2a	7.3a	20.2a	51.5	19.0	52.1	24.5	-	sil

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron Fe_2O_3%		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
4.9			0.99	0.096	10	1.2						
4.7			0.31	0.040	8	1.3						
4.8			0.17	0.032		1.7						
4.7			0.17			1.7						
4.9			0.11			1.9						

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg		
←	milliequivalents per 100g. soil →							← me/100g →				
8.8	3.4	0.6	8.2	0.1	0.2	49	34	4.3	12.5			
9.1	2.2	0.7	11.0	0.1	0.2	35	22	3.2	14.2			
11.1	1.8	0.8	13.3	0.2	0.2	27	18	3.0	16.3			
9.8	1.5	0.6	11.0	0.1	0.2	24	18	2.4	13.4			
10.2	1.7	0.7	11.9	0.2	0.2	27	19	2.8	14.7			

a. Common smooth and irregular light brown concr. (Fe-Mn?)

Described by E. C. Sease, Robbie Flowers, Wiley Mangrum, and Lewis Dungan.

Soil type: Falaya silt loam
Soil Nos. : S57Tenn-39-11
Date: May 21, 1957
Area: Henderson County, Tennessee
Location: About one mile northeast of Sardis on Ewell Presley farm. Along gravel road that crosses west prong of Doe Creek 50 feet south of road and 50 feet west of ditch (see photo No. 2F-98).
Present land use: Cultivated field (corn) which was in corn in 1956.
Sampling party: E. C. Sease, Robbie Flowers, Wiley Mangrum, and Lewis Dungan.

Lincoln Lab. No.	Horizon	Depth	
7788	A_p	0-9 inches	Brown to dark brown (10YR 4/3) silt loam; very weak fine granular structure; very friable; abrupt smooth boundary.
7789	C_1	9-20 inches	Mottled light brownish gray (2.5Y 6/2), yellowish red (5YR 4/8), and dark yellowish brown (10YR 4/4); mottles are many, medium, distinct; silt loam; very weak fine subangular blocky; friable; gradual smooth boundary.
7790	C_2	20-30 inches	Light gray to gray (2.5Y 6/2) with many coarse prominent mottles of yellowish red (5YR 4/8) and strong brown (7.5YR 5/6); silt loam; massive; friable; a few soft dark brown concretions; gradual smooth boundary.
7791	C_3	30-42 inches	Light gray to gray (5Y 6/1) with many medium prominent mottles of strong brown (7.5YR 5/6); many dark brown and black concretions; silt loam; massive; diffuse smooth boundary.
7792	C_4	42 plus inches	Light gray to gray (5Y 6/1) with many coarse prominent mottles of strong brown (7.5YR 5/6) and (7.5YR 5/8); silt loam with some streaks of clay and sand; massive; friable.

Remarks: Colors given are for moist soil unless otherwise stated.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1963

SOIL TYPE Forestdale silt loam **LOCATION** Dyer County, Tennessee

SOIL NOS. S61Tenn-23-14 **LAB. NOS.** 16467-16473

DEPTH INCHES	HORIZON	1B1a PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent) 3A1 VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002	2A2 > 2	TEXTURAL CLASS
0-8	Ap	0.4a	1.5a	1.9b	12.6	6.8	45.5	31.3	32.5	27.4	-	
8-16	B1g	0.3a	0.4a	1.3b	14.0	7.8	41.5	34.7	40.1	17.8	-	
16-27	B2g	0.1a	0.3a	1.0b	12.7	10.4	42.8	32.7	46.0	15.5	-	
27-35	B3g	-	0.1	0.6	14.2	18.8	39.3	27.0	55.8	12.8	-	
35-45	Cg	-	Tr.	0.7	26.1	17.4	34.1	21.7	57.5	11.3	-	
45-51	Du1	-	Tr.	2.3	72.1	9.4	9.4	6.8	48.2	4.1	-	
51-69	Du2	-	0.1	5.7	71.0	8.8	8.1	6.3	47.3	3.7	-	

8C1a pH 1:1	6E1c $CaCO_3$ equivalent %	ORGANIC MATTER 6A1a O.C. c %	6B1a N %	C/N	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	A.D. 4A1b g/cc	WATER RETENTION 4E1b 1/3-Bar Pieces %	4B2 15-Bar Sieved %	4C1 15-to 1/3-Bar in./in.
4.5		0.72	0.080	9	12.4	1.64	19.5	1.55	1.66	20.9	12.1	.14
4.2		0.23	0.052		11.3	1.69			1.70	22.7	14.2	.13
4.0		0.14	0.039		12.2	1.66			1.68	22.6	14.0	.13
3.8		0.14			12.9	1.65	23.0	1.57	1.69	21.3	12.3	.14
3.8		0.06			13.9	1.67	19.2	1.62	1.72	21.4	10.2	.18
4.6		0.02									3.6	
4.6		0.02									3.7	

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	5C1 Base Sat.% NH_4OAc	5C3 Base Sat.% on Sum Cations	6G2a Ext. Al me/100g	6C1a Ext. Iron as Fe %	8D2 Ratios to Clay 15-Atm. Water	NH_4OAc CEC	Ext. Iron
←	milliequivalents per 100g. soil →											
15.4	6.5	2.2	11.5	Tr.	0.3	58	44	2.3	1.0	.39	.49	.032
18.0	5.2	2.8	13.5	0.1	0.4	47	39	6.4	1.0	.41	.52	.029
18.4	3.8	3.8	14.6	0.1	0.4	44	36	7.9	1.1	.43	.56	.034
17.2	3.3	4.0	12.5	0.1	0.3	45	38	5.9	1.2	.46	.64	.044
15.2	3.0	4.0	10.6	0.1	0.3	49	41	4.6	1.0	.47	.70	.046
5.2	1.1	1.2	3.5	0.1	0.1	48	42	1.3	0.6	.53	.76	.088
5.4	1.7	1.6	2.3	Tr.	0.2	65	60	0.6	0.6	.59	.86	.095

a. Many Fe-Mn nodules.
b. Few Fe-Mn nodules.
c. 4.4 Kg/M^2 to 45 inches.

Soil type: Forestdale silt loam
Soil Nos. : S61Tenn-23-14
Location: Dyer County, Tennessee; from Bogota on Miston road 1.2 miles west to gravel road - on gravel road 1.7 miles to junction - from junction on gravel road 0.8 mile west to a dirt road - on dirt road south 0.4 mile - 100 feet east of dirt road to sample site. Aerial photo ADN-2R-164.
Vegetation and use: Soybeans.
Slope and land form: Nearly level old natural levee of Mississippi River.
Drainage and permeability: Poorly drained with slow runoff and slow internal drainage; permeability is slow.
Parent material: Alluvium from Mississippi River.
Collected by: E. J. Pedersen, J. L. Millet, J. A. Elder, E. C. Sease, W. C. Moffitt, C. L. Moore, and W. C. Jackson.
Described by: W. T. Brown, October 19, 1961.

Horizon and Lincoln Lab. Number	
Ap 16467	0 to 8 inches. Dark gray (10YR 4/1) silt loam; weak medium granular structure, lower three inches is massive firm plow pan; few fine roots; abrupt smooth boundary.
B1g 16468	8 to 16 inches. Gray (5Y 5/1) silty clay loam with common medium distinct dark brown (7.5YR 4/4) and dark grayish brown (10YR 4/2) mottles; moderate medium subangular blocky structure; firm; few fine roots; clear smooth boundary.
B2g 16469	16 to 27 inches. Gray (10YR 5/1) silty clay with common medium distinct dark brown (7.5YR 4/4) and very dark grayish brown (10YR 3/2) mottles; weak medium prismatic structure breaking to moderate medium angular blocky structure; firm; sand coats on some vertical ped faces, possibly worked down through cracks in dry soil; few fine roots; clear smooth boundary.
B3g 16470	27 to 35 inches. Gray (10YR 5/1) silty clay loam or clay loam with common coarse distinct dark brown (7.5YR 4/4) and few fine faint pale brown (10YR 6/3) mottles; weak medium prismatic structure breaking to weak medium subangular blocky structure; firm; common fine roots, mostly on vertical ped faces; few wormholes; gradual smooth boundary.
Cg 16471	35 to 45 inches. Gray (10YR 5/1) silty clay loam or clay loam; many coarse distinct brown (10YR 4/3) mottles; very coarse prismatic structure to massive; firm; few roots; few fine pores; abrupt smooth boundary.
Du1 16472	45 to 51 inches. Brown (10YR 4/3) loamy sand or sand; massive; very friable; firm; few fine roots; few 1/2-inch strata of brown (10YR 4/3) sandy loam; gradual smooth boundary.
Du2 16473	51 to 69 inches. Brown (10YR 4/3) sand; single grain to weak medium granular structure; loose; few 1/2-inch strata of brown (10YR 4/3) loamy sand.

Remarks: Colors and Munsell notations are for moist soil; soil was dry when sampled. All samples were fumigated with methyl bromide for 24 hours.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1961

SOIL TYPE Forestdale silt loam **LOCATION** Dyer County, Tennessee

SOIL NOS. 861Tenn-23-15 **LAB. NOS.** 16474-16482

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1 VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.20-0.02	0.02-0.002	2A2 > 2	TEXTURAL CLASS
0-8	Ap	0.5a	0.9a	0.7b	3.3c	15.5	55.2	23.9	50.0	23.0	-	
8-12	A21g	0.3a	0.8a	0.5b	2.5c	13.6	55.2	27.1	47.4	23.2	-	
12-16	A22g	0.4a	0.6a	0.4b	2.4c	15.0	56.4	24.8	49.8	23.4	-	
16-22	B21g		0.4a	0.3b	1.9c	14.0	51.0	32.2	46.7	19.8	-	
22-29	B22g	0.2a	0.3a	0.2b	1.7c	15.4	45.3	36.9	46.3	15.8	-	
29-35	B3	0.1a	0.1a	0.2a	1.5c	16.1	49.5	32.5	51.4	15.4	-	
35-53	C	-	Tr.a	0.1a	1.2c	9.3	60.4	29.0	40.3	30.4	-	
53-59	Du1	-	-	0.2	9.3	47.1	29.0	14.4	74.9	8.0	-	
59-80	Du2	-	-	1.0	12.0	52.5	25.8	8.7	83.3	5.7	-	

pH 1:1	8C1a $CaCO_3$ equivalent %	ORGANIC MATTER 6A1a O.C. d %	6R1a N %	C/N	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	A.D. 4A1b g/cc	WATER RETENTION 4B1b 1/3-Bar Pieces %	4B2 15-Bar Sieved %	4G1 15-to 1/3-Bar in./in.
4.5		1.23	0.114	11	12.6	1.56	21.4	1.50	1.57	21.4	10.6	.16
4.1		0.25	0.041		11.1	1.59	22.0	1.56	1.59	22.1	10.8	.18
4.1		0.14	0.033		10.5	1.68	19.0	1.61	1.68	21.6	9.9	.19
3.8		0.14	0.037		14.0	1.64	20.4	1.57	1.66	23.4	13.7	.15
4.0		0.18	0.039		16.3	1.63	20.1	1.54	1.68	28.0	15.9	.19
4.4		0.12			15.5	1.60	23.2	1.50	1.63	25.6	15.7	.15
4.9		0.10			15.5	1.58	24.4	1.50	1.61	26.8	15.0	.18
5.1		0.10									8.6	
6.0		0.06									5.9	

5A1a CATION EXCHANGE CAPACITY NH_4OAc pH 4	EXTRACTABLE CATIONS 6N2b Ca	6Q2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	5C1 Base Sat.% NH_4OAc	5C3 Base Sat.% on Sum Cations	6Q2a Ext. Al me/100g	6C1a Ext. Iron as Fe %	Ratios to Clay 8D2 15 Atm. Water	NH_4OAc CEC	Ext. Iron
	milliequivalents per 100g. soil											
14.9	7.1	2.2	10.1	Tr.	0.2	64	48	0.5	1.2	.44	.62	.050
13.8	3.7	1.6	11.3	0.1	0.3	41	34	4.8	1.1	.40	.51	.040
12.2	2.3	1.5	10.3	0.2	0.2	34	29	5.3	1.0	.40	.49	.040
17.2	2.4	2.7	15.1	0.5	0.4	35	28	8.9	1.0	.42	.53	.031
21.4	3.0	3.8	17.3	0.9	0.5	38	32	9.7	1.0	.43	.58	.027
20.6	3.6	4.4	15.4	1.4	0.4	48	39	7.9	1.2	.48	.63	.037
20.9	5.0	5.7	11.8	2.1	0.4	63	53	4.6	1.4	.52	.72	.048
11.7	4.6	4.1	3.7	1.7	0.2	90	74	0.2	0.8	.60	.81	.056
8.5	4.2	3.0	1.9	0.9	0.2	98	81		0.8	.68	.98	.092

a. Many Fe-Mn nodules.
b. Common Fe-Mn nodules.
c. Few Fe-Mn nodules.
d. 6.4 Kg/M^2 to 60 inches.

Soil type: Forestdale silt loam
Soil Nos. : S61Tenn-23-15
Location: Dyer County, Tennessee; from Bogota on Miston road 1.2 miles west to gravel road - 1.7 miles to junction - from junction to gravel road 0.8 mile west to a dirt road - on dirt road south 1.4 miles - 40 feet east of dirt road to sample site. Aerial photo AIN-1R-132.
Vegetation and use: Recently combined soybeans.
Slope and land form: Nearly level old natural levee of Mississippi River.
Drainage and permeability: Poorly drained with slow runoff and slow internal drainage; permeability is slow.
Parent material: Alluvium from Mississippi River.
Collected by: E. J. Pedersen, J. L. Millet, J. A. Elder, E. C. Sease, W. C. Moffitt, C. L. Moore, and W. C. Jackson.
Described by: W. T. Brown, October 19, 1961.

Horizon and Lincoln Lab. Number	
Ap 16474	0 to 8 inches. Very dark grayish brown (10YR 3/2) silt loam; weak fine granular structure; friable; common fine and few coarse roots; few fine concretions; abrupt wavy boundary.
A21g 16475	8 to 12 inches. Grayish brown (10YR 5/2) silt loam; with common fine faint yellowish brown (10YR 5/4) and gray (10YR 6/1) mottles; massive; firm; few concretions; few fine roots; clear smooth boundary.
A22g 16476	12 to 16 inches. Pale brown (10YR 6/3) silt loam with few fine faint yellowish brown (10YR 5/4) mottles; weak fine granular structure; friable; common fine roots; few fine pores; few concretions; clear smooth boundary.
B21g 16477	16 to 22 inches. Gray (10YR 5/1) silty clay loam or silt loam with many fine distinct yellowish brown (10YR 5/6) mottles; weak coarse prismatic structure breaking to weak medium subangular blocky structure; firm to friable; common fine roots; common fine pores; few concretions; clear smooth boundary.
B22g 16478	22 to 29 inches. Gray (5Y 5/1) silty clay with few medium distinct dark brown (7.5YR 4/4) mottles and prism faces have light brownish gray (10YR 6/2) coatings; weak coarse prismatic structure breaking to moderate medium subangular blocky structure; firm; few roots; few concretions; clear smooth boundary.
B3 16479	29 to 35 inches. Dark yellowish brown (10YR 4/4) silty clay loam with common medium distinct gray (5Y 5/1) and few fine faint dark brown (7.5YR 4/4) mottles; weak coarse subangular blocky structure; firm; few fine roots; few soft concretions; clear smooth boundary.
C 16480	35 to 53 inches. Dark brown (7.5YR 4/4) silty clay loam with many medium distinct pale brown (10YR 6/3) and gray (10YR 5/1) mottles; massive; firm; few fine roots; clear smooth boundary.
Du1 16481	53 to 59 inches. Brown (10YR 4/3) fine sandy loam with common coarse distinct black (N 2/) stains; massive; friable; few fine roots; few fine concretions; clear smooth boundary.
Du2 16482	59 to 80 inches. Brown (10YR 4/3) fine sandy loam; massive; very friable; few fine roots.
	80 to 144 inches. (Bucket auger boring.) Fine sandy loam becoming more sandy with depth; from about 100 to 144 inches is loamy fine sand or fine sand.

Remarks: Colors and Munsell notations are for moist soil; soil was dry when sampled. All soil samples were fumigated with methyl bromide for 24 hours.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Freeland silt loam **LOCATION** Henderson County, Tennessee

SOIL NOS. S55Tenn-39-6 **LAB. NOS.** 7751-7760

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1 VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002	2A2 > 2	TEXTURAL CLASS
0-4	Ap	0.2a	0.9a	0.8a	1.7a	2.2a	82.6	11.6	47.4	38.3	Tr.	si
4-13½	B21	0.1a	0.7a	0.7a	1.1a	1.2a	69.7	26.5	31.5	40.0	-	sil
13½-16½	B22	0.1a	0.8a	0.8a	1.5a	1.6a	68.1	27.1	30.6	39.9	Tr.	sicl
16½-24½	B23	0.1a	0.9a	1.0a	1.9a	2.3a	68.4	25.4	32.2	39.5	-	sil
24½-29½	B3m1	0.5a	1.8a	2.0a	3.8a	4.8a	67.9	19.2	37.8	36.9	-	sil
29½-35½	B3m2	0.5a	1.8a	2.2a	4.6a	5.5a	65.3	20.1	38.2	35.0	-	sil
35½-43	B3m3	0.6a	2.1a	2.3a	3.9a	6.8a	63.0	21.3	36.7	34.9	-	sil
43-52	C11	0.6a	2.2a	2.7a	5.5a	6.7a	61.5	20.8	38.0	33.2	-	sil
52-58	C12	0.4a	2.4a	3.1a	6.1a	7.3a	51.6	29.1	35.0	27.1	Tr.	sicl
58+	D	0.9a	5.2a	6.5a	11.2a	14.4a	39.8	22.0	38.9	20.9	Tr.	l

8C1a pH 1:1	1:5	1:10	6A1a ORGANIC MATTER ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron Fe_2O_3%		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
5.7			0.98	0.092	11	1.4						
4.7			0.32	0.051	6	2.7						
4.7			0.21	0.045		2.7						
4.8			0.17	0.037		2.5						
4.8			0.08			1.8						
4.9			0.07			1.8						
4.9			0.07			1.6						
4.7			0.07			1.5						
4.8			0.06			2.3						
5.1			0.04			1.7						

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5B1a BASE SAT. % NH_4Ac EXCH.	5C3 Base Sat. % on Sum Cations	5B1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg
←	milliequivalents per 100g. soil				→	5C1		← me/100g →		
6.4	2.5	0.8	3.6	<0.1	0.6	61	52	3.9	7.5	
10.0	2.3	1.9	8.6	0.1	0.4	47	35	4.7	13.3	1.2
11.4	1.5	2.8	10.7	0.2	0.3	42	31	4.8	15.5	0.5
11.0	1.1	2.6	10.2	0.2	0.3	38	29	4.2	14.4	0.4
8.0	0.4	1.9	7.8	0.1	0.2	32	25	2.6	10.4	
8.1	0.1	1.4	7.4	0.2	0.2	23	20	1.9	9.3	
9.1	<0.1	2.5	8.6	0.2	0.2	32	25	2.9	11.5	
8.8	<0.1	1.8	6.9	0.3	0.2	26	25	2.3	9.2	
11.3	0.9	3.0	8.6	0.4	0.2	40	34	4.5	13.1	
8.2	1.1	2.8	5.7	0.3	0.1	52	43	4.3	10.0	0.4

a. Common smooth and irregular light brown to black concr. (Fe-Mn?)

Soil type: Freeland silt loam — Described by E. C. Sease and Robbie Flowers
Soil No.: 855Tenn-39-6
Date: June 1, 1955
Area: Henderson County, Tennessee
Location: 2.8 miles south of Chesterfield on Chesterfield-Scotts Hill Road. (See Photo No. 2F-109.) 20 feet west of road in orchard of Luther Dyer, 100 yards north of Luther Dyer's house.
Present land use: Pea patch in home orchard (some barnyard manure has been spread).
Sampling party: E. C. Sease and Robbie Flowers.

Lincoln Lab. No.	Horizon	Depth	
7751	A_p	0-4 inches	Brown to dark brown (10YR 5/3-4/3) friable silt loam; moderate fine granular structure; abrupt boundary.
7752	B_{21}	4-13½ inches	Dark brown (7.5YR 4/4) friable to firm light silty clay loam; moderate medium subangular blocky structure; a few fine soft dark brown concretions; gradual boundary.
7753	B_{22}	13½-16½ inches	Dark yellowish brown (10YR 4/4) friable to firm silty clay loam with a few fine faint mottles of yellowish brown (10YR 5/4); a few fine soft dark brown concretions; moderate medium subangular blocky structure; gradual boundary.
7754	B_{23}	16½-24½ inches	Dark yellowish brown (10YR 4/4) friable to firm silty clay loam with common medium faint mottles of brown (10YR 5/3) and yellowish brown (10YR 5/4); moderate medium and coarse subangular blocky structure; common fine dark brown concretions; gradual boundary.
7755	B_{3n1}	24½-29½ inches	Mottled dark yellowish brown (10YR 4/4), pale brown (10YR 6/3), and brown (7.5YR 4/4); mottles are many, medium, distinct; friable heavy silt loam; many medium dark brown concretions; moderate medium angular blocky structure.
7756	B_{3n2}	29½-35½ inches	Mottled brown (7.5YR 4/4), gray (10YR 5/1), and yellowish brown (10YR 5/4); mottles are many, medium, distinct; firm heavy silt loam; common fine soft dark brown and black concretionary material; weak coarse angular blocky to massive structure; gradual boundary.
7757	B_{3n3}	35½-43 inches	Yellowish brown (10YR 5/4) with many medium distinct mottles of grayish brown (10YR 5/2) and dark yellowish brown (10YR 4/4); firm heavy silt loam; massive, breaking to weak coarse angular blocky structure under pressure; many fine soft dark brown concretions.
7758	C_{11}	43-52 inches	Mottled reddish brown (5YR 4/4), gray (10YR 5/1), and yellowish brown (10YR 5/4); mottles are many, medium, distinct; firm light silty clay loam; massive, breaking to very weak coarse angular blocky under pressure; gradual boundary.
7759	C_{12}	52-58 inches	Reddish brown (5YR 4/4) with many coarse prominent mottles of gray (2.5YR 5/0) and yellowish brown (10YR 5/4); firm silty clay loam with tongues of light gray (2.5Y 7/2) silty clay; massive, breaking to weak medium angular blocky structure under pressure; gradual boundary.
7760	D	58 plus inches	Mottled yellowish brown (10YR 5/4), reddish brown (5YR 4/4), and pale olive (5Y 6/3) firm clay loam; massive, breaking to moderate coarse angular blocky structure under pressure.

Remarks: Colors given are for moist soil unless otherwise stated. This is the eroded gently sloping phase of Freeland.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Freeland silt loam **LOCATION** Henderson County, Tennessee

SOIL NOS. S57Tenn-39-12 **LAB. NOS.** 7793-7799

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 0.2-0.02	0.02-0.002	2A2 > 2	TEXTURAL CLASS
0-8	Ap	0.1a	1.1a	2.5a	9.8a	3.5a	74.4	8.6	53.3	30.0	-	sil
8-13	B21	0.1a	0.4a	0.8a	2.8a	1.1a	71.7	23.1	34.7	39.7	-	sil
13-18	B22	<0.1	0.3a	0.7a	2.6a	1.3a	68.7	26.4	31.9	39.6	-	sil
18-25	B3m1	<0.1	0.4a	1.1a	4.2a	2.0a	67.4	24.9	35.1	36.7	-	sil
25-34	B3m2	<0.1	0.5a	1.5a	6.4a	2.9a	65.9	22.8	37.3	35.1	-	sil
34-46	C1	0.1a	0.9a	2.5a	10.6a	4.3a	61.6	20.0	38.8	33.1	-	sil
46-58	C2	0.1a	0.8a	2.6a	11.9a	4.4a	58.4	21.8	35.5	33.9	-	sil

8C1a pH 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron Fe_2O_3%		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
5.4			0.37	0.043	9	1.2						
5.7			0.29	0.040	7	2.2						
5.7			0.25	0.038	6	2.6						
5.5			0.17	0.030		2.4						
5.0			0.09			1.9						
5.2			0.07			1.5						
5.4			0.05			1.1						

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5B1a BASE SAT. % NH_4Ac EXCH.	5C3 Base Sat. % on Sum Cations	5B1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg
←	milliequivalents per 100g. soil				→	5C1		← me/100g.	→	
4.6	1.9	0.6	4.5	<0.1	0.2	59	38	2.7	7.2	
10.0	6.5	1.6	5.5	0.1	0.2	84	60	8.4	13.9	4.1
12.5	7.8	2.4	6.4	0.2	0.2	85	62	10.6	17.0	3.2
12.2	6.6	2.8	6.9	0.3	0.2	81	59	9.9	16.8	2.4
10.6	3.4	2.9	8.7	0.3	0.2	64	44	6.8	15.5	1.2
8.6	1.3	2.3	8.2	0.3	0.2	48	33	4.1	12.3	0.6
9.0	1.6	3.3	6.4	0.5	0.1	61	46	5.5	11.9	0.5

a. Common smooth and irregular light brown concr. (Fe-Mn?)

Described by E. C. Sease, Robbie Flowers, Wiley Mangrum, and Lewis Dungan

Soil type: Freeland silt loam
Soil No. : S57Tenn-39-12
Date: May 27, 1957
Area: Henderson County, Tennessee.
Location: About nine miles north of Lexington, Tennessee, along State Highway No. 22. Twenty-five yards east of highway and 200 yards south of Beaver School. (See photo No. 2F-6.) On Eunice Walker farm.
Present land use: Cultivated field (oats) which in 1956 was in cultivation.
Sampling party: E. C. Sease, Robbie Flowers, Wiley Mangrum, and Lewis Dungan.

Lincoln Lab. No.	Horizon	Depth	
7793	A_p	0-8 inches	Yellowish brown (10YR 5/4) silt loam; weak fine granular structure; very friable, numerous pores and small roots; abrupt smooth boundary.
7794	B_{21}	8-13 inches	Dark yellowish brown (10YR 4/4) to brown to dark brown (7.5YR 4/4) coarse silty clay loam; moderate medium subangular blocky structure; friable; some clay skins; clear smooth boundary.
7795	B_{22}	13-18 inches	Yellowish brown (10YR 5/4) with numerous dark yellowish clay skins; silt loam; moderate to strong medium subangular blocky structure; friable; clear smooth boundary.
7796	B_{3m1}	18-25 inches	Dark yellowish brown (10YR 4/4) with common medium distinct mottles of light brownish gray (2.5Y 6/2) and brown to dark brown (7.5YR 4/2); the brown to dark brown color is on the ped faces; weak coarse angular blocky structure; firm; some clay skins; gradual smooth boundary.
7797	B_{3m2}	25-34 inches	Mottled light gray to gray (2.5Y 6/1), yellowish brown (10YR 4/4), and brown to dark brown (7.5YR 4/2); mottles are many, medium, distinct; some soft dark brown concretions; silt loam; weak coarse angular blocky structure; firm; a few clay skins; gradual smooth boundary.
7798	C_1	34-46 inches	Brown (10YR 5/3) to yellowish brown (10YR 5/4) silt loam; massive; firm; seams and streaks of variegated gray (2.5Y 5/0) and yellowish brown (10YR 5/8) clay; some sand in this layer; diffuse smooth boundary.
7799	C_2	46-58 inches	Brown (10YR 5/3) to yellowish brown (10YR 5/4) silt loam; massive; firm; seams and streaks of variegated gray (2.5Y 5/0) and yellowish brown (10YR 5/8) clay; diffuse smooth boundary.
	C_3	58 plus inches	Variegated gray (2.5Y 5/0), yellowish brown (10YR 5/8), and light gray (2.5Y 7/1) sandy clay; massive; firm. Not sampled.

Remarks: Colors given are for moist soil unless otherwise stated. This is the eroded gently sloping phase of Freeland.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Fullerton silt loam SOIL Nos. 853Tenn-5-1 2 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53739-53743

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)			Coarse fragments 2A2 > 2 Pct.	2–19	19–76
		Pct. of < 2 mm															Pct. of < 76mm	
0-7	Ap	25.8	58.4	15.8	3.4	5.3	4.1	6.6	6.4	14.7	43.7	25.3	19.4			14		
7-13	A3	23.0	55.4	21.6	2.4	5.2	3.7	5.8	5.9	13.9	41.5	23.5	17.1			16		
13-19	B1	20.4	52.9	26.7	2.1	4.4	3.3	5.3	5.3	12.0	40.9	20.7	15.1			15		
19-41	B2	18.4	45.6	36.0	1.8	3.6	2.8	5.1	5.1	11.1	34.5	19.5	13.3			8		
41-55	C	18.3	36.8	44.9	3.1	3.6	2.4	4.2	5.0	8.7	28.1	16.4	13.3			3		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.				pH 8C1a (1:1) H_2O
0-7	1.57																4.8
7-13	0.43																4.6
13-19	0.30																4.6
19-41	0.11																4.8
41-55	0.08																4.8

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	me/100 g																
0-7	0.2	-	tr.	tr.	0.2	7.9	8.1									2	
7-13	0.1	-	tr.	tr.	0.1	7.3	7.4									1	
13-19	0.3	0.1	tr.	tr.	0.4	8.2	8.6									5	
19-41	-	-	tr.	tr.	tr.	8.4	8.4									0	
41-55	0.3	0.2	tr.	tr	0.5	9.4	9.9									5	

Depth (in.)

0964-863-BEATTSVILLE, MD. 1964

Soil Type: Fullerton silt loam
Soil No.: S53Tenn-5-12
Location: Blount County, Tennessee. 4 miles northwest of Friendsville.
Vegetation and land use: Pasture, chiefly lespedeza. Some sprouts, weeds and briars.

Horizon and Beltsville Lab. No.	
Ap 53739	0 to 7 inches. Light yellowish brown (10YR 6/4) friable silt loam. Few small angular chert fragments up to 1/4 inch in diameter.
A3 53740	7 to 13 inches. Yellowish brown (10YR 5/6) friable silt loam; weak fine blocky structure. Gradual gradation to;
B1 53741	13 to 19 inches. Strong brown (7.5YR 5/6) friable silt clay loam; weakly developed fine blocky structure. Gradual gradation to;
B2 53742	19 to 41 inches. Red (2.5YR 4/6) moderately firm silty clay loam; moderately developed medium blocky structure.
C 53743	41 to 55 inches. Red (2.5YR 4/8) moderately firm silty clay loam. Some distinct brownish yellow (10YR 6/6) mottles. Moderate medium blocky structure. Numerous angular chert fragments.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Fullerton silt loam SOIL Nos. 853Tenn-5-15 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53751-53754

Depth (in.)	Horizon	1B1b Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (< 0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: (0.05-0.02)	Silt: Int. III (0.02-0.002)	Int. II (0.2-0.02)	(2-0.1)			Coarse fragments 2A2 > 2 Pct.	2-19	19-76
		Size class and particle diameter (mm) 3A1 — Pct. of < 2 mm															Pct. of < 76mm	
0-7	Ap	23.3	53.7	23.0	5.3	6.2	4.1	4.3	3.4	14.4	39.3	20.0	19.9			19		
7-16	B1	20.3	45.8	33.9	5.8	4.8	3.1	3.2	3.4	12.4	33.4	16.8	16.9			24		
16-34	B2	10.0	24.8	65.2	3.0	2.5	1.4	1.5	1.6	5.0	19.8	7.6	8.4			14		
34-56	C	4.7	17.1	78.2	1.7	1.2	0.5	0.7	0.6	2.1	15.0	3.0	4.1			23		

Depth (in.)	6A1a Organic carbon Pct	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-7	1.87																	5.6
7-16	0.14																	5.0
16-34	0.13																	4.8
34-56	0.12																	5.0

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-7	1.7	0.4	tr.	0.1	2.2	7.0	9.2									24	
7-16	0.6	0.3	tr.	tr.	0.9	6.2	7.1									13	
16-34	1.1	1.4	tr.	0.2	2.7	11.6	14.3									19	
34-56	0.8	1.0	tr.	0.1	1.7	16.6	18.3									9	

Depth (in.)

USDA SCS HYATTSVILLE MD 1964

Soil Type: Fullerton silt loam
Soil No.: S53Tenn-5-15
Location: Blount County, Tennessee. 2-3/4 miles north of Friendsville.
Vegetation and land use: Pasture. Lespedeza, weeds, and sprouts.

Horizon and Beltsville Lab. No.	
Ap 53751	0 to 7 inches. Grayish brown (10YR 5/2) to brown (10YR 5/3) friable silt loam. Few small angular chert fragments up to 1/4 inch in diameter.
B1 53752	7 to 16 inches. Strong brown (7.5YR 5/6) friable silt loam to silty clay loam; moderately developed medium to fine blocky structure. Gradual gradation to;
B2 53753	16 to 34 inches. Red (2.5YR 5/8) to yellowish red (5YR 5/8) moderately firm silty clay loam; strongly developed medium blocky structure. Occasional angular chert fragment up to 1/2 inch in diameter. Gradual gradation to;
C 53754	34 to 56 inches. Red (2.5YR 5/8) to yellowish red (5YR 5/8) moderately firm silty clay loam; many distinct brownish yellow (10YR 6/6) mottles; strong medium blocky structure. Few angular coarse chert fragments up to 4 inches in diameter.

SCS-421
10-64 (Rev. 9-65)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Greendale silt loam, undulating phase SOIL Nos. 854Tenn-16-5 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551312 - 551313

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: (0.05–0.02)	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2 - 19	19 - 76
		Size class and particle diameter (mm) 3A1 — Pct. of < 2 mm														Pct. of < 76mm		
0-11			71.1	21.0	0.5	0.8	0.8	2.9	2.9		50.3	25.6				tr.		
11-22			67.5	25.5	0.7	0.6	0.4	2.4	2.9		47.6	24.5				tr.		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron 6H Fe2O3 Pct.	Bulk density: g/cc	4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: Pct.	4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in	pH: 8C1c (1:1) KCl	8C1a (1:1) H_2O
0-11	2.09	0.150	14			1.6											5.1
11-22	0.41	0.059	7			2.2											4.7

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations		6G1d Ext. Al			Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																	
0-11	2.0	0.9	tr.	0.4		11.4	14.7										22	
11-22	0.9	0.8	tr.	0.2		9.4	11.3										17	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Mi.	Int	Qtz.	Kl.	Gibbsite	
	7A2 X-ray						7A3		

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

SCS-SCS-BELTSVILLE, MD. 1964

Soil Type: Greendale silt loam, undulating phase.
Soil No.: S54Tenn-16-5
Location: Coffee County, Tennessee. 3.6 miles south of Davis Grocery at Hopewell on Maple Springs-Plainview-Hopewell Road. 300 feet north of small wooded cemetery and 1000 feet south by east of intersection of gravel road in large field and 3 feet south of Oak Stump in small incipient drainage-way. Aerial photo 60-129.

Horizon and
Beltsville
Lab. No.

0 to 11 inches. Brown (10YR 4/3 - 5/3) very friable silt loam; weak fine crumb or granular
551312 structure.

11 to 22 inches. Yellowish brown (10YR 5/4) very friable silt loam; moderate fine to medium
551313 crumb structure.

22 inches plus. Mottled light yellowish brown (10YR 6/4 - 2.5Y 6/4) friable silty clay loam;
Not Sampled mottlings vary from few to many in abundance and from faint to prominent.

SCS-421
-30-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Greendale silt loam, undulating phase SOIL Nos. 854Tenn-16-15 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551351 - 551352

Depth (In.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 ≥ 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct. of < 76mm	
0-12			68.1	15.3	2.5	2.2	1.5	5.2	5.2		46.7	30.0				17		
12-24			62.6	18.9	2.5	2.9	1.6	5.5	6.0		41.6	30.9				21		

Depth (In.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density: g/cc	4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: Pct.	4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in	pH:	8C1c (1:1) KCl	8C1a (1:1) H_2O
0-12	1.13	0.091	12			2.0												5.8
12-24	0.28	0.038				3.0												5.4

Depth (In.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations		6G1d Ext. Al			Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																	
0-12	3.8	0.5	0.1	0.1		5.4	9.9										45	
12-24	2.3	0.3	tr.	0.1		4.3	7.0										38	

Depth (In.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray						7A3	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

USDA-SCS-HYATTSVILLE, MD. 1966

Soil Type: Greendale silt loam, undulating phase.
Soil No.: S54Tenn-16-15
Location: Coffee County, Tennessee. 1.0 mile west of Ninth Modal School on Summitville-Ninth Modal road to red brick telephone building at intersection. North 0.4 mile to second 90° curve. 30 yards south of curve in incipient drainageway. Aerial photo 7G-18.

Horizon and Beltsville Lab. No.	
551351	0 to 1 inch. Brown (10YR 5/3 - 4/3) very friable silt loam; weak fine crumb structure.
551352	12 to 24 inches. Yellowish brown (10YR 5/4) very friable silt loam; moderate fine to medium crumb structure.
Not Sampled	24 inches plus. Mottled light yellowish brown (10YR 6/4) and yellow friable silty clay loam.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Fayette County, Tennessee SOIL TYPE Grenada silt loam, terrace phase

Lincoln LAB NOS. 12193 - 12201 SOIL NOS. S59Tenn-24-1

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12193	0-7	Ap	0.1	1.2	2.1	2.2	0.9	81.2	12.3	46.1	36.6	-	sil/si
12194	7-16	B21	0.1a	0.7a	1.3	1.1	0.5	70.1	26.2	34.3	36.6	-	sil
12195	16-21	B22	< 0.1	0.9b	1.4b	1.3b	0.6b	68.8	27.0	33.8	36.0	-	sil/sicl
12196	21-31	B3mg1	0.1	3.1a	4.9a	4.4a	1.2a	71.8	14.5	36.4	37.8	-	sil
12197	31-43	B3mg2	0.1	4.7	9.0	7.1	1.2	59.6	18.3	32.5	30.0	-	sil
12198	43-55	B3mg3	0.3	9.7	17.8	14.3	2.2	40.7	15.0	26.5	19.8	-	l
12199	55-65	B3mg4	0.4	11.7	22.6	19.3	3.0	30.9	12.1	23.0	15.7	-	sl
12200	65-74	D1u	1.3	13.4	27.5	24.5	3.5	19.1	10.7	19.4	9.2	-	sl
12201	74-90+	D2u	0.3	16.4	41.8	33.5	2.4	4.3	1.3	11.2	1.9	-	s

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY c Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12193	6.5			0.62	0.064	10	1.2	16.7	1.49	18.5	1.47	1.50	5.1
12194	4.9			0.28	0.051	5	2.4	9.4	1.44	26.2	1.33	1.44	10.4
12195	4.8			0.19	0.043		2.8	12.2	1.44	28.2	1.37	1.47	11.0
12196	4.9			0.09	0.023		2.1	7.8	1.64	22.5	1.57	1.63	7.4
12197	4.8			0.10			1.8	13.5	1.64	21.6	1.59	1.69	7.6
12198	4.9			0.06			1.2	11.6	1.76	15.9	1.73	1.77	5.6
12199	4.9			0.07			0.9	8.8	1.78	11.9	1.74	1.79	4.4
12200	4.9			0.06			0.7	11.6	1.76	10.8	1.71	1.77	3.6
12201	5.1			0.02			0.2						0.6

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat. % on Sum Cations	5C1 Base Sat. % NH_4OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg
	milliequivalents per 100g soil								< me/100 g ->		
12193	7.1	5.9	1.4	<0.1	0.4	3.9	66	108	7.7	11.6	4.2
12194	11.0	4.8	2.4	0.1	0.2	9.1	45	68	7.5	16.6	2.0
12195	12.0	3.4	3.1	0.1	0.2	11.1	38	57	6.8	17.9	1.1
12196	7.8	1.3	1.8	0.1	0.2	7.8	30	44	3.4	11.2	0.7
12197	8.8	0.9	2.3	0.1	0.2	9.0	28	40	3.5	12.5	
12198	6.4	0.4	1.6	0.1	0.1	6.6	25	34	2.2	8.8	
12199	4.9	0.3	1.4	<0.1	0.1	5.6	24	37	1.8	7.4	
12200	4.6	0.2	1.6	<0.1	0.1	4.4	30	41	1.9	6.3	
12201	0.7	0.2	<0.1	<0.1	<0.1	0.5	28	28	0.2	0.7	

a. Few Fe-Mn? bearing aggregates.
b. Common Fe-Mn? bearing aggregates.
c. See remarks in description.

Soil type: Grenada silt loam, terrace phase
Soil No. : 599Tenn-24-1
Location: Fayette County, Tennessee, approximately 17 miles southeast of Somerville, on Cowan Brothers farm, 2 miles south of LaGrange and 660 yards east of LaGrange-Michigan City gravel road. Photo ADB-1F-106(1950)

Vegetation and Use: Cotton field.

Slope and Land Form: Nearly level (0-2 percent) broad flat nearly level to gently sloping terrace topography.

Drainage and Permeability: Moderately well-drained. Runoff slow to medium; permeability moderate in upper part, slow in lower part.

Parent Material: Loess covered terraces and/or old alluvium from loessial uplands.

Samples Collected by: Edwood Pedersen, George Phibbs, D. K. Springer, M. E. Springer, R. K. Moore, W. C. Mangrum, and E. C. Sease - October 14, 1959.

Profile Described by: E. C. Sease and D. K. Springer - October 14, 1959.

Horizon and Lincoln Lab. No.	Depth	
Ap 12193	0 to 7 inches	Brown to dark brown (10YR4/3) silt loam; weak fine granular structure; very friable; common fine roots; few fine concretions; clear smooth boundary. 6 to 8 inches thick.
B21 12194	7 to 16 inches	Brown to dark brown (7.5YR4/4) silty clay loam or fine silt loam; moderate medium subangular blocky structure; firm; common fine roots; few fine brown soft concretions; clear wavy boundary. 7 to 11 inches thick.
B22 12195	16 to 21 inches	Strong brown (7.5YR5/6) fine silt loam; moderate fine subangular blocky structure; firm; slightly hard when dry; common small roots; few fine brown soft concretions; clear wavy boundary. 4 to 6 inches thick.
B3mg1 12196	21 to 31 inches	Mottled light brownish gray (10YR6/2), pale brown (10YR6/3), brown (10YR5/3) and dark yellowish brown (10YR4/4) silt loam; mottles are many medium faint; moderate medium subangular blocky structure; very firm in places; friable when crushed; few roots; common patchy black coatings on peds; much concretionary material; abrupt irregular boundary. 8 to 40 inches thick.
B3mg2 12197	31 to 43 inches	Brown to dark brown (7.5YR4/4) silt loam with common thin distinct streaks of light brownish gray (10YR6/2); weak to moderate coarse platy structure; 20 percent polygons; firm; few small roots; few black coatings or stains on peds; gradual wavy boundary. 4 to 12 inches thick.
B3mg3 12198	43 to 55 inches	Reddish brown (5YR4/4) to dark brown (7.5YR4/4) loam to clay loam; few thin streaks of light brownish gray (10YR6/2); weak coarse angular blocky structure to massive; 10 percent polygons; firm; brittle; few roots at top of this horizon; gradual wavy boundary. 4 to 12 inches thick.
B3mg4 12199	55 to 65 inches	Reddish brown (5YR4/4) to dark brown (7.5YR4/4) loam to clay loam; few coarse distinct streaks of light brownish gray (10YR6/2) few patchy black stains or coatings on peds; weak coarse angular blocky structure to massive; firm; almost brittle; 5 percent polygon; gradual wavy boundary. 8 to 10 inches thick.
IIIu 12200	65 to 74 inches	Reddish brown (5YR4/4) sandy loam with few coarse distinct streaks of light brownish gray (10YR6/2); massive; friable.
IIIu 12201	74 to 90 inches plus	Pale brown (10YR6/3) sand; single grain; water table at 74".

Remarks: Colors given are for moist soil. Some horizons have lower oven-dry than field-moist bulk density. The field-moist clods were air-dried and then remoistened to 30-cm. tension before being oven-dried and the volume determined. Wetting to 30-cm. tension against a weak confining pressure may result in irreversible expansion. The result would be lower oven-dry bulk density values than would be obtained were the clods oven-dried directly.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Fayette County, Tennessee SOIL TYPE Grenada silt loam, terrace phase

Lincoln LAB NOS. 12217 - 12225 SOIL NOS. S59Tenn-24-4

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12217	0-6	Ap	0.1	0.7	1.2	2.3	1.1	78.8	15.8	47.3	33.6	-	sil
12218	6-11	B21	<0.1	0.2a	0.4a	1.0a	0.7a	70.5	27.2	33.8	37.8	-	sicl/sil
12219	11-18	B22	<0.1	0.1a	0.2a	0.8a	0.7a	70.5	27.7	35.1	36.5	-	sicl
12220	18-26	B23g	<0.1	0.2a	0.5a	1.7a	0.9a	74.8	21.9	37.1	39.4	-	sil
12221	26-40	B3mg1	<0.1	0.4	1.1	4.1	1.7	73.5	19.2	40.0	37.0	-	sil
12222	40-53	B3mg2	<0.1	1.2	3.5	14.3	5.1	58.2	17.7	42.7	27.0	-	sil
12223	53-60	B3mg3	0.1	2.5	7.7	32.9	9.6	35.5	11.7	43.2	16.4	-	fsl
12224	60-66	Du1	0.2	3.2	9.5	41.3	11.1	24.8	9.9	42.2	10.9	-	fsl
12225	66-72+	Du2	0.2	3.7	13.0	56.8	9.8	11.9	4.6	39.4	4.5	-	lfs

	8C1a pH H_2O 1:1			6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	5C1a Free Iron as Fe_2O_3 %	BULK DENSITY b Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12217	6.2			0.77	0.086	9	1.5	13.1	1.48	24.1	1.43	1.50	6.7
12218	5.2			0.32	0.057	6	2.5	9.2	1.51	23.6	1.43	1.51	10.9
12219	5.0			0.21	0.044		2.8	11.9	1.48	25.3	1.41	1.49	11.4
12220	5.0			0.14	0.031		2.5	15.4	1.47	26.9	1.43	1.48	9.8
12221	5.1			0.11			2.2	15.5	1.55	23.7	1.50	1.56	9.2
12222	5.0			0.08			1.5	11.6	1.66	20.9	1.59	1.64	7.2
12223	5.1			0.07			0.8	7.6	1.83	13.2	1.77	1.79	4.6
12224	5.1			0.03			0.6						4.3
12225	5.1			0.05			0.4						2.0

	5A1a CATION EXCHANGE CAPACITY NH_4OAc (SUM)	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat. % on Sum Cations	5C1 Base Sat. % NH_4OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg
		milliequivalents per 100g soil							<— me/100g —>		
12217	8.2	6.4	1.5	<0.1	0.3	3.9	68	100	8.2	12.1	4.3
12218	11.5	4.1	3.7	0.1	0.2	7.8	51	70	8.1	15.9	1.1
12219	12.3	1.6	3.4	0.1	0.2	11.3	32	43	5.3	16.6	0.5
12220	11.4	0.7	3.0	0.1	0.2	10.5	28	35	4.0	14.5	
12221	10.2	0.4	2.7	0.1	0.2	9.8	26	33	3.4	13.2	
12222	8.6	0.1	2.5	0.1	0.2	8.0	27	34	2.9	10.9	
12223	5.2	<0.1	1.7	0.1	0.1	4.8	28	36	1.9	6.7	
12224	4.8	<0.1	1.5	0.1	0.1	4.4	28	35	1.7	6.1	
12225	2.0	<0.1	0.4	<0.1	<0.1	1.9	17	20	0.4	2.3	

a. Few Fe-Mn? bearing aggregates.
b. See remarks in description.

Soil type: Grenada silt loam, terrace phase
Soil No. : S59Tenn-24-4
Location: Fayette County, Tennessee, about 17 miles south of Somerville on Wolf River terrace, about 2 miles southwest of LaGrange, 1 mile west of LaGrange-Michigan City Road and 1/2 mile north of gravel road on Cowan Brothers farm. Photo ADB-3F-96(1950)

Vegetation and use: Corn.

Slope and Land Form: Nearly level (0-2 percent) broad flat river terrace.

Drainage and Permeability: Moderately well drained. Runoff slow to medium. Permeability moderate in upper part, slow in lower part.

Parent Material: Loess covered terraces and/or old alluvium from loessial uplands.

Samples Collected by: Edwood Pedersen, George Phibbs, R. K. Moore, W. C. Mangrum and D. K. Springer - October 15, 1959.

Profile Described by: D. K. Springer - October 15, 1959

Horizon and Lincoln Lab No.	Depth	
Ap 12217	0 to 6 inches	Brown to dark brown (10YR4/3) silt loam; weak fine granular structure; very friable; common fine roots; clear wavy boundary. 3 to 7 inches thick.
B21 12218	6 to 11 inches	Dark brown (7.5YR4/4) heavy-silt loam; weak fine subangular blocky structure; friable; few fine roots; clear wavy boundary. 4 to 7 inches thick.
B22 12219	11 to 18 inches	Dark brown (7.5YR4/4) light silty clay loam; weak fine and medium subangular blocky structure; firm when moist slightly hard when dry; few fine roots; few small dark brown concretions; clear wavy boundary. 3 to 8 inches thick.
B23g 12220	18 to 26 inches	Dark brown (7.5YR4/4) silt loam with common medium faint mottles of light brownish gray (10YR6/2) and pale brown (10YR6/3); weak medium subangular blocky structure; friable; few fine roots; few small pores; few small black concretions; clear wavy boundary. 3 to 6 inches thick.
B3mg1 12221	26 to 40 inches	Light brownish gray (10YR6/2) silt loam comprising exterior of polygon faces and some patches between tops of polygons totaling about 20 percent of horizon; interface of polygons consists of strong brown (7.5YR5/6) silt loam 2 to 4 mm thick and interior of polygons consists of brown to strong brown (7.5YR5/4-5/6) silt loam; polygons break into weak fine subangular blocky structure; firm; compact brittle; few black stains and very few small black soft concretions; clear wavy boundary. 12 to 20 inches thick.
B3mg2 12222	40 to 53 inches	Dark brown (7.5YR4/4) silt loam interior of polygons; light brownish gray (10YR6/2) silt loam on polygon faces; polygon faces comprise about 15 percent of horizon; weak coarse prismatic structure breaking to somewhat massive to weak fine subangular blocky structure; firm; very compact and brittle; few black hard and soft concretions; clear wavy boundary. 11 to 16 inches thick.
B3mg3 12223	53 to 60 inches	Dark brown (7.5YR4/4) silt loam interior of polygons and light brownish gray (10YR6/2) silt loam on polygon faces; polygon faces comprise about 10 percent of horizon; weak coarse prismatic structure breaking to weak subangular blocky structure; firm; brittle; clear wavy boundary. 7 to 11 inches thick.
Du1 12224	60 to 66 inches	Strong brown (7.5YR5/6) loamy fine sand; massive, firm; clear wavy boundary.
Du2 12225	66 to 72 inches plus.	Pale brown (10YR6/3) sand; single grain; loose. Water table at 66 inches.

Remarks: Colors given are for moist soil. Some horizons have lower oven-dry than field-moist bulk density. The field-moist clods were air-dried and then remoistened to 30-cm. tension before being oven-dried and the volume determined. Wetting to 30-cm. tension against a weak confining pressure may result in irreversible expansion. The result would be lower oven-dry bulk density values than would be obtained were the clods oven-dried directly.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Guthrie silt loam, level phase SOIL Nos. S54Tenn-16-19 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551363 - 551366

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Size class and particle diameter (mm) 3A1 Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2 - 19	19 - 76
		Pct. of < 2 mm														Pct.	Pct. of < 76mm	
0-1	A1		65.8	15.8	0.2[a]	0.9[a]	1.4	7.7	8.2		39.2	39.7				-		
1-5	A2		65.1	16.1	0.2	0.6	1.4	7.8	8.8		38.1	40.8				-		
5-28	Bg		60.4	21.6	0.3	0.6	1.3	7.1	8.7		34.6	39.4				3		
28-60+	C		60.8	25.1	0.8	1.0	1.3	4.7	6.3		35.8	34.5				15		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density: 4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: Pct.	4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in	pH:	8C1c (1:1) KCl	8C1a (1:1) H_2O
0-1	4.06	0.270	15			0.3											5.0
1-5	1.64	0.122	15			0.4											5.2
5-28	0.36	0.048				0.6											4.7
28-60+	0.13	0.024				1.8											4.9

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations		6G1d Ext. Al		Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations	5C1 NH_4OAc
	meq/100 g															Pct.	Pct.
0-1	6.6	1.2	0.2	0.2		10.8	19.0									43	
1-5	3.5	0.8	0.1	0.1		6.7	11.2									40	
5-28	1.8	0.2	0.1	0.1		7.5	9.7									23	
28-60+	5.1	0.4	0.1	0.1		4.6	10.3									55	

Depth (in.)	Clay Fraction Analysis 7Alb-d: Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite	
	7A2 X-ray						7A3		
0-1									
1-5									
5-28	xx		xx				xx		
28-60+									

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

a Undecomposed organic matter in sand fraction.

USDA-SCS-BEATTSVILLE, MD. 1966

Soil Type: Guthrie silt loam, level phase.
Soil No.: S54Tenn-16-19
Location: Coffee County, Tennessee. 4.0 miles south of Manchester on highway 55 to Belmont. 2.0 miles east of Belmont on gravel road to an abandoned farm road on south side of road. 400 yards south on old farm road to corner of large forested area. 200 yards southwest of northeast corner of forest and 75 yards of eastern boundary of forest. Aerial photo 5G-63.

Horizon and Beltsville Lab. No.	
O1, O2 Not Sampled	1 to 0 inches. Forest litter and leaf mold.
A1 551363	0 to 1 inch. Dark gray (10YR 4/1) very friable silt loam; weak fine crumb structure.
A2 551364	1 to 5 inches. Gray (10YR 5/1) or dark grayish brown (2.5Y 4/2) very friable silt loam; weak fine to medium crumb structure; few fine faint yellowish brown mottles.
Bg 551365	5 to 28 inches. Grayish brown (2.5Y 5/2) silty clay loam which is friable when moist but becomes hard or very hard when dry; massive in place, breaks to moderate fine to medium subangular blocky structure; common fine to medium prominent mottles of yellowish brown (10YR 5/6).
C 551366	28 to 60 inches plus. Gray or light gray (10YR 6/1 - 7/1) firm silty clay with many medium to coarse prominent mottles of yellowish brown, strong brown, and brownish yellow, and a few yellowish red mottles in the lower part; massive to strong coarse angular blocky structure; contains a few small angular chert fragments which increase in size and numbers with depth.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Guthrie silt loam, level phase SOIL Nos. S54Tenn-16-20 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551367 - 551370

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Size class and particle diameter (mm) 3A1 Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm														Pct.	Pct. of < 76mm	
0-1	A1		57.7	16.1	7.4	1.9	1.5	7.4	8.0[a]		36.7	34.0				-		
1-5	A2		65.7	14.3	0.8	0.9	1.3	7.9	9.1[a]		42.3	38.0				-		
5-28	Bg		61.8	23.5	0.2	0.9	1.0	5.1	7.5		42.2	30.8				-		
28-60+	C		55.1	28.0	0.2	0.8	1.2	6.0	8.7		34.9	33.1				-		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct	Ext. iron as Fe_2O_3 Pct.	Bulk density: g/cc	4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: Pct.	4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in		pH 8C1c (1:1) KCl	8C1a (1:1) H_2O
0-1	6.7	0.407	16			0.3												3.8
1-5	2.16	0.127	17			0.2												4.1
5-28	0.38	0.049				0.3												4.3
28-60+	0.10	0.030				1.0												4.3

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations		6G1d Ext. Al			Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																	
0-1	0.2	0.2	0.1	0.2		27.4	28.1										2	
1-5	0.2	0.1	0.1	0.1		10.8	11.3										4	
5-28	0.5	0.4	0.1	0.1		10.5	11.6										9	
28-60+	0.1	0.2	0.1	0.1		11.1	11.6										4	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite	
	7A2 X-ray						DTA 7A3		
0-1									
1-5									
5-28	xx		xx				xx		
28-60+									

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

a Undecomposed organic matter in sand fractions

Soil Type: Guthrie silt loam, level phase.
Soil No.: S54Tenn-16-20
Location: Coffee County, Tennessee. 1.9 miles south of David Grocery at Hopewell on Maple Springs-Plainview-Hopewell Road. 100 feet west of road and 90 feet north of drainageway in forested area. Aerial photo 60-39.

Horizon and Beltsville Lab. No.	
O1, O2 Not Sampled	1 to 0 inches. Forest litter and leaf mold.
A1 551367	0 to 1 inch. Dark gray (10YR 4/1) very friable silt loam; weak fine crumb structure.
A2 551368	1 to 5 inches. Gray (10YR 5/1) or dark grayish brown (2.5Y 4/2) very friable silt loam; weak fine to medium crumb structure; few fine faint yellowish brown mottles.
Bg 551369	5 to 28 inches. Grayish brown (2.5Y 5/2) silty clay loam which is friable when moist but becomes hard or very hard when dry; massive in place, breaks to moderate fine to medium subangular blocky structure; common fine to medium prominent mottles of yellowish brown (10YR 5/6).
C 551370	28 to 60 inches plus. Gray or light gray (10YR 6/1 - 7/1) firm silty clay with many medium to coarse prominent mottles of yellowish brown, strong brown, and brownish yellow, and a few yellowish red mottles in the lower part; massive to strong coarse angular blocky structure; contains a few small angular chert fragments which increase in size and numbers with depth.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Fayette County, Tennessee SOIL TYPE Henry Silt Loam

Lincoln LAB NOS. 12237 - 12246 SOIL NOS. S59Tenn-24-6

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1 COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
12237	0-6	Ap	1.8a	1.1a	0.4b	0.4b	0.9b	86.1	9.3	51.3	35.8	Tr.	si
12238	6-13	A2g	2.0a	1.4a	0.5a	0.4a	0.5b	80.9	14.3	33.6	48.0	Tr.	sil
12239	13-18	B21g	1.8a	1.1a	0.4a	0.3a	0.4b	67.0	29.0	28.8	38.7	Tr.	sicl
12240	18-32	B22g	0.7a	0.9a	0.5a	0.5a	0.6b	72.4	24.4	36.0	37.2	Tr.	sil
12241	32-47	B31g	1.4a	1.2a	0.5a	0.5a	0.6a	73.1	22.7	35.4	38.5	Tr.	sil
12242	47-61	B32g	0.6a	1.8a	0.8a	1.0a	0.9a	71.9	23.0	38.3	35.0	Tr.	sil
12243	61-80	B33g	0.2a	0.4a	0.4a	0.6a	0.6b	79.7	18.1	41.1	39.5	Tr.	sil/si
12244	80-107d	B34g	0.4a	0.5a	0.6a	0.7b	1.0b	79.9	16.9	44.6	36.6	Tr.	sil/si
12245	80-107e	B34g	0.3a	0.4a	0.3a	0.4a	0.5b	78.2	19.9	40.4	38.5	Tr.	sil
12246	107-145+	C1g	1.6a	1.4a	1.5b	1.6b	1.0c	72.7	20.2	38.8	35.5	Tr.	sil

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY f Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12237	5.1			0.68	0.063	11	1.7	18.7	1.46	22.9	1.44	1.45	5.1
12238	4.4			0.18	0.029		1.8	19.1	1.50	23.6	1.46	1.49	6.7
12239	4.8			0.18	0.043		1.3	15.3	1.67			1.70	13.1
12240	5.0			0.08	0.026		1.3	16.9	1.53	26.1	1.46	1.58	12.0
12241	5.5			0.14			1.6	19.7	1.48	26.5	1.41	1.53	12.3
12242	6.2			0.14			2.4	19.3	1.50	27.0	1.42	1.55	12.6
12243	7.1			0.11			2.0	21.3	1.51	29.4	1.43	1.53	10.5
12244	7.4			0.11			2.0	17.5	1.60	26.0	1.50	1.61	9.4
12245	7.3			0.14			0.9	19.5	1.48	30.3	1.39	1.49	10.4
12246	7.5			0.10			2.3						9.8

	5A1a CATION EXCHANGE CAPACITY NH4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat.% on Sum Cations	5C1 Base Sat.% NH_4OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg
		milliequivalents per 100g soil							← me/100g →		
12237	7.3	3.3	1.0	0.1	0.2	5.6	45	63	4.6	10.2	
12238	8.0	1.7	0.6	0.2	0.1	9.0	22	32	2.6	11.6	
12239	15.8	1.5	2.3	0.9	0.2	14.0	26	31	4.9	18.9	0.6
12240	15.1	2.1	2.8	1.4	0.2	11.8	36	43	6.5	18.3	0.8
12241	16.0	4.8	4.1	2.1	0.2	7.8	59	70	11.2	19.0	1.2
12242	16.6	7.2	4.7	2.5	0.3	6.1	71	88	14.7	20.8	1.5
12243	13.2	6.8	4.1	2.2	0.2	3.9	77	101	13.3	17.2	1.6
12244	11.6	6.0	3.3	1.9	0.2	4.4	72	98	11.4	15.8	1.8
12245	14.5	7.3	4.6	2.3	0.3	3.2	82	100	14.5	17.7	1.6
12246	10.4	5.2	3.0	1.7	0.2	2.9	78	97	10.1	13.0	1.7

a. Many Fe-Mn? bearing aggregates.
b. Common Fe-Mn? bearing aggregates.
c. Few Fe-Mn? bearing aggregates.
d. Brown separation.
e. Gray separation.
f. See remarks in description.

Soil type: Henry silt loam
Soil No. : 859Tenn-24-6
Location: Fayette County, Tennessee, 5 miles northwest of Somerville on paved road by Moorman Gin, 300 yards southwest of road at Old Fowlers Store on David Fowler farm. Photo AIB-2F-44(1950)

Vegetation and Use: Cultivated - grain sorghum.

Slope and Land Form: Nearly flat upland.

Drainage and Permeability: Poorly drained, very slow runoff and internal drainage; slow permeability.

Parent Material: Loess

Samples Collected by: Edwood Pedersen, George Phibbs, D. K. Springer, R. L. Flowers, R. K. Moore, E. C. Sease - October 16, 1959.

Profile Described by: D. K. Springer and E. C. Sease - October 16, 1959.

Horizon and Lincoln Lab.No.	Depth	
Ap 12237	0 to 6 inches	Brown to dark brown (10YR4/3) silt loam, weak fine granular structure; very friable; common fine roots; many small dark brown and black hard concretions on surface and throughout horizon; clear smooth boundary. 4 to 7 inches thick.
A2g 12238	6 to 13 inches	Gray (10YR6/1-5/1) silt loam; weak fine platy structure; friable; common fine roots; many small soft and hard brown and black concretions; clear wavy boundary. 5 to 10 inches thick.
B21g 12239	13 to 18 inches	Gray (10YR5/1-6/1) silty clay loam with shades of grayish brown (10YR5/2); weak fine subangular blocky structure; friable; few fine roots; many small hard and soft brown concretions; few large concretions; clear wavy boundary. 4 to 9 inches thick.
B22g 12240	18 to 32 inches	Grayish brown (10YR 5/2) silty clay loam with few medium faint mottles of gray (10YR5/1-6/1); weak medium subangular blocky structure; friable; few small roots; few small brown hard concretions; gradual smooth boundary. 8 to 15 inches thick.
B31g 12241	32 to 47 inches	Gray (10YR5/1) silt loam with common medium faint mottles of gray (10YR6/1) and grayish brown (10YR5/2); weak coarse angular blocky structure; friable; few small roots; few fine pores; common small hard and soft concretions; gradual smooth boundary. 14 to 16 inches thick.
B32g 12242	47 to 61 inches	Mottled grayish brown (10YR5/2), gray (10YR5/1), yellowish brown (10YR5/4), dark yellowish brown (10YR4/4) and dark gray (10YR4/1) silty clay loam with pockets of silt loam; weak coarse angular blocky structure; friable; many small pores and old root channels filled with gray (10YR4/1) clay and black organic stains; common hard and soft brown and black small concretions, few large concretions; clear wavy boundary. 8 to 17 inches thick.
B33g 12243	61 to 80 inches	Dark yellowish brown (10YR4/4) silt loam with many medium faint mottles of grayish-brown (10YR5/2), gray (10YR5/1) and yellowish brown (10YR5/4); weak coarse angular blocky structure to massive; friable; common fine pores and root channels; root channels filled with gray (10YR4/1) clay; common dark reddish brown (5YR3/3) soft concretions; clear wavy boundary.
B34g 12244	80 to 107 inches	Dark yellowish brown (10YR4/4) silt loam with few streaks or tubes of grayish brown (10YR5/2); massive; firm in places; friable to crush; few small roots (probably trumpet vine roots); few small pores; few dark brown and black stains; common fine soft brown and black concretions, some are hard.
B34g 12245	80 to 107 inches	Gray (10YR5/1) silt vertical streaks 1 to 2½ inches in diameter, with few patches of dark gray (10YR4/1) clay; some of the vertical gray streaks may be old crayfish holes.
C1g 12246	107 to 145 plus inches	Brown (10YR5/3) silt loam with common fine faint mottles of light brownish gray (10YR6/2) and yellowish brown (10YR5/6); massive; friable; few small brown and black soft and hard concretions.

Remarks: Colors given are for moist soil. There was some discussion about the B horizons 32 to 107 inches, being a fragipan; not as dense as most fragipans. Some horizons have lower oven-dry than field-moist bulk density. The field-moist clods were air-dried and then remoistened to 30-cm. tension before being oven-dried and the volume determined. Wetting to 30-cm. tension against a weak confining pressure may result in irreversible expansion. The result would be lower oven-dry bulk density values than would be obtained were the clods oven-dried directly.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Fayette County, Tennessee SOIL TYPE Henry Silt Loam

Lincoln LAB NOS. 12247 - 12256 SOIL NOS. S59Tenn-24-7

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
12247	0-8	Ap	1.7a	1.5a	0.6a	0.9a	1.0b	85.1	9.2	53.0	33.5	Tr.	si
12248	8-18	A2g1	3.3a	2.0a	0.6a	0.8a	0.7a	79.7	12.9	39.3	41.4	Tr.	sil
12249	18-51	A2g2	1.7a	1.4a	0.6a	0.9a	0.7a	78.2	16.5	37.1	42.2	Tr.	sil
12250	18-32	B2g1	0.6a	1.1a	0.6a	0.9a	0.7a	73.3	22.8	35.6	38.8	Tr.	sil
12251	32-40	B2g2	0.5a	1.1a	0.5a	0.8a	0.9a	72.5	23.7	36.4	37.4	Tr.	sil
12252	40-57	d B3g1	<0.1	0.2a	0.2a	0.4a	0.8a	80.4	18.0	40.5	40.9	Tr.	sil
12253	40-57	e B3g1	0.5a	1.3a	0.7a	1.1a	0.9a	75.9	19.6	38.6	38.7	Tr.	sil
12254	57-84	d B3g2	<0.1	0.2b	0.6c	1.4c	0.9c	80.2	16.7	42.9	38.8	Tr.	sil
12255	57-84	e B3g2	0.3a	0.6a	0.6b	1.3b	1.0b	78.1	18.1	41.6	38.1	Tr.	sil
12256	84-121+	C1	0.9a	1.4b	3.0	7.2	2.0	68.1	17.4	37.6	35.5	Tr.	sil

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6H1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY f Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12247	5.3			0.66	0.065	10	2.4	16.0	1.42	24.4	1.42	1.43	5.6
12248	4.9			0.17	0.026		2.1	17.2	1.48	24.2	1.44	1.46	6.0
12249	5.4			0.14	0.025		2.0	16.4	1.48	25.6	1.45	1.48	9.2
12250	5.1			0.14			1.5	18.4	1.54	25.0	1.47	1.56	11.4
12251	5.1			0.10			1.8	16.3	1.56	25.9	1.47	1.54	12.7
12252	5.7			0.07			2.0	13.6	1.46	31.6	1.37	1.44	10.5
12253	5.6			0.11			2.0	12.2	1.62	24.5	1.52	1.59	10.7
12254	7.0			0.12			1.9	11.3	1.57	26.0	1.47	1.55	9.2
12255	6.9			0.12			1.7	9.2	1.64	24.4	1.50	1.60	10.1
12256	7.3			0.10			1.6						8.5

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat. % on Sum Cations	5C1 Base Sat. % NH_4OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg
	←	milliequivalents per 100g soil				→			← me/100g →		
12247	7.9	4.2	0.7	0.1	0.1	5.8	47	64	5.1	10.9	
12248	8.0	2.1	1.2	0.1	0.1	5.8	38	44	3.5	9.3	1.8
12249	10.6	2.3	2.7	0.7	0.2	7.8	43	56	5.9	13.7	0.8
12250	13.3	2.6	3.6	0.9	0.2	9.5	43	55	7.3	16.8	0.7
12251	16.4	4.2	5.4	1.3	0.3	9.3	55	68	11.2	20.5	0.8
12252	13.6	4.9	5.0	1.4	0.2	6.3	65	84	11.5	17.8	1.0
12253	13.8	4.6	5.0	1.4	0.2	6.3	64	81	11.2	17.5	0.9
12254	11.9	5.4	4.4	1.5	0.2	3.9	75	97	11.5	15.4	1.2
12255	15.1	5.8	5.2	1.6	0.2	4.1	76	85	12.8	16.9	1.1
12256	8.9	4.6	3.0	1.2	0.1	3.2	74	100	8.9	12.1	1.5

a. Many Fe-Mn? bearing aggregates.
b. Common Fe-Mn? bearing aggregates.
c. Few Fe-Mn? bearing aggregates.
d. Brown material.
e. Gray material.
f. See remarks in description.

Soil type: Henry silt loam
Soil No. : 859Tenn-24-7
Location: Fayette County, Tennessee, about 5 miles northwest of Somerville on State Highway 59. In field 50 feet north of highway about 100 yards east of dirt road between Fowler and Wilson farm. Photo ADB-2F-46(1950)

Vegetation and Use: Cotton

Slope and Land Form: Nearly flat upland.

Drainage and Permeability: Poorly drained, very slow runoff and internal drainage; slow permeability.

Parent Material: Loess

Samples Collected by: Edwood Pedersen, George Phibbs, D. K. Springer, R. L. Flowers, Louis Dungan, R. K. Moore, W. C. Mangrum, and E. C. Sease-October 17,1959.

Profile Described by: E. C. Sease and D. K. Springer - October 17, 1959.

Horizon and Lincoln Lab.No.	Depth	
Ap 12247	0 to 8 inches	Dark grayish brown (10YR4/2) silt loam; weak fine granular structure; very friable; common fine roots; common small hard concretions on surface and throughout this layer; bottom inch of Ap weak fine platy structure; appears to be plow pan; clear smooth boundary. 7 to 9 inches thick.
A2g1 12248	8 to 18 inches	Gray (10YR5/1-6/1) silt loam; weak coarse platy breaking into weak fine granular structure; when picked out it breaks out into very weak subangular blocky structure; very friable; many medium pores; many fine and medium soft and hard brown concretions; clear wavy boundary. 8 to 13 inches thick.
A2g2 12249	18 to 51 inches	Gray (10YR5/1-6/1) silt loam with some light brownish gray (10YR6/2); weak medium subangular blocky structure breaking into weak fine granular structure; very friable; common small brown soft and hard concretions; abrupt irregular boundary; this is a tongue about 3 to 6 inches in diameter and extends from 18" to 51". It is probably an old burrow that has been filled with material from above.
B2g1 12250	18 to 32 inches	Gray (10YR6/1-5/1) silty clay loam; with few medium faint mottles of grayish brown (10YR5/2) weak medium subangular blocky structure; friable, slightly plastic and slightly sticky; hard; many fine pores; common small brown and black concretions; clear wavy boundary. 9 to 10 inches thick.
B2g2 12251	32 to 40 inches	Grayish brown (10YR5/2) silty clay loam; with common coarse faint mottles of gray (10YR6/1) and yellowish brown (10YR5/6); weak coarse prismatic structure breaking into weak coarse angular blocky structure; firm; slightly plastic and sticky; hard; patches of dark gray (10YR4/1) and black (5YR2/1) on some peds; few small pores; common small brown and black hard and soft concretions; clear wavy boundary. 8 to 12 inches thick.
B3g1 12252 (brown) 12253 (gray)	40 to 57 inches	Dark yellowish brown (10YR4/4-3/4) silt loam, with many medium faint mottles or streaks of grayish brown (10YR5/2), pale brown (10YR6/3)and gray (10YR6/1); weak medium angular blocky structure to massive; friable; firm in place; gray (10YR6/1) clay in old root channels; few small pores; few dark brown (10YR3/3) soft concretions; clear wavy boundary. 7 to 17 inches thick.
B3g2 12254 (brown) 12255 (gray)	57 to 84 inches	Dark yellowish brown (10YR4/4) silt loam; many medium faint mottles of yellowish brown (10YR5/6), light brownish gray (10YR6/2), and pale brown (10YR6/3); dark gray (10YR4/1) along old root channels; weak coarse angular blocky structure to massive; few black (5YR2/1) patches along old root channels and cracks; grayish brown (10YR5/2) vertical streaks about 1-1½ inches in diameter and from 6 to 10 inches apart; (these appear to be old crayfish holes.)
C1 12256	84 to 121 inches	Yellowish brown (10YR5/4) silt loam; massive; very friable; grayish brown (10YR5/2) silt loam in vertical streaks about 1-1½ inches in diameter and about 6 to 10 inches apart; (These appear to be old crayfish holes.)

NOTE: Evidence of many crayfish holes all through this profile. They were more noticeable below 40 inches mainly due to the contrast in color of the material in the old holes and the color of the horizon. Cotton roots did not penetrate the A2 horizon; an occasional trumpet vine root was found throughout the profile. Some evidence of weak fragipan in B3g1; not as dense as in a well developed fragipan. Colors given are for moist soil.

Some horizons have lower oven-dry than field-moist bulk density. The field-moist clods were air-dried and then remoistened to 30-cm. tension before being oven-dried and the volume determined. Wetting to 30-cm. tension against a weak confining pressure may result in irreversible expansion. The result would be lower oven-dry bulk density values than would be obtained were the clods oven-dried directly.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Holston loam, undulating phase SOIL Nos. S54Tenn-16-11 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551335 - 551338

Depth (In.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Size class and particle diameter (mm) 3A1 Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm														Pct. of < 76mm		
0-1	A1		50.1	6.1	2.3	4.5	7.4	19.1	10.5a		29.6	41.1				-		
1-8	A2		54.0	12.1	0.7	1.2	5.1	16.8	10.1		35.5	37.6				tr.		
11-36	B2		52.4	18.2	0.8	1.2	4.5	14.3	8.6		36.8	32.2				tr.		
36+	C		40.8	23.3	1.4	1.7	5.7	16.4	10.7		28.3	32.2				14		

Depth (In.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron 6G Fe2O3 Pct.	Bulk density: g/cc	4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: Pct.	4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in		pH 8C1c (1:1) KCl	8C1a (1:1) H_2O
0-1	8.8	0.346	25			0.8												4.3
1-8	1.34	0.072	19			1.1												4.6
11-36	0.28	0.038				1.9												4.5
36+	0.06	0.014				3.3												4.5

Depth (In.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations		6G1d Ext. Al		Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																
0-1	3.2	0.6	0.1	0.2		19.2	23.3									18	
1-8	0.5	0.2	0.1	0.3		7.0	8.1									14	
11-36	0.2	0.2	0.1	0.2		7.7	8.4									8	
36+	0.3	0.1	tr.	0.1		7.7	8.2									6	

Depth (In.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Ml.	Int.	Qtz.	Kl.	Gibbsite	
	7A2 X-ray						7A3		

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, ml = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

a Undecomposed organic matter in sand fractions.

USDA-SCS-BEAUTSVILLE, MD. 1966

Soil Type: Holston loam, undulating phase.
Soil No.: 854Tenn-16-11
Location: Coffee County, Tennessee. 0.75 mile south of Ragsdale School on gravel road in first forested area on east side of road. 20 feet east of road at northwest corner of forest. Aerial photo 6G-135.

Horizon and Belteville Lab. No.	
O1, O2 Not Sampled	1 to 0 inches. Forest litter and leaf mold.
A1 551335	0 to 1 inch. Grayish brown (10YR 5/2) very friable loam; weak fine crumb structure.
A2 551336	1 to 8 inches. Light yellowish brown (10YR 6/4) very friable loam; weak to moderate medium crumb structure.
B1 Not Sampled	8 to 11 inches. Yellowish brown (10YR 5/4 - 5/6) very friable heavy loam or silt loam; moderate medium crumb structure.
B2 551337	11 to 36 inches. Yellowish brown (10YR 5/6) very friable clay loam or silt loam; weak medium subangular blocky structure; a few grayish mottles in lower part.
C 551338	36 inches plus. Mottled red, yellow and gray friable heavy loam or clay loam; weak coarse subangular blocky structure; common medium prominent mottles; a few chert and quartz gravel present.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Holston loam, undulating phase SOIL Nos. S54Tenn-16-12 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551339 - 551342

Depth (in.)	Horizon	1B1b Total Sand (2–0.05)	Total Silt (0.05–0.002)	Total Clay (< 0.002)	Sand Very coarse (2–1)	Sand Coarse (1–0.5)	Sand Medium (0.5–0.25)	Sand Fine (0.25–0.1)	Sand Very fine (0.1–0.05)	Silt 0.05–0.02	Silt Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct of < 76mm	
0-1	A1		57.4	7.8	1.3	2.7	5.6	15.6	9.6		36.8	38.7				-		
1-8	A2		60.6	9.4	0.4	1.6	4.3	13.6	10.1		40.3	38.1				tr.		
11-34	B2		54.9	18.8	0.7	1.6	3.8	11.7	8.5		38.0	32.1				tr.		
34+	C		46.0	28.1	0.8	1.3	3.5	11.1	9.2		29.8	31.8				tr.		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density g/cc	4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content Pct.	4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in	pH 8C1c (1:1) KCl	8C1a (1:1) H_2O
0-1	4.04	0.161	25			1.1											4.5
1-8	1.90	0.075	25			1.0											4.6
11-34	0.29	0.031				2.0											4.6
34+	0.15	0.022				2.7											4.7

Depth (in.)	Extractable bases 5B1a 6N2d Ca	6B2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC 5A3a Sum cations		6G1d Ext. Al			Ratios to clay CEC Sum	Ext iron	15-bar water	8D3 Ca/Mg		Base saturation 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																	
0-1	1.6	0.7	tr.	0.3		11.0	13.6										19	
1-8	0.4	0.3	0.1	0.2		8.1	9.1										11	
11-34	0.3	0.5	0.1	0.2		6.7	7.8										14	
34+	0.1	0.5	0.1	0.1		9.3	10.1										8	

Depth (in.)	Clay Fraction Analysis 7A1b-d Mt.	Chl.	Vm.	Mi	Int.	Qtz	Kl.	Gibbsite
	7A2 X-ray						7A3	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

a Aggregates and undecomposed organic matter in sand fractions.

USDA-SCS BEATTSVILLE, MD 1966

Soil Type: Holston loam, undulating phase.
Soil No.: S54Tenn-16-12
Location: Coffee County, Tennessee. 0.5 mile west of Bradley Creek and 100 yards northeast of 90° curve on gravel road near county line. 50 yards east of gravel road and 10 feet north of dirt road in woods. (Elliot Farm) Aerial photo 6G-155.

Horizon and Beltsville Lab. No.	
O1, O2 Not Sampled	1 to 0 inches. Forest litter and leaf mold.
A1 551339	0 to 1 inch. Grayish brown (10YR 5/2) very friable loam; weak fine crumb structure.
A2 551340	1 to 8 inches. Light yellowish brown (10YR 6/4) very friable loam; weak to moderate medium crumb structure.
B1 Not Sampled	8 to 11 inches. Yellowish brown (10YR 5/4) very friable heavy loam or silt loam; moderate medium crumb structure.
B2 551341	11 to 34 inches. Yellowish brown (10YR 5/4 - 5/6) friable clay loam or silt loam; weak medium subangular blocky structure.
C 551342	34 inches plus. Mottled red, yellow and gray friable clay loam or heavy loam; weak coarse subangular blocky structure; a few chert and quartz gravel present.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Huntington silt loam, undulating phosphatic phase SOIL Nos. 854Tenn-16-17 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551357 - 551359

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Size class and particle diameter (mm) 3A1 — Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm														Pct.	Pct. of < 76mm	
0-12			70.2	22.3	0.2	0.3	0.3	1.5	5.2		41.9	34.5				-		
12-30			67.0	24.5	0.6	0.7	0.8	2.0	4.4		45.3	27.3				tr.		
30-36+			53.2	35.7	1.0	1.2	1.1	2.7	5.1		33.9	26.0				3		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density: g/cc	4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: Pct.	4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in	pH:	8C1c (1:1) KCl	8C1a (1:1) H_2O
0-12	1.31	0.133	10			2.4												6.3
12-30	0.95	0.110	9			2.5												6.4
30-36+	0.96	0.158	6			3.1												6.4

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations		6G1d Ext. Al			Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																	
0-12	9.7	0.7	0.2	0.1		5.4	16.1										66	
12-30	10.9	1.0	0.1	0.1		5.0	17.1										71	
30-36+	15.5	1.2	0.1	0.2		6.0	23.0										74	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray						7A3	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

0884-900-HYATTSVILLE, MD. 1966

Soil Type: Huntington silt loam, undulating phosphatic phase.
Soil No.: S54Tenn-16-17
Location: Coffee County, Tennessee. 3.0 miles west of Noah to private road on west side of Noah Fork Creek. 25 feet west of fence parallel to private road and 50 feet north of main gravel road. Aerial photo 50-50.

Horizon and Beltsville Lab. No.	
551357	0 to 12 inches. Dark brown (10YR 3/3) very friable silt loam; weak fine crumb structure.
551358	12 to 30 inches. Dark brown (10YR 3/3) friable heavy silt loam or silty clay loam; weak to moderate medium crumb structure.
551359	30 to 36 inches plus. Dark brown (10YR 4/3 - 3/3) heavy silty clay loam with a few fine faint grayish mottles; grades to stratified layers of loam, fine sandy loam and silt loam material containing varying amounts of gravel.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Putnam County, Tennessee SOIL TYPE Huntington silt loam

LAB NOS. 12692 - 12694 SOIL NOS. S59Tenn-71-31

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	3A1 INTERNATIONAL III 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12692	0-12	Ap	0.5a	0.7	1.6	8.9	11.2	54.6	22.5	37.6	34.3	-	sil
12693	12-25	C11	0.2a	1.2	3.3	17.4	15.9	41.9	20.1	45.2	24.3	Tr.	l
12694	25-43	C12	0.8	5.0	12.6	34.9	14.6	20.2	11.9	42.9	10.6	Tr.	fsl

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1b g/cc	4B2 15-Bar Water %
12692	6.9			0.80	0.078	10	2.2	20.8	1.59	21.5	1.59	1.66	9.5
12693	5.9			0.32	0.042	8	1.8	17.4	1.66	18.9	1.66	1.72	7.9
12694	5.4			0.13			1.2						4.9

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat. % on Sum Cations	5C1 Base Sat. % NH_4OAc	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g	6E1a $CaCO_3$ equivalent %
		milliequivalents per 100g soil									
12692	10.5	9.8	0.7	<0.1	0.1	3.9	73	101	10.6	14.5	< 1
12693	7.3	5.1	0.2	<0.1	0.1	4.4	55	74	5.4	9.8	
12694	3.8	2.5	0.3	<0.1	0.1	2.7	52	76	2.9	5.6	

a. Few Fe-Mn? bearing aggregates.

Soil type: Huntington silt loam

Soil Nos. : S59Tenn-71-31

Location: Putnam County, Tennessee. 1 mile southwest of Taylors Seminary along Town Creek. 100 yards south of gravel road; 40 feet west of county line. Photo AEW-5N-180.

Vegetation and Use: Annual lespedeza.

Slope and Land Form: Uneroded 2 percent slope; first bottom.

Drainage and Permeability: Well drained; surface runoff slow to medium; moderate permeability.

Parent Material: Recent alluvium derived largely from cherty, shaly, and sandy limestones.

Samples Collected by: J. A. Elder, G. T. Jackson, S. R. Bacon, B. C. Cox - December 15, 1959.

Profile Described by: G. T. Jackson, December 15, 1959.

Horizon and Lincoln Lab. No.	Depth	
Ap 12692	0 to 12 inches	Brown (10YR4/3) silt loam with weak fine granular structure; very friable; common fine roots; gradual, smooth boundary.
C11 12693	12 to 25 inches	Dark yellowish brown (10YR4/4) silt loam with a somewhat massive structure that breaks into weak coarse granular microstructure; friable; common fine roots; gradual wavy boundary.
C12 12694	25 to 43 inches	Yellowish brown (10YR5/4) sandy loam; weak coarse granular microstructure; nearly massive; friable; gradual, wavy boundary.
Du (not sampled)	43 inches plus	Strong brown (7.5YR5/6) coarse loamy sand; structureless; loose.

Remarks: Colors and consistency are for moist soil.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Putnam County, Tennessee SOIL TYPE Huntington silt loam

LAB NOS. 12695 - 12697 SOIL NOS. S59Tenn-71-32

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12695	0-12	Ap	0.2a	0.9	2.0	11.3	11.5	56.7	17.4	36.3	39.8	Tr.	sil
12696	12-25	C11	0.1a	1.7	4.7	28.4	17.3	37.7	10.1	50.0	22.5	Tr.	sl/l
12697	25-35	C12	0.1	0.7	4.0	36.3	21.4	29.4	8.1	57.1	17.0	Tr.	fsl

	pH 8C1a H_2O 1:1		6C1a Free Iron as Fe_2O_3 %	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	WATER CONTENT 4B1b 1/3-Bar %	4B2 15-Bar %
12695	6.7		1.8	1.08	0.096	11	20.9	1.57	21.9	1.58	1.62	20.1	7.5
12696	5.8		1.0	0.71	0.059	12	20.8	1.54	21.4	1.56	1.58	16.0	4.8
12697	5.7		0.8	0.29			20.0	1.54	20.1	1.56	1.57	12.3	3.7

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat.% in Sum Cations	5C1 Base Sat.% NH_4OAc	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g	6E1a $CaCO_3$ equivalent %
		milliequivalents per 100g soil									
12695	7.7	7.3	0.2	<0.1	0.1	3.6	68	99	7.6	11.2	< 1
12696	4.6	2.2	0.3	<0.1	<0.1	5.8	30	54	2.5	8.3	
12697	2.5	1.0	0.1	<0.1	<0.1	3.4	24	44	1.1	4.5	

a. Few Fe-Mn? bearing aggregates.

Soil type: Huntington silt loam

Soil Nos. : S59Tenn-71-32

Location: Putnam County, Tennessee; 3/4 mile southeast of Ditty; 100 yards north of gravel road, (Scott Farm). Photo AEW-5N-181.

Vegetation and Use: Fescue and white clover pasture.

Slope and Land Form: Uneroded 2 percent slope; first bottom.

Drainage and Permeability: Well drained; surface runoff slow to medium; moderate permeability.

Parent Material: Recent alluvium derived largely from cherty, shaly and sandy limestones.

Samples Collected by: J. A. Elder, G. T. Jackson, S. R. Bacon, B. C. Cox.

Profile Described by: George T. Jackson December 7, 1959

Horizon and Lincoln Lab. No.	Depth	
Ap 12695	0 to 12 inches	Brown (10YR5/3) silt loam with weak medium granular structure; very friable; many fine roots; gradual wavy boundary.
C11 12696	12 to 25 inches	Dark grayish brown (10YR4/2) loam with weak coarse granular structure; very friable; many fine roots; gradual wavy boundary.
C12 12697	25 to 35 inches	Variegated light yellowish brown (10YR6/4) and yellowish brown (10YR5/4) fine sandy loam; variegations are few medium faint; weak coarse granular structure; few roots; gradual wavy boundary.
Du (not sampled)	35 to 50 inches plus	Yellowish brown (10YR5/4) loamy fine sand with few medium faint variegations of strong brown (7.5YR5/6) and pale brown (10YR6/3); single grain structure; very friable; occasional fine roots.

Remarks: Colors and consistency are for moist soil.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Fayette County, Tennessee SOIL TYPE Iuka fine sandy loam

Lincoln LAB NOS. 12622 - 12630 SOIL NOS. S59Tenn-24-12

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12622	0-6	Ap	<0.1	1.1	4.7	17.4	5.5	63.8	7.5	54.1	23.4	-	sil
12623	6-14	C11	<0.1	1.4	12.2	44.8	4.0	30.7	6.9	38.6	10.9	-	fsl
12624	16-26	C12	<0.1	0.7	4.1	19.2	5.3	58.9	11.8	49.4	24.0	-	sil
12625	26-35	C13	<0.1	0.4	2.4	18.8	7.9	58.2	12.3	56.0	21.5	-	sil
12626	35-43	A1b	0.1	0.6	4.0	19.1	6.1	59.7	10.4	45.9	27.7	-	sil
12627	43-55	C11b	<0.1	0.5	3.0	18.1	4.5	63.5	10.4	46.6	30.2	-	sil
12628	55-67	C12b	0.2	3.1	8.4	22.4	4.6	52.2	9.1	41.6	24.3	-	sil
12629	67-84	C13b	0.5	4.1	16.2	42.9	3.4	27.3	5.6	31.2	12.5	-	fsl
12630	84-96+	Du	0.8	10.6	29.2	42.5	2.1	12.6	2.2	20.4	5.1	-	ls

LABORATORY NUMBER	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY a Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12622	5.1			0.40	0.041	10	0.9	10.5	1.57	19.4	1.56	1.58	3.2
12623	5.1			0.14	0.018		0.8	6.3	1.46	19.1	1.44	1.46	3.0
12624	4.9			0.18	0.027		1.2	10.9	1.43	25.5	1.41	1.44	4.2
12625	5.0			0.18			1.3	13.7	1.45	23.2	1.44	1.46	4.4
12626	5.4			0.20			1.0	15.1	1.51	20.4	1.47	1.51	4.8
12627	5.5			0.21			0.9	15.9	1.52	22.0	1.48	1.51	4.8
12628	5.3			0.17			1.0	13.0	1.68	16.6	1.66	1.68	4.4
12629	5.4			0.09			0.7	5.9	1.70	12.8	1.65	1.66	2.5
12630	5.4			0.04			0.3						1.0

LABORATORY NUMBER	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat. % in Sum Cations	5C1 Base Sat. % NH_4OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg
		milliequivalents per 100g soil							<me/100 g->		
12622	4.5	1.7	1.0	<0.1	0.2	3.9	43	64	2.9	6.8	1.7
12623	3.3	1.2	1.0	<0.1	0.1	2.9	44	70	2.3	5.2	1.2
12624	5.1	1.7	1.6	<0.1	0.1	4.8	41	67	3.4	8.2	1.1
12625	5.4	1.9	1.7	0.1	0.1	4.1	48	70	3.8	7.9	1.1
12626	5.0	1.8	1.3	0.1	0.1	4.4	43	66	3.3	7.7	1.4
12627	5.0	1.8	1.0	0.1	0.1	4.6	39	60	3.0	7.6	1.8
12628	4.5	1.4	1.2	0.1	0.1	3.9	42	62	2.8	6.7	1.2
12629	2.8	0.8	0.6	0.1	0.1	3.1	34	57	1.6	4.7	
12630	1.2	0.3	0.4	<0.1	<0.1	4.1	14	58	0.7	4.8	

a. See remarks in description.

Soil type: Dubs fine sandy loam
Soil No. : S59Tenn-24-12

Location: Fayette County, Tennessee, 9 miles south of Somerville, 1/2 mile west of State Highway No. 76 on gravel road, 75 yards south of road and 60 yards east of Hargis Creek on Dave Harsh farm. Photo ADB-2F-12(1950)

Vegetation and Use: Cotton - cultivated.

Slope and Land Form: Nearly level (0-1 percent) bottom land.

Drainage and Permeability: Moderately well drained; moderate runoff and moderate permeability.

Parent Material: Alluvium washed from loess and coastal plain material.

Samples Collected by: R. L. Flowers; W. C. Mangrum; R. K. Moore; Louis Dungan and E. C. Sease - November 13, 1959.

Profile Described by: E. C. Sease - November 13, 1959.

Horizon and Lincoln Lab.No.	Depth	
Ap 12622	0 to 6 inches	Yellowish brown (10YR5/4) fine loam; weak fine granular structure; very friable; few fine roots; clear smooth boundary. 5 to 8 inches thick.
C11 12623	6 to 14 inches	Dark yellowish brown (10YR4/4) fine sandy loam; weak fine granular structure; very friable; few thin layers of sand (5 to 10 mm thick stratified); abrupt smooth boundary. 6 to 8 inches thick.
Ca (Not sampled)	14 to 16 inches	Very pale brown (10YR8/4) sand; single grain, loose; abrupt smooth boundary. 2 to 3 inches thick.
C12 12624	16 to 26 inches	Yellowish brown (10YR5/4) loam; (stratified sand and silt); thin layers of stratifications and mottles of pale brown (10YR6/3), light yellowish brown (10YR6/4) and light brownish gray (10YR6/2) massive silt layers give the appearance of platy structure; very friable; clear smooth boundary. 10 to 12 inches thick.
C13 12625	26 to 35 inches	Brown (10YR4/3) to yellowish brown (10YR5/4) loam; very thin layers of silt and sand somewhat platy like; massive; very friable; abrupt smooth boundary. 8 to 9 inches thick.
A1b 12626	35 to 43 inches	Dark brown (10YR3/3) to dark yellowish brown (10YR3/4) silt loam; weak fine granular structure to massive; very friable; many small pores and holes; abrupt smooth boundary. 6 to 8 inches thick.
C11b 12627	43 to 55 inches	Dark brown (10YR3/3) loam; common medium faint mottles of grayish brown (10YR5/2) and brown (10YR5/3); weak medium subangular blocky structure to massive; friable; interior of peds dark brown (10YR3/3); ped coated with grayish brown (10YR5/2) silt also along holes and pores; common pores or voids and worm channels; lower part of this layer is vesicular like; clear smooth boundary. 10 to 14 inches thick.
C12b 12628	55 to 67 inches	Brown (10YR4/3) loam; with few medium faint mottles of brown (10YR5/3) grayish brown (10YR5/2) and dark yellowish brown (10YR3/4); massive; slightly brittle; when crushed breaks into weak fine granular structure; very friable; many small pores; many medium holes or voids; somewhat vesicular like; clear smooth boundary. 12 to 14 inches thick.
C13b 12629	67 to 84 inches	Brown (10YR4/3) sandy loam; with common medium faint mottles of brown (10YR5/3), dark yellowish brown (10YR4/4) and grayish brown (10YR5/2); massive; very friable; common small segregations of dark brown (10YR3/3); few pockets of light yellowish brown (10YR6/4) sand; diffuse smooth boundary.
Da 12630	84 to 96 inches plus	Light yellowish brown (10YR6/4) sand; single grain; loose. (Bulk sample - no clod samples)

Remarks: Colors given are for moist soil. The surface texture of this profile is not fine sandy loam, but areas with fine sandy loam textures are in delineations of this mapping unit. The delineations of this mapping unit are predominantly fine sandy loam. Some horizons have lower oven-dry than field-moist bulk density. The field-moist clods were air-dried and then remoistened to 30-cm. tension before being oven-dried and the volume determined. Wetting to 30-cm. tension against a weak confining pressure may result in irreversible expansion. The result would be lower oven-dry bulk density values than would be obtained were the clods oven-dried directly.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Jefferson loam SOIL Nos. 853Tenn-5-14 LOCATION Blount County, Tenn.

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53747-53750

Depth (in.)	Horizon	1B1b Total Sand (2–0.05)	Total Silt (0.05–0.002)	Total Clay (< 0.002)	Sand Very coarse (2–1)	Sand Coarse (1–0.5)	Sand Medium (0.5–0.25)	Sand Fine (0.25–0.1)	Sand Very fine (0.1–0.05)	Silt (0.05–0.02)	Silt Int. III (0.02–0.002)	Silt Int. II (0.2–0.02)	Silt (2–0.1)			Coarse fragments 2A2 > 2 Pct.	2 – 19 (Pct. of < 76mm)	19 – 76 (Pct. of < 76mm)
		Pct. of < 2 mm										3A1						
0-7	Ap	42.6	44.9	12.5	1.5	5.9	8.0	19.2	8.0	11.0	33.9	30.2	34.6			-		
7-14	A3	38.1	41.8	20.1	1.5	5.4	7.1	16.9	7.2	10.4	31.4	27.4	30.9			tr.		
14-33	B2	36.0	35.2	28.8	1.7	4.6	6.8	16.0	6.9	10.4	24.8	26.6	29.1			tr.		
33-54	C	34.1	24.3	41.6	2.9	5.2	6.5	13.8	5.7	7.5	16.8	21.1	28.4			4		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-7	1.34																	4.8
7-14	0.39																	4.6
14-33	0.17																	4.6
33-54	0.07																	4.9

Depth (in.)	Extractable bases 5B1a 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-7	0.3	-	tr.	tr.	0.3	6.0	6.3									5	
7-14	0.6	0.1	tr.	tr.	0.7	6.7	7.4									9	
14-33	0.5	0.3	tr.	tr.	0.8	9.3	10.1									8	
33-54	0.2	-	tr.	tr.	0.2	11.7	11.9									2	

Depth (in.)

USDA-SCS HYATTSVILLE MD. 1964

Soil Type: Jefferson loam
Soil No.: S53Tenn-5-14
Location: Blount County, Tennessee. 1 mile east of Montvale Springs.
Vegetation and land use: Idle - abandoned field. Virginia Pine sprouts and weeds.

Horizon and Beltsville Lab. No.	
Ap 53747	0 to 7 inches. Light brownish gray (10YR 6/2) or pale brown (10YR 6/3) very friable loam.
A3 53748	7 to 14 inches. Light yellowish brown (10YR 6/4) to yellowish brown (10YR 5/6) very friable loam. Moderate medium crumb structure.
B2 53749	14 to 33 inches. Strong brown (7.5YR 5/8) friable clay loam to silty clay loam; moderately developed fine to medium blocky structure.
C 53750	33 to 54 inches. Yellowish red (5YR 5/8) friable clay loam with a few distinct brownish yellow mottles; moderate fine to medium blocky structure.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Jefferson loam SOIL Nos. 853Tenn-5-20 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53768-53771

Depth (In.)	Horizon	1B1b Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (< 0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: Int. III (0.02-0.002)	Int. II (0.2-0.02)	(2-0.1)			Coarse fragments 2A2 > 2 Pct.	2-19 (Pct. of < 76mm)	19-76 (Pct. of < 76mm)
		Pct. of < 2 mm																
0-9	Ap	51.0	38.3	10.7	0.7	2.0	5.4	29.2	13.7	13.2	25.1	47.9	37.3			-		
9-20	B1	45.0	36.0	19.0	1.0	1.9	4.6	24.7	12.8	11.2	24.8	41.9	33.8			-		
20-34	B2	49.5	27.5	23.0	0.5	1.7	5.0	27.7	14.8	8.9	18.6	43.8	34.9			-		
34-54	C	43.4	30.3	26.3	0.2	1.4	4.6	25.0	12.2	10.9	19.4	40.8	31.2			-		

Depth (In.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-9	0.71																	5.8
9-20	0.21																	4.9
20-34	0.10																	4.8
34-54	0.04																	4.8

Depth (In.)	Extractable bases 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	5B1a Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-9	0.8	0.1	tr.	0.1	1.0	3.3	4.3									23	
9-20	0.4	-	tr.	0.1	0.5	5.3	5.8									9	
20-34	0.7	0.3	tr.	tr.	1.0	6.5	7.5									13	
34-54	0.5	0.2	tr.	tr.	0.7	9.7	10.4									7	

Depth (In.)					

Soil Type: Jefferson loam
Soil No.: S53Tenn-5-20
Location: Blount County, Tennessee. 6 miles east of Union Grove.
Vegetation and land use: Hay. Lespedeza and weeds.

Horizon and Beltsville Lab. No.	
Ap 53768	0 to 9 inches. Light yellowish brown (2.5Y 6/4) very friable loam.
B1 53769	9 to 20 inches. Brownish yellow (10YR 6/8) very friable loam; weakly fine blocky structure.
B2 53770	20 to 34 inches. Brownish yellow (10YR 6/8) to reddish yellow (7.5YR 6/8) friable sandy clay loam; weakly fine and medium blocky structural aggregates.
C 53771	34 to 54 inches. Reddish yellow (7.5YR 6/8) friable sandy clay loam; numerous prominent brownish yellow (10YR 6/6) mottles; moderately developed medium to fine blocky structure.

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Landisburg silt loam **LOCATION** Loudon County, Tennessee

SOIL NOS. S58Tenn-53-1 **LAB. NOS.** 7806-7814

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-9	Ap	3.7a	5.6a	4.4a	5.4a	4.0a	62.3	14.6	21.3	47.4	18	sil
9-15	B1	4.9a	5.2a	4.3a	5.4a	3.6a	58.7	17.9	20.4	44.5	18	sil
15-22	B2	7.6a	5.7a	4.2a	5.6a	4.4a	56.4	16.1	21.5	42.1	21	sil
22-25	B2m1	7.5a	5.2a	4.3a	6.0a	4.9a	56.5	15.6	23.0	41.5	32	sil
25-31	B2m2	12.4a	5.2a	3.9a	5.2a	4.3a	49.2	19.8	19.8	36.3	24	l
31-47	B31	5.9a	5.3a	4.0a	5.4a	4.2a	44.3	30.9	18.8	32.4	8	cl
47-54	B32	7.0a	6.2a	4.6a	6.6a	5.3a	45.6	24.7	21.4	32.8	11	l
54-60	C	7.9a	6.2a	4.8a	5.6a	3.9a	39.8	31.8	15.7	30.8	27	cl
25-40	tongue	9.9a	4.9a	3.9a	5.5a	4.5a	53.5	17.8	21.5	39.4	20	sil

DEPTH INCHES	pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3% 6C1a		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
0-9	5.0			1.60	0.096	16	1.3						5.4
9-15	4.8			0.27	0.031	9	1.6						6.2
15-22	4.8			0.12	0.016		1.5						5.7
22-25	4.7			0.02	0.010		1.0						4.2
25-31	4.6			0.06			1.6						5.8
31-47	4.5			0.02			2.6						11.1
47-54	4.6			0.05			2.8						9.3
54-60	4.5			0.02			2.2						10.3
25-40	4.7			0.02			1.2						5.4

DEPTH INCHES	5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat.% on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g
	←	milliequivalents per 100g. soil				→				
0-9	6.7	0.6	<0.1	10.0	<0.1	0.1	10	6	0.7	10.7
9-15	5.3	0.5	0.1	6.4	<0.1	0.1	13	10	0.7	7.1
15-22	4.4	0.3	0.1	5.4	<0.1	<0.1	9	7	0.4	5.8
22-25	3.3	<0.1	0.8	3.6	<0.1	<0.1	24	18	0.8	4.4
25-31	4.3	<0.1	<0.1	5.4	<0.1	<0.1	<1	<1	<0.1	5.4
31-47	6.6	<0.1	0.2	8.2	<0.1	<0.1	3	2	0.2	8.4
47-54	4.2	<0.1	0.1	6.3	<0.1	<0.1	2	2	0.1	6.4
54-60	4.9	<0.1	0.2	5.9	<0.1	<0.1	4	3	0.2	6.1
25-40	4.2	<0.1	0.1	5.4	<0.1	<0.1	2	2	0.1	5.5

a. Few smooth light brown concr. (Fe-Mn?)

Soil type: Landisburg silt loam
Soil Nos. : S58Tenn-53-1
Location: Loudon County, Tennessee; three miles west of Burton Hill in the southern part of Loudon County, east of the Little Tennessee River; elevation about 930 feet. (Field Sheet ANU IL-74).
Topography: The sampling site is on a uniform slightly concave slope about 5 percent in gradient. The uniform slope is about 900 feet long and is terminated by slightly steeper areas at the upper and lower end. According to the owner, the field was in corn about three years ago; neither fertilizer nor lime was applied at that time, nor has any fertilizer or lime ever been applied to the knowledge of the owner. Field has not been used since and is in weeds at the present time.
Physiography: Colluvial material deposited in a number of cycles of deposition.
Sampled by: L. T. Alexander, Joe A. Elder, R. H. Jordan, and Klaus W. Flach, April 7, 1958.
Described by: Klaus W. Flach.

Horizon and Lincoln Lab. Number	
Ap 7806	0 to 9 inches. Dark grayish brown (10YR 4/2 to 2.5Y 4/2) silt loam; weak to moderate fine and very fine granular structure; loose; abrupt and smooth boundary.
B1 7807	9 to 15 inches. Light olive brown to yellowish brown (10YR 5/4 to 2.5Y 5/4) silt loam; weak fine angular blocky structure with almost continuous very weak and nonshiny clay flow surfaces; weakly vesicular; very friable; gradual and smooth boundary.
B2 7808	15 to 22 inches. Light olive brown to light yellowish brown (2.5Y 5/4 to 10YR 6/4) heavy silt loam or silty clay loam; weak to moderate fine blocky structure with clay skins somewhat more distinctive than in the B1 horizon; friable; clear and smooth boundary.
B2m1 7809	22 to 25 inches. Light olive brown to grayish brown (2.5Y 5/4 to 2.5Y 5/2) silt loam with many medium and distinct light gray (2.5Y 6/1) and few fine and prominent yellowish brown (10YR 5/6) mottles; weak medium platy structure; very firm; the peds are very brittle; about 10 percent of the mass consists of subangular chert fragments of .5 centimeter average diameter; irregular and clear boundary. This horizon is 2 to 9 inches wide and extends in streaks into the B2m2 and B3 horizons to depth of 40 inches. The streaks are about 15 inches apart.
B2m2 7810	25 to 31 inches. Grayish brown to light brownish gray (2.5Y 5/2 to 6/2) cherty silt loam with common large and distinct mottles of yellowish brown (10YR 5/4) and discontinuous prominent dark yellowish brown (10YR 3/4) clay skins; weak to moderate coarse platy structure; firm; brittle; abrupt and wavy boundary.
B31 7811	31 to 47 inches. Strong brown (7.5YR 5/6) silt loam with common coarse and medium prominent gray (2.5Y 5/1) mottles and dark grayish brown (10YR 4/2 to 3/3) clay skins on the surface; weak to moderate medium platy structure; friable; gradual and wavy boundary.
B32 7812	47 to 54 inches. Yellowish red (5YR 5/6) silt loam with many (about 40 percent of the surfaces) coarse and distinct yellowish brown (10YR 5/6) and few fine and medium prominent gray (2.5Y 5/1 to N 5/) mottles; very weak medium platy structure that breaks readily to very weak medium blocky structure; gradual and wavy boundary.
C 7813	54 to 60 inches. Yellowish red (5YR 5/6) silty clay loam with many common and distinct yellowish brown (10YR 5/6) and few fine and medium prominent gray (2.5Y 5/2 to N 5/) mottles; massive; very firm.
7814	25 to 40 inches. Tongue material of B2m2 horizon.

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Landisburg silt loam **LOCATION** Loudon County, Tennessee

SOIL NOS. S58Tenn-53-10 **LAB. NOS.** 7868-7874

DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-9	Ap	1.5a	3.8a	7.1a	12.1a	7.5a	55.7	12.3	28.1	39.4	9	sil
9-17	B1	2.7a	4.0a	7.2a	14.0a	6.0a	49.8	16.3	26.8	35.0	5	l
17-26	B21	4.7a	5.9a	10.7a	18.5a	5.7a	37.0	17.5	25.5	24.7	14	l
26-33	B22	7.7a	6.3a	12.8a	22.8a	5.8a	23.4	21.2	22.1	16.2	14	scl
33-41	B22m	4.0a	5.3a	11.4a	19.8a	5.9a	20.1	33.5	20.1	13.6	6	scl
41-47	B3	5.7a	5.8a	9.8a	18.2a	6.5a	25.0	29.0	22.5	16.3	5	scl
47-60	C	3.9a	5.4a	8.3a	14.5a	5.7a	30.8	31.4	21.9	20.7	4	cl

8C1a pH 1:1	pH 1:5	pH 1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3% 6C1a		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
5.2			1.10	0.074	15	0.9						5.7
4.7			0.12	0.015		0.9						6.2
4.8			0.06	0.007		1.0						7.2
5.0			0.10			3.6						8.7
4.8			0.07			5.6						13.6
4.8			0.02			4.2						12.2
4.8			0.03			5.4						13.4

5A1a CATION EXCHANGE CAPACITY NH_4Ac	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat.% on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g			
	EXTRACTABLE CATIONS											
←	milliequivalents per 100g. soil				→							
5.0	0.8	0.2	6.3	<0.1	0.1	22	15	1.1	7.4			
3.1	0.2	<0.1	6.3	<0.1	<0.1	6	3	0.2	6.5			
4.1	0.2	0.3	5.0	<0.1	0.1	15	11	0.6	5.6			
3.1	0.1	0.1	5.4	<0.1	<0.1	6	4	0.2	5.6			
4.9	0.1	0.1	5.9	<0.1	0.1	6	5	0.3	6.2			
5.2	<0.1	<0.1	5.4	<0.1	<0.1	<1	<1	<0.1	5.4			
4.5	<0.1	<0.1	5.9	<0.1	<0.1	<1	<1	<0.1	5.9			

a. Few smooth light to dark brown concr. (Fe-Mn?)

Soil type: Landisburg silt loam
Soil Nos. : S58Tenn-53-10
Location: Loudon County, Tennessee; 1200 feet west of Corinth Church; elevation is about 990 feet. (Field Sheet ANU-IL-94.)
Topography: The sampling site is on an almost perfectly even 4 percent south slope. About 200 feet north of the sampling site the slope steepens to 10 percent; this slope is occupied by the Fullerton soil. About 100 feet south of the sampling site there is a large level depression occupied by the poorly drained Robertsville soil.
Physiography: Colluvial material deposited in a number of successive cycles.
Vegetation: This is an old field which had not been cultivated for a number of years; only weeds growing at the present time.
Sampled by: Joe A. Elder, R. H. Jordan, and Klaus W. Flach, April 11, 1958.
Described by: Klaus W. Flach.

Horizon and Lincoln Lab. Number	
Ap 7868	0 to 9 inches. Dark grayish brown (2.5Y 4/2 to 10YR 4/2) silt loam; weak fine granular structure; loose; abrupt and smooth boundary.
B1 7869	9 to 17 inches. Light olive brown (2.5Y 5/4) to yellowish brown (10YR 5/4) silt loam; weak fine and medium subangular blocky structure; very friable; clear and smooth boundary.
B21 7870	17 to 26 inches. Grayish brown (2.5Y 5/2) to brown (10YR 5/3) clay loam with many fine slightly grayer mottles; weak fine and medium blocky to subangular blocky structure; friable but somewhat brittle; a few fine chert fragments occupy about 5 percent of the soil mass; abrupt and wavy boundary. This horizon extends in tongues which are about 15 inches apart and 2 inches wide down to a depth of 42 inches into the underlying horizons.
B22 7871	26 to 33 inches. Strong brown (7.5YR 5/6) light clay loam with many large and prominent light brownish gray (2.5Y 6/2) mottles; weak medium platy structure that breaks readily into moderate medium angular blocky; many weak clay flow surfaces on the strong brown areas; firm; very brittle; about 25 percent of the soil mass consists of fine chert fragments; clear and smooth boundary.
B22m 7872	33 to 41 inches. Variegated dark red (10R 3/6) and yellowish red (5YR 5/6) clay loam with common medium and distinct light brownish gray (10YR 6/2) mottles; weak medium platy structure, almost massive, with discontinuous but distinct clay flow surfaces; firm; very brittle; contains about 15 percent chert fragments; gradual and smooth boundary.
B3 7873	41 to 47 inches. Variegated dark red (10R 3/6) and yellowish red (5YR 5/6) clay loam with many large distinct mottles of light brownish gray (10YR 6/2); mottles in indefinite streaks; weak fine angular blocky structure with some platiness in lower part; friable; a few thin clay skins; chert fragments fewer and smaller than in B22m horizon; gradual and smooth boundary.
C 7874	47 to 60 inches. Dominantly dark red (2.5YR 3/6) clay loam variegated with yellowish brown (10YR 5/6) and light olive brown (2.5Y 5/6) with common large and prominent light brownish gray (10YR 6/2) mottles; very weak medium blocky structure; friable; the light brownish gray (10YR 6/2) areas occur in prominent large faces which may be the surfaces of large prisms; a few small roots follow these surfaces; less chert than in the overlying horizon.

Remarks: Clay flow surfaces are best expressed in the B22 horizon; they are weaker in the overlying and underlying horizons. Pan development, as indicated by brittleness, starts in the B22 horizon. The upper part of the profile is probably younger colluvial material over the underlying Fullerton-like material, as suggested by the chert fragments. Streaks from the B22 horizon penetrate the entire pan and merge with the gleyed faces of the B3 and C horizons; their color changes from brown in the upper part of the fragipan to gray in the B3 and C horizons.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Lawrence silt loam, level phase SOIL Nos. S55Tenn-16-31 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 56300 - 56307

Depth (in.)	Horizon	1B1b Total Sand (2–0.05)	Total Silt (0.05–0.002)	Total Clay (< 0.002)	Sand Very coarse (2–1)	Sand Coarse (1–0.5)	Sand Medium (0.5–0.25)	Sand Fine (0.25–0.1)	Sand Very fine (0.1–0.05)	Silt 0.05–0.02	Silt Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1 2A2 > 2 Pct.	2 – 19 (Pct. of < 76mm)	19 – 76 (Pct. of < 76mm)
		Pct. of < 2 mm																
0-1	A1		75.5	10.0	0.2	0.7	1.0	6.4	6.2		51.2	34.7				tr.		
1-7	A2		72.9	16.0	0.1	0.3	0.8	4.8	5.1		51.5	29.8				-		
7-15	B1		67.6	22.2	0.2	0.3	0.8	4.1	4.8		49.0	26.2				-		
15-24	B2		71.0	18.6	0.1	0.5	1.0	4.1	4.7		50.9	27.5				1		
24-35	B3m1		70.3	17.9	0.2	0.5	1.2	4.6	5.3		50.6	28.1				tr.		
35-47	B3m2		65.0	25.0	0.1	0.5	0.9	3.8	4.7		46.9	25.2				-		
47-59	Cm1		59.6	27.9	0.5	0.7	1.2	4.7	5.4		42.3	26.0				tr.		
59-71[a]	Cm2		45.7	27.1	2.6	2.8	3.5	10.1	8.2		33.4	26.7				2		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density 4A1a ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content 4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in		pH 8C1c (1:1) KCl	8C1a (1:1) H_2O
0-1	2.08	0.070	30			0.6										4.2
1-7	0.50	0.090	6			0.6										4.4
7-15	0.23	0.044				0.9										4.3
15-24	0.14	0.032				1.3										4.4
24-35	0.10	0.025				1.0										4.5
35-47	0.06	0.021				1.9										4.6
47-59	0.06	0.021				1.4										4.4
59-71[a]	0.02	0.016				0.7										4.4

Depth (in.)	Extractable bases 5B1a 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC 5A3a Sum cations		6G1d Ext. Al		Ratios to clay CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																
0-1	0.2	0.4	tr.	0.2		8.3	9.1									9	
1-7	0.2	0.3	tr.	0.1		7.1	7.7									8	
7-15	tr.	0.2	tr.	0.1		9.1	9.4									3	
15-24	0.2	0.2	tr.	0.1		7.5	8.0									6	
24-35	0.2	0.2	0.1	0.1		7.1	7.7									8	
35-47	tr.	0.4	0.1	0.1		9.3	9.9									6	
47-59	0.1	0.7	tr.	0.1		10.4	11.3									8	
59-71[a]	0.1	0.4	0.1	0.1		8.5	9.2									8	

Depth (in.)	Clay Fraction Analysis 7A1b-d Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
	7A2 X-ray						7A3	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

a Mainly fossiliferous material.

USDA-SCS-HYATTSVILLE, MD. 1966

Soil Type: Lawrence silt loam, level phase.
Soil No.: S55Tenn-16-31
Location: Coffee County, Tennessee. 3.0 miles south of U. S. Highway 41 at the Fifth Wheel Restaurant on Hill's Chapel Road. 320 feet south of abandoned field and 60 feet west of road. Aerial photo 5G-182.
Vegetation and land use: Forest consisting chiefly of white, willow, post, and red oaks.
Slope and land form: One percent.
Sampled by and date: T. R. Love and W. H. Proffitt, November 21 and 22, 1955.

Horizon and Beltsville Lab. No.	
A1 56300	0 to 1 inch. Grayish brown (2.5Y 5/2) with many dark gray (10YR 4/1) stains; very friable silt loam; weak fine granular structure; contains many small roots of which an estimated 10 percent of the total volume were discarded from sample.
A2 56301	1 to 7 inches. Light yellowish brown (2.5Y 6/4) to pale brown (10YR 6/3) with common fine faint yellowish brown (10YR 5/6) mottles; very friable silt loam; weak fine granular and subangular blocky structure; contains many fine roots.
B1 56302	7 to 15 inches. Pale brown (10YR 6/3) to light yellowish brown (2.5Y 6/4) with common fine faint yellowish brown and light brownish gray (10YR 6/2 mottles; friable silt loam; weak fine subangular blocky structure; common small roots present.
B2 56303	15 to 24 inches. Many fine faint mottles of light yellowish brown (2.5Y 6/4 - 10YR 6/4) light brownish gray (2.5Y 6/2) and yellowish brown (10YR 5/6); friable silt loam; weak to moderate fine angular blocky structure; a few clay skins on peds; contains a few small roots.
B3m1 56304	24 to 35 inches. Many fine distinct mottles of light brownish gray, light yellowish brown (2.5Y 6/2 - 6/4), and yellowish brown (10YR 5/6) moderately compact in place, but crushes to a friable light silty clay loam or heavy silt loam; contains an occasional fine prominent red (2.5YR 4/6) mottle in lower part; weak to moderate fine angular blocky structure; contains a few clay skins and silt coatings; common pinholes and a few fine roots present.
B3m2 56305	35 to 47 inches. Many medium prominent mottles of gray yellowish brown (10YR 6/1 - 5/6), light brownish gray (2.5Y 6/2), and strong brown (7.5YR 5/6) compact firm silty clay loam which breaks to weak or moderate fine and medium angular blocky structure; contains a few distinct discontinuous clay skins; occasional fine roots and pinholes present.
Cm1 56306	47 to 59 inches. Many coarse prominent mottles of gray, yellowish brown (10YR 6/1 - 5/6), light brownish gray (2.5Y 6/2) and red (2.5YR 4/6) firm silty clay loam; weak medium angular to massive structure; contains a very few discontinuous clay skins; occasional fine root and pinholes present.
Cm2 56307	59 to 71 inches. Many coarse prominent mottles of gray, light yellowish brown, yellowish brown, (10YR 6/1 - 6/4 - 5/6) and red (2.5YR 4/6) firm silty clay loam; without well defined structure; common angular chert fragments 1/4 to 3 inches in diameter and a few pinholes present. Larger chert fragments comprising 2 percent of the total volume discarded from sample.

Notes: Color of soil moist unless otherwise stated.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Lawrence silt loam, level phase SOIL Nos. S55Tenn-16-32 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 56308 - 56315

Depth (in.)	Horizon	1B1b Total Sand (2–0.05)	Total Silt (0.05–0.002)	Total Clay (< 0.002)	Sand: Very coarse (2–1)	Sand: Coarse (1–0.5)	Sand: Medium (0.5–0.25)	Sand: Fine (0.25–0.1)	Sand: Very fine (0.1–0.05)	Silt: 0.05–0.02	Silt: Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2 – 19 (Pct. of < 76mm)	19 – 76 (Pct. of < 76mm)
		Pct. of < 2 mm																
0-2	A1		69.1	9.8	0.2	0.5	0.7	8.2	11.5		43.7	43.2				-		
2-10	A2		67.9	14.5	0.2	0.3	0.5	6.6	10.0		43.7	39.3				tr.		
10-15	B1		67.1	15.9	0.1	0.3	0.5	6.2	9.9		44.6	37.3				-		
15-23	B2		62.8	23.0	0.1	0.2	0.4	5.2	8.3		41.0	34.3				-		
23-37	B3m1		66.5	17.9	0.1	0.2	0.4	5.4	9.5		45.1	35.2				-		
37-51	B3m2		63.9	23.6	-	0.2	0.4	4.2	7.7		43.9	31.1				-		
51-69	B2b		45.8	35.4	0.1	0.5	0.9	6.3	11.0		28.5	33.1				tr.		
69-81	B3b		43.1	37.3	1.6	1.5	0.9	5.8	9.8		27.1	30.2				1		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron 6.8 Fe_2O_3 Pct.	Bulk density: 4A1e ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: 4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in		pH: 8C1c (1:1) KCl	8C1a (1:1) H_2O
0-2	2.18	0.095	23			0.7										4.2
2-10	0.42	0.034	12			0.9										4.3
10-15	0.20	0.027				1.0										4.4
15-23	0.09	0.019				1.0										4.6
23-37	0.09	0.016				2.1										4.4
37-51	0.12	0.020				2.7										4.4
51-69	0.06	0.022				7.5										4.5
69-81[a]	0.06	0.026				4.7										4.6

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A2a Sum cations		6G1d Ext. Al		Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																
0-2	tr.	0.1	0.1	0.1		10.3	10.6									3	
2-10	0.1	0.2	tr.	tr.		6.8	7.1									4	
10-15	0.1	0.2	0.1	tr.		6.9	7.3									5	
15-23	0.2	0.2	0.1	0.1		7.9	8.4									6	
23-37	0.1	0.2	0.1	tr.		7.3	7.7									5	
37-51	0.2	0.2	0.1	tr.		9.1	9.6									5	
51-69	0.1	0.1	0.1	tr.		11.1	11.4									3	
69-81[a]	0.1	0.1	0.2	tr.		11.5	11.9									3	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite	
	7A2 X-ray						7A3		

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, Mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

a Mainly fossiliferous material.

USDA-SCS-BELTSVILLE, MD. 1966

Soil Type: Lawrence silt loam, level phase.
Soil No.: 855Tenn-16-32
Location: Coffee County, Tennessee. 9.5 miles north of Manchester on Highway 53 to an old logging road in woods on west side of highway. Logging road is exactly 1.25 miles south of David Grocery. 140 feet west of highway at old logging road and 250 feet north of abandon field. Aerial photo 6G-39.
Vegetation and land use: Hardwood forest consisting of white, red, and post oaks, with black gum, maple, sweet gum and sourwood undergrowth.
Slope and land form: One percent.

Horizon and Beltsville Lab. No.	
O1, O2 Not Sampled	1 to 0 inches. Forest litter and leaf mold.
A1 56308	0 to 2 inches. Grayish brown to dark grayish brown (2.5Y 5/2 - 4/2) very friable silt loam; weak fine granular structure; contains a few gray and pale brown (10YR 5/1 and 6/3) stains; many fine roots of which an estimated 10 percent of the total volume was discarded from sample.
A2 56309	2 to 10 inches. Light yellowish brown (2.5Y 6/4) to pale brown (10YR 6/3) very friable silt loam; weak fine subangular blocky and granular structure; contains a few fine faint yellowish brown (10YR 5/6) and light brownish gray (2.5Y 6/2) mottles; many small roots present.
B1 56310	10 to 15 inches. Light olive brown to light yellowish brown (2.5Y 5/4 - 6/4) with common fine faint light brownish gray (2.5Y 6/2) and yellowish brown (10YR 5/6) mottles; friable silt loam; weak fine angular blocky structure; contains common pinholes, wormholes, and small roots.
B2 56311	15 to 23 inches. Many fine faint to distinct mottles of light olive brown (2.5Y 5/4), gray, and yellowish brown (10YR 6/1 - 5/6) friable heavy silt loam to light silty clay loam; weak to moderate fine angular blocky structure; contains few to common pinholes and a few small roots; abrupt irregular lower boundary with a few pockets or tongues extending to depths of 36 to 46 inches.
B3m1 56312	23 to 27 inches. Many fine distinct mottles of light yellowish brown, gray, and yellowish brown (10YR 6/4 - 5/1 - 6/1 - 5/6); compact in place but breaks or crushes to a brittle friable silt loam; weak to moderate fine and medium platy structure with reddish brown to yellowish red (5YR 4/4 - 4/6) and light olive brown (2.5Y 5/4) coatings; contains many pinholes and an occasional wormholes; discontinuous upper and lower boundaries.
B3m2 56313	37 to 51 inches. Many medium prominent mottles of gray, yellowish brown (10YR 5/1 - 6/1 - 5/6) light yellowish brown (2.5Y 6/4) and reddish brown to yellowish red (5YR 4/4 - 4/6) firm silty clay loam; moderate medium to coarse platy structure; common distinct clay skins on horizontal faces; few to common pinholes; discontinuous upper boundary broken with occasional tongues from horizons above.
B2b 56314	51 to 69 inches. Many medium prominent mottles of red (2.5YR 4/8) yellowish brown, gray (10YR 5/6 - 5/1 - 6/1), and strong brown (7.5YR 5/6); firm to very firm silty clay; moderate to strong medium angular blocky structure; common distinct clay skins on peds.
B3b 56315	69 to 81 inches. Red (2.5YR 4/8) with many medium and fine prominent gray, yellowish brown (10YR 6/1 - 5/6), reddish yellow, strong brown (7.5YR 6/8 - 5/6), and yellowish red (5YR 4/6) mottles; very firm silty clay or clay; moderate to strong medium angular blocky structure; common distinct clay skins on peds; contains a few angular chert fragments 1/4 to 2 inches in diameter.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Leadvale silt loam SOIL Nos. ~~853Tenn-5-11~~ LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53735-53738

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand (Size class and particle diameter (mm) 3A1): Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)			Coarse fragments 2A2: > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct. of < 76mm	
0-6	Ap	44.3	38.7	17.0	0.7	1.6	3.2	18.4	20.4	18.2	20.5	52.2	23.9			tr.		
6-16	B1	47.8	24.7	27.5	3.9	5.0	4.3	20.2	14.4	9.7	15.0	37.9	33.4			tr.		
16-32	B2	35.6	35.7	28.7	0.4	1.2	2.0	16.1	15.9	13.4	22.3	41.5	19.7			tr.		
32-50	C	24.0	51.0	25.0	1.5	1.9	1.7	5.6	13.3	17.8	33.2	35.2	10.7			tr.		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-6	0.51																	5.0
6-16	0.13																	4.9
16-32	0.22																	4.8
32-50	0.13																	5.3

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-6	0.9	0.2	tr.	tr.	1.1	5.5	6.6									17	
6-16	0.4	0.1	tr.	tr.	0.5	10.6	11.1									4	
16-32	0.5	-	tr.	tr.	0.5	10.6	11.1									4	
32-50	1.8	0.1	tr.	tr.	1.9	5.5	7.4									26	

Depth (in.)

USDA SCS HYATTSVILLE MD. 1964

Soil Type: Leadvale silt loam
Soil No.: 853Tenn-5-11
Location: Blount County, Tennessee. 1/2 mile east of Rocky Branch School.
Vegetation and land use: Idle - may be moved for hay. Lespedeza and weeds.

Horizon and Beltsville Lab. No.	
Ap 53735	0 to 6 inches. Brownish yellow (10YR 6/6) friable silt loam to loam.
B1 53736	6 to 16 inches. Brownish yellow (10YR 6/8), and a few faint pale yellow and strong brown mottles, moderately friable clay loam or silty clay loam. Moderate medium blocky structure.
B2 53737	16 to 32 inches. Brownish yellow (10YR 6/8) firm silty clay loam. Some distinct strong brown (7.5YR 5/8) mottles. Moderate medium blocky structure.
C 53738	32 to 50 inches. Mottled pale yellow and very pale brown firm silty clay loam. Moderate medium blocky structure.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Leadvale silt loam SOIL No. 853Tenn-5-24 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53781-53783

Depth (in.)	Horizon	1B1b Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (< 0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)	(2-0.1)			Coarse fragments: 2A2 > 2 Pct.	2-19	19-76
		Pct. of < 2 mm															Pct. of < 76mm	
0-5	Ap	9.3	76.8	13.9	2.2	3.2	1.4	1.5	1.0	13.4	63.4	15.1	8.3			tr.		
5-16	B2	5.7	72.2	22.1	1.0	2.2	1.0	0.9	0.6	10.2	62.0	11.3	5.1			tr.		
16-48	C	3.9	53.0	43.1	0.8	1.0	0.6	0.8	0.7	6.4	46.6	7.6	3.2			tr.		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-5	3.48																	5.5
5-16	0.73																	4.6
16-48	0.38																	4.6

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC: 5A3a Sum Cations									Base saturation: 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-5	2.8	0.6	tr.	tr.	3.4	7.8	11.2									30	
5-16	1.0	0.1	tr.	tr.	0.7	8.5	9.2									11	
16-48	1.2	0.9	tr.	tr.	2.1	15.6	17.7									12	

Depth (in.)					

Soil Type: Leadvale silt loam
Soil No.: S53Tenn-5-24
Location: Blount County, Tennessee. 2 miles southeast of Prospect.
Vegetation and land use: Hay or pasture. Lespedeza and weeds.

Horizon and Beltsville Lab. No.	
Ap 53781	0 to 5 inches. Pale brown (10YR 6/3) friable silt loam.
B2 53782	5 to 16 inches. Brownish yellow (10YR 6/6) moderately friable to firm silty clay loam.
C(pan) 53783	16 to 48 inches. Brownish yellow (10YR 6/6) firm silty clay loam; numerous distinct grayish brown and pale yellow mottles.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Lexington silt loam **LOCATION** Henderson County, Tennessee

SOIL NOS. S55Tenn-39-3 **LAB. NOS.** 7725-7731

DEPTH INCHES	HORIZON	1B1a PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent) 3A1 VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002	2A2 > 2	TEXTURAL CLASS
0-5	Ap	0.2a	2.2a	3.7a	3.7a	0.6a	71.0	18.6	38.0	34.7	-	sil
5-9	B21	<0.1	0.9a	1.5a	1.6a	0.3a	67.0	28.7	29.4	38.4	-	sicl
9-13	B22	<0.1	1.3a	1.9a	2.1a	0.3a	66.0	28.4	28.9	38.0	-	sicl
13-20	B23	0.1a	1.9a	3.4a	3.2a	0.4a	64.2	26.8	29.0	36.6	-	sil
20-30	C1	0.1a	3.6a	5.9a	6.0a	0.7a	60.1	23.6	29.3	33.2	-	sil
30-42	C2	0.2a	5.0a	8.3a	7.9a	0.8a	57.9	19.9	28.5	32.5	-	sil
42+	D1	0.2a	10.2a	16.7a	15.2a	1.1a	34.2	22.4	18.2	21.3	-	l

pH 8C1a 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron Fe_2O_3%		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
6.5			0.64	0.075	8	1.6						
5.8			0.25	0.053		2.5						
5.0			0.20	0.045		2.5						
4.9			0.16	0.042		2.4						
5.0			0.09	0.033		2.1						
5.4			0.09			1.9						
6.0			0.09			1.8						

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg		
←	milliequivalents per 100g. soil				→			← me/100g →				
8.6	5.7	1.5	2.8	<0.1	0.3	87	73	7.5	10.3	3.8		
11.4	6.4	2.6	4.1	0.1	0.3	82	70	9.4	13.5	2.5		
11.3	4.6	3.1	7.4	0.1	0.3	72	52	8.1	15.5	1.5		
10.7	3.8	2.8	6.6	0.2	0.4	67	52	7.2	13.8	1.4		
8.8	3.2	2.2	7.8	0.1	0.3	66	43	5.8	13.6	1.4		
8.2	3.1	2.1	4.9	0.1	0.3	68	53	5.6	10.5	1.5		
7.2	2.7	3.0	3.2	0.2	0.3	86	66	6.2	9.4	0.9		

a. Few smooth and irregular light brown to black coner. (Fe-Mn?)

Soil type: Lexington silt loam Described by E. C. Sease and Robbie Flowers
Soil Nos.: S55Tenn-39-3
Date: April 5, 1955
Area: Henderson County, Tennessee
Location: About 4 miles east of Lexington, Tennessee, (see Photo No. 2F-10) on Dr. John Douglass farm. 200 yards east of Timberlake station, about 300 feet south of farmhouse in pasture.
Present land use: Fescue and ladino pasture.
Sampling party: E. C. Sease and Robbie Flowers.

Lincoln Lab. No.	Horizon	Depth	
7725	A_p	0-5 inches	Dark brown (10YR 4/3) very friable silt loam; weak fine crumb structure; abrupt boundary.
7726	B_{21}	5-9 inches	Reddish brown (5YR 4/3) with shades on ped faces of reddish brown (5YR 4/4); friable heavy silt loam; moderat medium subangular blocky structure; some dark brown organic stain on structure faces; gradual boundary.
7727	B_{22}	9-13 inches	Reddish brown (5YR 4/4) to dark brown (7.5YR 4/4) friable heavy silt loam; moderate medium subangular blocky structure which breaks to fine crumb structure under pressure; dark brown stain on structure faces; gradual boundary.
7728	B_{23}	13-20 inches	Reddish brown (5YR 4/4) to dark brown (7.5YR 4/4) friable silt loam; weak medium subangular blocky structure; dark brown stains on surface faces; gradual boundary.
7729	C_1	20-30 inches	Reddish brown (5YR 4/4) friable silt loam with a little grit or sand; massive, breaks under pressure to medium subangular blocks; dark brown stain on some of the ped surfaces; gradual boundary.
7730	C_2	30-42 inches	Dark reddish brown (5YR 3/4) very friable silt loam with streaks of pale brown (10YR 6/3) sandy material; massive; medium dark brown stains on some ped faces; gradual boundary.
7731	D_1	42 plus inches	Dark red (2.5YR 3/6) with streaks of pinkish gray (7.5YR 6/2); friable sandy clay loam; massive.
			Note: More friable and sandy at 60 inches and below.

Remarks: Colors given are for moist soil unless otherwise stated. This is the eroded gently sloping phase of Lexington.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Lexington silt loam **LOCATION** Henderson County, Tennessee

SOIL NOS. S55Tenn-39-4 **LAB. NOS.** 7732-7739

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	3A1 0.02-0.002	2A2 > 2	TEXTURAL CLASS
0-6	Ap	0.1	3.9	6.4	7.5	1.2	68.4	12.5	38.7	33.7	-	sil
6-10	B21	<0.1	1.6	2.8	3.6	0.6	63.9	27.5	27.1	38.8	-	sicl
10-15	B22	<0.1	1.8a	3.5a	4.7a	0.7a	58.4	30.9	26.3	34.6	-	sicl
15-22	B23	0.1	3.0a	5.3a	7.3a	1.0a	55.1	28.2	26.6	32.3	-	sicl
22-34	C1	<0.1	4.6a	8.5a	11.3a	1.6a	51.3	22.7	28.0	29.2	-	sil
34-46	D1	0.1	7.8a	14.2a	18.4a	2.5a	40.4	16.6	28.2	21.6	-	l
46-52	D2	0.2	11.4a	19.6a	23.3a	2.8a	29.2	13.5	24.2	16.1	-	sl
52+	D3	0.5	16.6a	24.4a	27.7a	2.8a	18.2	9.8	20.1	10.5	-	sl

8C1a pH 1:1	1:5	1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron Fe_2O_3%		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
5.2			0.76	0.072	10	1.1						
5.3			0.52	0.061	8	2.2						
5.2			0.33	0.050	7	2.6						
5.0			0.23	0.041		2.5						
5.1			0.16	0.032		2.0						
5.2			0.07			1.5						
5.2			0.03			1.2						
5.2			0.05			0.9						

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH.	5C3 Base Sat. % on sum Cations	5B1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg
←	milliequivalents per 100g. soil				→	5C1		< me/100g →		
5.6	1.7	0.5	5.3	<0.1	0.4	46	33	2.6	7.9	
10.8	4.6	3.0	5.3	<0.1	0.4	74	60	8.0	13.3	1.5
12.6	4.9	4.4	5.4	<0.1	0.4	77	64	9.7	15.1	1.1
11.6	3.8	4.6	9.4	<0.1	0.4	76	48	8.8	18.2	0.8
9.4	2.4	4.2	5.7	<0.1	0.4	74	55	7.0	12.7	0.6
6.6	1.1	2.8	3.7	<0.1	0.3	64	53	4.2	7.9	0.4
5.5	0.8	2.3	3.2	0.1	0.2	62	52	3.4	6.6	
4.0	0.6	1.6	2.8	<0.1	0.2	60	46	2.4	5.2	

a. Few smooth light brown concr. (Fe-Mn?)

Soil type: Lexington silt loam Described by E. C. Sease and Robbie Flowers
Soil Nos.: S55Tenn-39-4
Date: April 6, 1955
Area: Henderson County, Tennessee
Location: On gravel road running south from the Lexington-Natchez Trace Road at Duncan Roberts farm; 300 yards from intersection of the two roads and 25 feet east of the gravel road (see Photo No. 2F-50).
Present land use: Cultivated crop (cowpeas) in 1954, idle in 1955.
Sampling party: E. C. Sease and Robbie Flowers.

Lincoln Lab. No.	Horizon	Depth	
7732	A_p	0-6 inches	Dark brown (10YR 4/3) very friable silt loam; weak fine crumb structure; abrupt boundary.
7733	B_{21}	6-10 inches	Dark brown (7.5YR 4/4) stained with dark brown (10YR 4/3) organic matter on some ped faces; friable silt loam; moderate medium subangular blocky structure; gradual boundary.
7734	B_{22}	10-15 inches	Reddish brown (5YR 4/4) to yellowish red (5YR 4/6) friable silt loam; moderate medium subangular blocky structure; gradual boundary.
7735	B_{23}	15-22 inches	Reddish brown (5YR 4/4) friable silt loam; weak medium subangular blocky structure; gradual boundary.
7736	C_1	22-34 inches	Dark brown (7.5YR 4/4) and dark yellowish brown (10YR 4/4) very friable silt loam with some sand; very weak medium subangular blocky structure; gradual boundary.
7737	D_1	34-46 inches	Dark yellowish brown (10YR 4/4) with streaks of light yellowish brown (10YR 6/4); very friable sandy clay loam; massive; some dark brown stains; gradual boundary.
7738	D_2	46-52 inches	Reddish brown (5YR 4/4) with streaks of light brown (7.5YR 6/4) compact sandy loam; massive in place but breaks to single grain under pressure; gradual boundary.
7739	D_3	52 plus inches	Yellowish red (5YR 4/8) very friable sandy loam; massive in place but breaks to single grain under pressure.
			Note: Grades to yellowish red (5YR 4/8) loose sand at 72 inches.

Remarks: Colors given are for moist soil unless otherwise stated. This is the eroded gently sloping phase of Lexington.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Putnam County, Tennessee SOIL TYPE Linker loam

LAB NOS. 12559 - 12564 SOIL NOS. S59Tenn-71-24

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12559	0-5	A2	1.6	8.3	13.6	18.9	3.8	30.5	23.3	20.1	21.3	4	l
12560	5-10	B1	1.4	8.4	12.7	16.7	3.1	25.8	31.9	16.5	18.6	3	cl
12561	10-15	B21	1.9	8.5	11.3	14.0	2.5	25.0	36.8	13.9	18.7	2	cl
12562	15-20	B22	1.7	9.2	12.0	14.8	2.6	22.9	36.8	14.6	16.3	Tr.	cl
12563	20-34	B23	2.4	11.2	14.2	18.8	3.0	16.4	34.0	13.9	12.0	5	scl
12564	34-48	B3	4.4	13.6	17.1	26.8	3.8	9.7	24.6	16.4	6.3	14	scl

LABORATORY NUMBER	pH 8C1a H_2O 1:1		6C1a Free Iron as Fe_2O_3 %	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	WATER CONTENT 4B1b 1/3-Bar %	4B2 15-Bar %
12559	4.6		2.0	1.76	0.075	24	20.9	1.41a	18.5	1.44a	1.48a	16.1	8.7
12560	4.7		2.9	0.85	0.060	14	20.4	1.42	18.6	1.44	1.51	17.2	11.9
12561	4.8		3.5	0.53	0.049	11	26.0	1.33	22.2	1.34	1.39		13.1
12562	4.9		3.5	0.40	0.040	10	22.8	1.50	20.2	1.53	1.58	19.8	13.4
12563	5.1		3.6	0.14	0.027		19.6	1.60			1.66	15.7	11.6
12564	5.1		2.6	0.09			18.0	1.66	17.2	1.68	1.70	11.1	8.8

LABORATORY NUMBER	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat. % on Sum Cations	5C1 Base Sat. % NH_4OAc	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g		
		milliequivalents per 100g soil										
12559	7.9	0.2	0.3	0.1	0.2	12.1	6	10	0.8	12.9		
12560	9.2	0.1	0.6	0.1	0.2	13.6	7	11	1.0	14.6		
12561	9.5	0.1	0.8	<0.1	0.2	13.9	7	12	1.1	15.0		
12562	9.2	<0.1	0.5	<0.1	0.2	13.4	5	8	0.7	14.1		
12563	7.5	<0.1	0.4	<0.1	0.1	10.7	4	7	0.5	11.2		
12564	5.1	<0.1	0.3	<0.1	0.1	9.0	4	8	0.4	9.4		

a. Range is 0.12 to 0.16 g/cc.

Soil type: Linker loam

Soil Nos.: S59Tenn-71-24

Location: Putnam County, Tennessee, TN-SCD-6: Sand Springs, 200 yards southeast of Highway 70N; 250 feet southwest of private road; Selby farm. Photo AEW-2N-9.

Vegetation and Use: Mainly white oak and chestnut oak forest. Good trees. Virgin site, although slightly eroded. Smilax and Vaccinium understory.

Slope and Land Form: Five percent slopes; narrow upland ridge top.

Drainage and Permeability: Well drained; surface runoff moderate; internal drainage moderate to moderately rapid. Moderate permeability.

Parent Material: Acid sandstone of Cumberland Plateau.

Samples Collected by: Edwood Pederson, G. T. Jackson, J. A. Elder, M. E. Springer, J. Fleming, D. K. Springer, T. J. Longwell, S. R. Bacon, B. C. Cox, December 2, 1959.

Profile Described by: G. T. Jackson, December 2, 1959.

Horizon and Lincoln Lab.No.	Depth	
Aoo Not sampled	1½ to ½ inch	Loose, undecomposed broadleaf litter, principally oak.
Ao Not sampled	½ to 0 inch	Partly decomposed broadleaf litter and twigs.
A1 Not sampled		Not measurable.
A2 12559	0 to 5 inches	Dark yellowish brown (10YR4/4) loam with weak fine granular structure; very friable; clear wavy boundary.
B1 12560	5 to 10 inches	Strong brown (7.5YR5/6) to brown (7.5YR4/4) clay loam with weak fine subangular blocky structure; friable; clear wavy boundary.
B21 12561	10 to 15 inches	Yellowish red (5YR4/6) clay loam with weak fine subangular blocky structure; friable; clear wavy boundary.
B22 12562	15 to 20 inches	Red (2.5YR4/6) clay loam with streaks and pockets of dark brown (7.5YR4/4); weak medium subangular blocky structure; friable; gradual wavy boundary.
B23 12563	20 to 34 inches	Red (2.5YR4/6) clay loam with weak medium angular blocky structure; patchy discontinuous clay films; friable; gradual wavy boundary.
B3 12564	34 to 48 inches	Red (2.5YR4/6) sandy clay loam; massive; friable, firm in place; few rounded white pebbles; gradual, wavy boundary.
D4(?) Not sampled	48 to 58 inches plus	Red (2.5YR5/8) pebbly sandy loam with few dark red (2.5YR3/6) streaks; firm in place but friable.

Remarks: Colors and consistency are for moist soil. Understory vegetation of Smilax and Vaccinium may indicate a low base status.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Putnam County, Tennessee SOIL TYPE Linker loam

LAB NOS. 12565 - 12572 SOIL NOS. S59Tenn-71-25

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12565	2-0	A0											
12566	0-5	A2	1.0	5.7	13.4	20.3	4.2	30.9	24.5	19.7	22.3	Tr.	l
12567	5-10	B1	0.8	6.0	13.1	18.1	3.6	28.3	30.1	17.5	20.4	Tr.	cl
12568	10-15	B21	1.4	6.7	12.8	17.0	3.2	25.5	33.4	15.8	18.4	Tr.	cl
12569	15-25	B22	0.6	6.1	13.0	18.8	3.3	19.4	38.8	15.5	13.2	Tr.	cl
12570	25-43	B23	1.6	9.0	17.6	24.2	3.2	14.5	29.9	14.6	10.5	Tr.	scl
12571	43-58	B31	2.6	11.4	22.3	30.0	3.5	11.0	19.2	15.3	8.0	Tr.	fsl/sl
12572	58-69	B32	3.2	14.6	22.4	26.1	3.3	7.4	23.0	13.8	5.4	8	scl

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12565	3.8												
12566	4.6			1.15	0.059	20	2.3	21.6	1.45	17.1	1.48	1.53	9.9
12567	4.8			0.79	0.057	14	2.8	22.2	1.42	19.4	1.45	1.51	11.8
12568	4.9			0.60	0.039	15	3.3	25.7	1.37	22.0	1.40	1.45	13.0
12569	4.9			0.40	0.031	13	3.8	25.9	1.40	21.9	1.43	1.46	14.3
12570	5.0			0.09			3.3	19.0	1.65	18.1	1.67	1.68	11.7
12571	4.8			0.07			2.3	17.5	1.67	15.6	1.70	1.71	8.2
12572	5.0			0.06			2.5						8.7

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat. % on Sum Cations	5C1 Base Sat. % NH_4OAc	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g
		milliequivalents per 100g soil								
12565						90.0				
12566	8.6	0.2	0.2	<0.1	0.1	12.6	4	6	0.5	13.1
12567	9.0	0.1	0.5	<0.1	0.2	12.4	6	9	0.8	13.2
12568	9.6	0.2	0.7	0.1	0.2	14.3	8	12	1.2	15.5
12569	9.6	0.1	0.7	0.1	0.2	13.5	8	11	1.1	14.6
12570	6.7	0.1	0.2	<0.1	0.1	10.0	4	6	0.4	10.4
12571	4.5	0.1	0.1	0.1	0.1	6.8	6	9	0.4	7.2
12572	4.2	<0.1	0.1	<0.1	0.1	6.8	3	5	0.2	7.0

Soil type: Linker loam

Soil No. : 859Tenn-71-25

Location: Putnam County, Tennessee, TN-SCD-6. Two miles west of intersection of U. S. Highway 70N and State Highway 84; 200 feet north of 70N and 100 feet west of abandoned house. Hargrove property. Photo AEW-2N-69.

Vegetation and Use: White oak, Chestnut oak and Scarlet oak forest.

Slope and Land Form: Four percent slope; narrow upland ridge top.

Drainage and Permeability: Well drained, surface runoff moderate; internal drainage moderate to moderately rapid; moderate permeability.

Parent Material: Acid sandstone of Cumberland Plateau.

Samples Collected by: Edwood Pederson, O. T. Jackson, J. Fleming, December 2, 1959.

Profile Described by: O. T. Jackson, December 2, 1959.

Horizon and Lincoln Lab. No.	Depth	
Aoo Not sampled	2½ to 2 inches	Loose undecomposed leaf litter, principally oak.
Ao 12565	2 to 0 inch	Partly decomposed leaf litter and twigs. Weakly laminated; no evidence of fire; sampled for pH.
A1 Not sampled		Not measurable. Varies from none to minor fractions of an inch.
A2 12566	0 to 5 inches	Dark brown (10YR4/3) loam with streaks of yellowish brown (10YR5/4); weak fine granular structure; very friable; clear wavy boundary.
B1 12567	5 to 10 inches	Yellowish red (5YR4/6) loam with common medium faint variegations of red (2.5YR4/6); weak fine subangular blocky structure; very friable; porous; clear wavy boundary.
B21 12568	10 to 15 inches	Yellowish red (5YR4/6) clay loam with common medium faint variegations of red (2.5YR4/6); weak fine subangular blocky structure; very friable; porous; gradual smooth boundary.
B22 12569	15 to 25 inches	Red (2.5YR4/8) clay loam with moderate medium subangular blocky structure; thin patchy clay films; friable; gradual smooth boundary.
B23 12570	25 to 43 inches	Red (2.5YR4/8) sandy clay loam; massive; firm; diffuse wavy boundary.
B31 12571	43 to 58 inches	Red (2.5YR4/6) sandy loam with a massive structure; friable to firm; diffuse wavy boundary.
B32 12572	58 to 69 inches	Red (2.5YR4/6) sandy loam; massive; friable to firm; few pebbles.
Dr (Not sampled)	69 inches plus	Sandstone bedrock.

Remarks: Colors and consistency are for moist soil.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Putnam County, Tennessee SOIL TYPE Mimosa silt loam

LAB NOS. 13542 - 13546 SOIL NOS. S60-Tenn-71-34

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1R1a PARTICLE SIZE DISTRIBUTION (In mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2 <19mm	TEXTURAL CLASS
13542	0-9	Ap	3.4a	2.6a	1.2a	1.4	2.3	61.6	27.5	22.9	41.6	9	sicl/sil
13543	9-18	B21	1.5	1.2a	0.5a	0.8b	1.0b	34.2	60.8	10.2	25.4	Tr.	c
13544	18-24	B22	0.8	0.8a	0.5a	1.0b	1.1b	34.4	61.4	10.6	25.4	Tr.	c
13545	24-27	B3	0.6	1.2a	0.8b	1.7b	1.7b	35.7	58.3	9.2	29.1	Tr.	c
13546	27-41	C	1.0a	1.1b	0.5b	0.9b	1.2b	36.1	59.2	9.3	28.5	Tr.	c

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6R1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
13542	5.6			1.39	0.146	10	3.8	22.7	1.47	26.8	1.43	1.54	12.4
13543	5.5			0.33	0.075	4	6.1	30.6	1.40	30.6	1.40	1.73	23.2
13544	5.1			0.22	0.066		6.1	29.6	1.44	30.3	1.42	1.75	24.2
13545	5.5			0.20			5.6	27.8	1.46c	28.0	1.46	1.79	23.0
13546	6.9			0.17			5.3	26.3	1.52	26.9	1.50	1.86	21.8

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5R1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat.% in Sum Cations	5C1 Base Sat.% NH_4OAc	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g	8D3 Ca/Mg	
		milliequivalents per 100g soil										
13542	14.0	10.6	0.8	<0.1	0.2	8.7	57	83	11.6	20.3		
13543	24.2	19.3	1.0	0.1	0.2	11.9	63	85	20.6	32.5	19.3	
13544	27.2	21.0	1.4	0.1	0.2	14.8	60	83	22.7	37.5	15.0	
13545	28.7	24.5	1.4	0.1	0.2	11.2	70	91	26.2	37.4	17.5	
13546	29.3	31.2	1.3	0.1	0.2	4.6	88	112	32.8	37.4	24.0	

a. Few Fe-Mn? concr., and ferruginous sandstone fragments.
b. Common Fe-Mn? concr., and ferruginous sandstone fragments.
c. Range is 0.12 to 0.16 g/cc.

Soil type:	Mimosa silt loam
Soil No. :	360Tenn-71-34
Location:	Putnam County, Tennessee, TN-SCD-6; 1.1 miles southwest of Gentry off U. S. Highway 70N. Photo AEW-5N-26.
Vegetation and Use:	Previously in pasture, now in corn.
Slope and Land Form:	Eroded 12 percent slope; upland.
Drainage and Permeability:	Well drained; surface runoff rapid; permeability slow to very slow.
Parent Material:	Phosphatic limestone.
Samples Collected by:	George T. Jackson, S. R. Bacon, B. C. Cox.
Profile Described by:	George T. Jackson

Horizon and Lincoln Lab. No.	Depth	
Ap 13542	0 to 9 inches	Brown (10YR4/3) silt loam with weak medium and fine granular structure; friable; few stems of undecomposed plant residue; few chert fragments; medium acid; clear smooth boundary.
B21 13543	9 to 18 inches	Variegated yellowish brown (10YR5/6) and (10YR5/8) silty clay loam; variegations are common and medium; moderate medium angular and subangular blocky structure; common clay films; firm; thin channels of the A_p extend into this horizon; very strongly acid; gradual wavy boundary.
B22 13544	18 to 24 inches	Yellowish brown (10YR5/8) clay with common medium distinct variegations of strong brown (7.5YR5/6) and pale brown (10YR6/3); moderate medium and fine angular blocky structure; thick continuous clay films; firm; very strongly acid; gradual wavy boundary.
B3 13545	24 to 27 inches	Variegated strong brown (7.5YR5/8) and pale brown (10YR6/3) clay; structure is massive in place breaking into strong medium angular blocky; very firm; few fine black concretions; very strongly acid; gradual wavy boundary.
C 13546	27 to 41 inches	Variegated strong brown (7.5YR5/8); yellowish brown (10YR5/6) and light brownish gray (2.5Y6/2) clay; variegations are many, medium, distinct; structure is massive in place breaking to strong fine and medium angular blocky; few thin clay films; very firm; common fine black concretions; very strongly acid.
Dr	41 inches plus	Limestone bedrock.

Remarks: Color and consistency are for moist soil.
Each horizon contains a few fine angular chert fragments.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Putnam County, Tennessee SOIL TYPE Mimosa silt loam

LAB NOS. 13547 - 13551 SOIL NOS. S60-Tenn-71-35

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1 COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
13547	0-7	Ap	5.8a	3.1a	1.3a	1.7	2.5	61.2	24.4	22.1	42.4	12	sil
13548	7-15	B21	0.4b	0.5b	0.4b	1.0b	2.2b	37.1	58.4	12.3	27.6	Tr.	c
13549	15-24	B22	0.4b	0.8b	0.6b	1.4b	2.4b	36.2	58.2	13.1	26.2	Tr.	c
13550	24-28	B3	1.4a	1.5a	0.8a	1.4	2.2	39.5	53.2	13.1	29.3	Tr.	c
13551	28-42	C	2.4a	1.8a	0.8	1.2	1.8	42.3	49.7	12.6	32.1	12	sic

LABORATORY NUMBER	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
13547	5.3			1.08	0.116	9	3.5	20.6	1.55c	23.3	1.53c	1.60c	10.9
13548	5.5			0.33	0.077	4	7.8	23.9	1.59	28.0	1.49	1.71	23.4
13549	5.1			0.24	0.076		8.2	23.4	1.59	28.2	1.49	1.69	23.4
13550	5.0			0.21			6.8	26.4	1.50	28.6	1.47	1.66	21.6
13551	4.9			0.16			5.8	20.8	1.58	25.9	1.52	1.66	19.8

LABORATORY NUMBER	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat. % on Sum Cations	5C1 Base Sat. % NH_4OAc	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g
		milliequivalents per 100g soil								
13547	9.6	5.3	0.4	<0.1	0.3	9.2	39	62	6.0	15.2
13548	16.1	12.6	0.8	<0.1	0.2	9.4	59	84	13.6	23.0
13549	15.8	10.3	0.9	<0.1	0.2	11.3	50	72	11.4	22.7
13550	14.2	8.4	0.6	<0.1	0.2	10.8	46	65	9.2	20.0
13551	13.8	6.9	0.6	<0.1	0.2	10.8	42	56	7.7	18.5

a. Few Fe-Mn? concr., and ferruginous sandstone fragments.
b. Common Fe-Mn? concr., and ferruginous sandstone fragments.
c. Range is 0.12 to 0.16 g/cc.

Soil type:	Mimosa silt loam
Soil No. :	960Tenn-71-35
Location:	Putnam County, Tennessee TN-SCD-6; 2.2 miles northwest of Gentry on Granville Road. About 200 yards northwest of road. Photo AEW-5N-24.
Vegetation and Use:	Corn, 1960.
Slope and Land Form:	Eroded 12 percent slope; upland.
Drainage and Permeability:	Well drained; surface runoff rapid; permeability slow to very slow.
Parent Material:	Phosphatic limestone.
Samples collected by:	George T. Jackson, S. R. Bacon, B. C. Cox.
Profile Described by:	George T. Jackson.

Horizon and Lincoln Lab. No.	Depth	
Ap 13547	0 to 7 inches	Brown (10YR4/3) silt loam with moderate medium granular structure; friable; few undecomposed plant remains; few chert fragments; medium acid; clear wavy boundary.
B21 13548	7 to 15 inches	Faintly variegated yellowish brown (10YR5/8) and strong brown (7.5YR5/8) silty clay loam with moderate to strong medium subangular blocky structure; common clay films; firm; few small chert fragments; strongly acid; gradual wavy boundary.
B22 13549	15 to 24 inches	Variegated strong brown (7.5YR5/6), yellowish red (5YR4/6) and light brownish gray (10YR6/2) clay; variegations are common, medium, distinct; moderate to strong medium subangular blocky structure; thin common clay films; firm; very strongly acid; gradual wavy boundary.
B3 13550	24 to 28 inches	Variegated strong brown (7.5YR5/6), yellowish red (5YR4/6), and yellowish brown (10YR5/6) silty clay loam; variegations are common, medium, distinct; moderate to strong medium angular blocky structure; common thick clay films; firm; few fine chert fragments and black concretions; very strongly acid; clear wavy boundary.
C 13551	28 to 42 inches	Variegated strong brown (7.5YR 5/6) and yellowish brown (10YR 5/8) silty clay loam; variegations are common, medium and distinct; moderate to strong fine angular blocky structure; common thick clay films; firm to somewhat friable; few to common chert fragments and common black 1-5-mm. concretions; very strongly acid.

Remarks: Color and consistency are for moist soil.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Minvale silt loam SOIL Nos. S53Tenn-5-19 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53764-53767

Depth (in.)	Horizon	1B1b Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (< 0.002)	Size class and particle diameter (mm) Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)	(2-0.1)			Coarse fragments 2A2 > 2	2-19	19-76
		Pct. of < 2 mm														Pct.	Pct. of < 76mm	
0-7	Ap	37.4	49.5	13.1	2.6	9.8	7.8	9.8	7.4	16.5	33.0	29.3	30.0			3		
7-25	B1	26.3	42.2	31.5	1.6	7.0	5.5	6.6	5.6	13.3	28.9	22.4	20.7			tr.		
25-36	B2	28.4	43.0	28.6	1.7	7.7	5.8	7.0	6.2	12.9	30.1	23.1	22.2			tr.		
36-55	C	29.8	45.5	24.7	2.4	8.2	6.0	6.9	6.3	13.4	32.1	23.6	23.5			tr.		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N	Carbonate as $CaCO_3$ Pct.	Bulk density g/cc	g/cc	g/cc	Water content Pct	Pct.	Pct.	pH 8C1a (1:1) H_2O
0-7	0.87										7.2
7-25	0.11										5.2
25-36	0.09										5.1
36-55	0.05										5.2

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations	Base saturation 5C3 Sum Cations Pct	Pct.
	meq/100 g								
0-7	2.1	0.9	tr.	tr.	3.0	1.8	4.8	62	
7-25	0.8	0.4	tr.	tr.	1.2	7.3	8.5	14	
25-36	0.3	0.1	tr.	tr.	0.4	7.4	7.8	5	
36-55	0.2	0.2	tr.	tr.	0.4	6.7	7.1	6	

Depth (in.)

USDA SCS-BELTSVILLE MD 1964

Soil Type: Minvale silt loam
Soil No.: 853Tenn-5-19
Location: Blount County, Tennessee. 2 miles east of Wildwood.
Vegetation and land use: Idle. Weeds and some volunteer lespedeza.

Horizon and Beltsville Lab. No.	
Ap 53764	0 to 7 inches. Yellowish brown (10YR 5/4) very friable silt loam.
B1 53765	7 to 25 inches. Strong brown (7.5YR 5/8) or yellowish red (5YR 5/8) friable silty clay loam; weakly developed fine blocky structure.
B2 53766	25 to 36 inches. Strong brown (7.5YR 5/8) friable silty clay loam; weak medium blocky structure.
C 53767	36 to 55 inches. Strong brown (7.5YR 5/8) friable clay loam with numerous prominent brownish yellow (10YR 6/6) mottles; moderate medium blocky structure. Few black specks and stains. Occasional black concretion.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Minvale silt loam SOIL Nos. S53Tenn-5-25 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53784-53788

Depth (in.)	Horizon	1B1b Total Sand (2–0.05)	Total Silt (0.05–0.002)	Total Clay (< 0.002)	Sand: Very coarse (2–1)	Sand: Coarse (1–0.5)	Sand: Medium (0.5–0.25)	Sand: Fine (0.25–0.1)	Sand: Very fine (0.1–0.05)	Silt: (0.05–0.02)	Silt: Int. III (0.02–0.002)	Silt: Int. II (0.2–0.02)	Silt: (2–0.1)			2A2 Coarse fragments > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct. of < 76mm	
0-5	Ap	16.7	66.9	16.4	3.0	2.2	2.6	5.4	3.5	13.5	53.4	19.9	13.2			24		
5-10	A3	13.2	66.2	20.6	1.4	1.7	2.1	4.7	3.3	14.4	51.8	20.4	9.9			17		
10-16	B1	12.4	61.7	25.9	2.2	1.8	1.7	3.8	2.9	11.5	50.2	16.5	9.5			15		
16-34	B2	8.6	51.4	40.0	1.0	1.1	1.3	2.9	2.3	9.2	42.2	13.2	6.3			tr.		
34-52	C	5.2	32.4	62.4	0.8	0.8	0.7	1.5	1.4	4.2	28.2	6.4	3.8			tr.		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	Bulk density g/cc	Bulk density g/cc		Water content Pct.	Water content Pct.	Water content Pct.			pH		8C1a (1:1) H_2O
0-5	2.72																	6.0
5-10	0.51																	5.0
10-16	0.29																	5.0
16-34	0.19																	4.8
34-52	0.10																	4.8

Depth (in.)	Extractable bases 6N2d Ca	6Q2b Mg	6P2a Na	6Q2a K	5B1a Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-5	3.2	0.5	tr.	0.2	3.9	6.5	10.4									38	
5-10	0.7	0.2	tr.	0.1	1.0	5.0	6.0									17	
10-16	0.8	0.2	tr.	0.1	1.1	5.3	6.4									17	
16-34	0.6	0.5	tr.	tr.	1.1	6.8	7.9									14	
34-52	0.3	0.3	tr.	tr.	0.6	9.7	10.3									6	

Depth (in.)

USDA SCS HYATTSVILLE MD 1964

Soil Type: Minvale silt loam
Soil No.: S53Tenn-5-25
Location: Blount County, Tennessee. 1/4 mile northeast of Mt. Lebanon.
Vegetation and land use: Pasture. Lespedeza and volunteer grasses, and weeds.

Horizon and Beltsville Lab. No.	
Ap 53784	0 to 5 inches. Pale brown (10YR 6/3) very friable silt loam.
A3 53785	5 to 10 inches. Yellowish brown (10YR 5/6) to strong brown (7.5YR 5/6) friable silt loam; moderately developed fine blocky structure. Gradual gradation to;
B1 53786	10 to 16 inches. Strong brown (7.5YR 5/8) friable silty clay loam; moderate medium blocky structure. Gradual gradation to;
B2 53787	16 to 34 inches. Yellowish red (5YR 5/8) moderately friable silty clay loam; moderate medium blocky structure. Gradual gradation to;
C 53788	34 to 52 inches. Yellowish red (5YR 4/8) moderately friable silty clay loam; a few distinct brownish yellow mottles; strong medium to coarse blocky structure.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Putnam County, Tennessee SOIL TYPE Monongahela silt loam

LAB NOS. 12573-12581 SOIL NOS. S59Tenn-71-26

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1										
12573	0-7	Ap	0.5a	1.4	1.1	18.2	15.4	55.8	7.6	48.3	36.5	Tr.	sil
12574	7-11	B1	0.3a	1.2	0.9	15.9	13.8	58.5	9.4	44.4	39.8	Tr.	sil
12575	11-15	B21	0.6a	1.2	0.9	15.9	13.5	56.6	11.3	43.6	38.4	Tr.	sil
12576	15-26	B22	0.5a	1.0	0.8	14.3	12.6	55.4	15.4	39.6	39.2	Tr.	sil
12577	26-31	B3m1	0.3	0.9	0.8	13.6	12.8	52.4	19.2	39.3	35.6	Tr.	sil
12578	31-39	B3m2	0.3	1.0	0.8	14.0	12.7	51.2	20.0	37.9	36.1	Tr.	sil
12579	39-48	B3m3	0.3	1.3	0.9	14.0	12.5	47.0	24.0	36.8	32.7	Tr.	l
12580	48-54	Du1	0.2	1.1	0.9	14.1	12.6	48.0	23.0	38.0	32.7	Tr.	l
12581	54-60+	Du2	0.3a	1.5a	1.2	17.3	14.5	38.1	27.1	39.9	25.0	Tr.	cl/l

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12573	5.0			0.91	0.057	16	0.7	20.7	1.45	22.4	1.47	1.49	3.4
12574	4.8			0.29	0.023	13	0.8	18.2	1.66b	17.3	1.67b	1.68	3.6
12575	4.8			0.20	0.023		1.0	18.4	1.66	17.6	1.67	1.68	4.2
12576	4.9			0.16	0.015		1.4	17.5	1.73	17.5	1.71	1.74	6.1
12577	4.9			0.09			1.8	19.2	1.67	18.7	1.68	1.70	7.9
12578	4.9			0.07			2.0	16.9	1.75	16.8	1.75	1.78	8.6
12579	4.9			0.07			3.3	19.6	1.65	19.4	1.65	1.68	10.7
12580	4.8			0.06			2.3						9.5
12581	4.9			0.06			4.9						13.0

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat.% on Sum Cations	5C1 Base Sat.% NH_4OAc	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g			
		milliequivalents per 100g soil											
12573	3.8	0.4	0.2	<0.1	0.1	5.8	11	18	0.7	6.5			
12574	2.8	0.3	0.2	<0.1	0.1	3.6	14	21	0.6	4.2			
12575	3.2	0.2	0.2	<0.1	0.1	4.4	10	16	0.5	4.9			
12576	5.2	0.3	0.3	<0.1	0.1	6.3	10	13	0.7	7.0			
12577	5.8	<0.1	0.2	<0.1	0.1	7.0	4	5	0.3	7.3			
12578	6.5	<0.1	0.2	<0.1	0.1	7.3	4	5	0.3	7.6			
12579	7.6	0.1	0.4	<0.1	0.1	8.5	6	8	0.6	9.1			
12580	6.7	<0.1	0.2	0.1	0.1	8.0	5	6	0.4	8.4			
12581	7.2	<0.1	0.2	<0.1	0.1	8.8	3	4	0.3	9.1			

a. Few Fe-Mn? bearing aggregates.
b. Range is 0.12 to 0.16 g/cc.

Soil type: Monongahela silt loam

Soil Nos. : S59Tenn-71-26

Location: Putnam County, Tennessee, TN-SCD-6; One mile south of Algood on Jones farm; 1000 feet east of homesite and 30 feet east of corner of woodland on corner of Draper farm. Photo AEW-1N-43.

Vegetation and Use: Broom sedge, golden rod, blackberries; idle for the past 15 years.

Slope and Land Form: 2-3 percent; probably a pediment terrace.

Drainage and Permeability: Moderately well drained, surface runoff slow; internal drainage moderate to slow; slow permeability due to impervious fragipan.

Parent Material: Old general alluvium washed from upland soils derived from shale, sandstone and some limestone.

Samples Collected by: Edwood Pederson, J. Fleming, M. E. Springer, J. A. Elder D. K. Springer, G. T. Jackson, B. C. Cox, December 2, 1959.

Profile Described by: J. A. Elder, M. E. Springer, B. C. Cox, G. T. Jackson, December 2, 1959.

Horizon and Lincoln Lab. No.	Depth	
Ap 12573	0 to 7 inches	Brown (10YR5/3) loam or silt loam with weak fine granular structure; very friable; many roots; clear wavy boundary.
B1 12574	7 to 11 inches	Pale brown to light yellowish brown (10YR6/3-6/4) silt loam with weak fine subangular blocky structure; friable; many roots and pores; clear wavy boundary.
B21 12575	11 to 15 inches	Light yellowish brown (2.5Y6/4) to (10YR 6/4) silt loam with weak fine angular blocky structure; friable; many roots, common pores; gradual smooth boundary.
B22 12576	15 to 26 inches	Light yellowish brown (2.5Y6/4) to (10Y6/4) fine silt loam with moderate medium subangular blocky structure; friable; common roots; clear smooth boundary.
B3m1 12577	26 to 31 inches	Light yellowish brown (2.5Y6/4) silt loam with common medium distinct mottles of yellowish brown (10YR5/6) and common fine faint mottles of light gray (10YR7/1); massive; friable; few fine roots; clear smooth boundary.
B3m2 12578	31 to 39 inches	Light yellowish brown (10YR6/4) silty clay loam with common medium faint mottles of yellowish brown (10YR5/6) and brownish yellow (10YR6/6) and few fine faint mottles of light gray (10YR7/1); massive; few fine roots; friable to firm; clear smooth boundary.
B3m3 12579	39 to 48 inches	Light gray (10YR7/1) and yellowish brown (10YR5/6-6/6) fine silt loam with few coarse distinct streaks of strong brown (7.5YR5/8); massive, friable to firm; clear smooth boundary.
Du1 12580	48 to 54 inches	Light gray (2.5Y7/2) and light yellowish brown (2.5Y6/4) silt loam with few streaks of strong brown (7.5YR5/6); massive; friable to firm.
Du2 12581	54 to 60 inches plus	Coarsely variegated red (2.5YR4/8), strong brown (7.5YR5/8) light gray (10YR7/2), and yellowish brown (10YR5/6) clay loam with a massive structure; firm.

Remarks: Colors and consistency are for moist soil.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Putnam County, Tennessee SOIL TYPE Monongahela silt loam

LAB NOS. 12582-12590 SOIL NOS. S59Tenn-71-27

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1R1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12582	0-7	Ap	0.4a	1.1a	1.6	18.7	14.8	51.1	12.3	44.6	34.2	Tr.	sil
12583	7-12	A2	0.4a	0.9a	1.0	12.0	8.9	60.4	16.4	31.0	46.5	Tr.	sil
12584	12-17	B21	0.5a	0.9a	1.1	14.5	11.2	53.9	17.9	35.1	40.0	Tr.	sil
12585	17-26	B22	0.6a	0.7a	1.2	16.5	13.1	48.8	19.1	41.0	33.1	Tr.	l
12586	26-30	B3m1	0.5a	0.9a	1.2	18.6	14.8	45.9	18.1	44.4	30.1	Tr.	l
12587	30-42	B3m2	0.5a	0.8a	1.3	19.2	15.6	45.2	17.4	45.5	29.5	Tr.	l
12588	42-53	B3m3	0.5	0.9	1.4	19.9	16.3	43.3	17.7	45.8	28.4	Tr.	l
12589	53-68	B3m4	0.2	1.2	1.7	23.9	18.0	33.2	21.8	48.5	19.9	Tr.	l
12590	68-95+	Cg	0.6	2.0	2.7	36.3	23.8	22.8	11.8	60.7	11.3	Tr.	fsl

	pH 8C1a H_2O 1:1		6C1a Free Iron as Fe_2O_3 %	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	WATER CONTENT 4B1b 1/3-Bar %	4B2 15-Bar %
12582	6.6		1.2	0.60	0.057	10	19.3	1.57	18.7	1.58	1.61	15.3	5.0
12583	6.3		1.4	0.29	0.026	11	20.6	1.54	19.7	1.54	1.58	19.3	6.4
12584	4.9		1.6	0.18	0.022		20.3	1.61b	19.0	1.63b	1.66b	20.8	6.8
12585	4.8		1.7	0.13	0.018		20.8	1.54	20.3	1.54	1.58	16.8	7.5
12586	4.8		1.7	0.07			17.7	1.72	17.3	1.72	1.73	17.2	7.2
12587	4.8		1.6	0.06			14.8	1.79	16.1	1.76	1.80	15.6	6.3
12588	4.6		2.0	0.06			14.6	1.78	16.1	1.76	1.78	15.6	7.6
12589	4.6		2.4	0.08			16.4	1.74			1.75	16.8	9.8
12590	4.6		1.0	0.04									5.6

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat.% on Sum Cations	5C1 Base Sat.% NH_4OAc	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g	6E1a $CaCO_3$ equivalent %
		milliequivalents per 100g soil									
12582	5.0	4.2	0.5	<0.1	0.1	2.2	68	96	4.8	7.0	< 1
12583	5.5	3.8	0.4	<0.1	0.1	3.4	56	78	4.3	7.7	
12584	5.7	1.4	0.2	<0.1	0.1	6.3	21	30	1.7	8.0	
12585	6.4	1.0	0.1	<0.1	0.1	7.8	13	19	1.2	9.0	
12586	6.2	0.2	0.5	<0.1	0.1	7.5	10	13	0.8	8.3	
12587	5.4	<0.1	0.2	<0.1	0.1	7.3	4	6	0.3	7.6	
12588	5.7	<0.1	0.4	<0.1	0.1	7.3	6	9	0.5	7.8	
12589	6.4	<0.1	0.2	<0.1	0.1	8.5	3	5	0.3	8.8	
12590	3.4	<0.1	0.4	<0.1	<0.1	4.4	8	12	0.4	4.8	

a. Few Fe-Mn? bearing aggregates.
b. Range is 0.12 to 0.16 g/cc.

Soil type: Monongahela silt loam

Soil No. : 859Tenn-71-27

Location: Putnam County, Tennessee, 1 1/4 mile southwest of Algood; 1/4 mile north of Tennessee Central Railroad; 30 ft. north of fence midway between gravel road and woodlot, Boatman farm. Photo AEW-1N-23.

Vegetation and Use: Broom sedge predominates; few scattered red cedar; pasture.

Slope and Land Form: 3 percent slope, probably a pediment terrace.

Drainage and Permeability: Moderately well drained, surface runoff slow to moderate; internal drainage moderate to slow; slow permeability due to fragipan.

Parent Material: Old general alluvium washed from upland soils derived from shale, sandstone and some limestone.

Samples Collected by: Edwood Pederson, M. E. Springer, J. A. Elder, D. K. Springer, G. T. Jackson, B. C. Cox, S. R. Bacon, J. Fleming

Profile Described by: G. T. Jackson, December 3, 1959.

Horizon and Lincoln Lab.No.	Depth	
Ap 12582	0 to 7 inches	Brown (10YR5/3) silt loam with a weak fine granular structure; very friable; abrupt wavy boundary.
A2 12583	7 to 12 inches	Pale brown (10YR6/3) to light yellowish brown (10YR6/4) silt loam with a weak medium granular structure; friable; clear wavy boundary.
B21 12584	12 to 17 inches	Yellowish brown (10YR5/4) to light yellowish brown (10YR6/4) silty clay loam or silt loam with a weak fine subangular blocky structure; friable; common pores; few charcoal fragments; clear wavy boundary.
B22 12585	17 to 26 inches	Yellowish brown (10YR5/4) to light yellowish brown (10YR6/4) silty clay loam with a moderate medium subangular blocky structure; friable; common pores; few fine chert fragments; boundary clear wavy.
B3m1 12586	26 to 30 inches	Yellowish brown (10YR5/6) loam with many coarse mottles of strong brown (7.5YR5/6) and pale brown (10YR6/3); weak to moderate medium and coarse angular blocky structure; friable to firm; clear wavy boundary.
B3m2 12587	30 to 42 inches	Yellowish brown (10YR5/6) loam with streaks of pale brown (10YR6/3) and many coarse prominent mottles of brown (7.5YR4/4); massive structure; friable to firm; gradual, arbitrary boundary.
B3m3 12588	42 to 53 inches	Yellowish brown (10YR5/6) loam with many prominent streaks and spots of brown (7.5YR4/4); many coarse distinct mottles of light brownish gray (10YR6/2); massive structure; friable to firm; clear wavy boundary.
B3m4 12589	53 to 68 inches	Mottled red (2.5YR4/8), yellowish brown (10YR5/6), and light brownish gray (10YR6/2) loam; mottles are many, coarse and prominent; massive structure; firm; clear wavy boundary.
Cg 12590 (auger sample)	68 to 95 inches	Mottled red (2.5YR5/8), light gray (10YR7/1), and brownish yellow (10YR6/6) very fine sandy loam; mottles are many, coarse and prominent; friable.

Remarks: Colors and consistency are for moist soil. Tongues of light brownish gray (10YR 6/2) to pale brown (10YR 6/3) silty material are common in horizons extending from the bottom of the B22 to the top of the B3m4. Tongues vary in diameter from 2 to 6 inches. The massive pan breaks along vertical cleavages. There are large polygons with light brownish gray (10YR 6/2) to gray (10YR 6/1) faces in the B3m2 and B3m3. There are light brownish gray streaks but no polygons in the B3m4. The B3m1 is slightly firm but more friable than the lower pan horizons. Wormholes extend into the B22 but not through it.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Putnam County, Tennessee SOIL TYPE Muskingum silt loam

LAB. NOS. 12678-12681 SOIL NOS. S59Tenn-71-28

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2 <19mm	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12678	0-2	A1	0.9	0.8	0.9	13.4	15.7	48.6	19.7	40.8	35.0	9	1
12679	2-8	A2	1.0a	0.9b	1.1	14.4	16.1	46.8	19.7	41.8	33.4	12	1
12680	8-17	BC	2.5b	1.4b	1.2	14.3	15.0	43.9	21.7	39.0	31.7	22	1
12681	17-25	C1	1.2b	1.7b	2.1	23.6	23.6	35.9	11.9	54.2	24.5	3	vfsl

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12678	5.0			4.88	0.229	21	1.8						9.9
12679	5.0			1.06	0.074	14	1.9						7.9
12680	4.9			0.29	0.034	8	2.4	26.1	1.38	25.7	1.39	1.40	8.3
12681	4.8			0.13	0.023		1.6						5.0

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat.% on Sum Cations	5C1 Base Sat.% NH_4OAc	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g		
		milliequivalents per 100g soil										
12678	14.2	0.8	1.0	<0.1	0.3	19.1	10	15	2.1	21.2		
12679	7.4	0.1	0.2	<0.1	0.1	12.2	3	5	0.4	12.6		
12680	7.4	0.3	0.2	<0.1	0.2	9.7	7	9	0.7	10.4		
12681	4.7	0.2	0.2	<0.1	0.1	6.3	7	11	0.5	6.8		

a. Common Fe-Mn? bearing aggregates.
b. Few Fe-Mn? bearing aggregates.

Soil type: Muskingum silt loam

Soil No. : 359Tenn-71-28

Location: Putnam County, Tennessee. 1.1 miles east of Monterey High School along Clarkrange road; 100 feet north of road. Photo AEW-3N-41.

Vegetation and Use: Mixed upland oak forest.

Slope and Land Form: Uneroded 15 percent; upland north - facing slope; elevation 1850 feet.

Drainage and Permeability: Somewhat excessively drained with rapid surface runoff and medium to rapid internal drainage; moderate permeability.

Parent Material: Predominantly siltstone; Pennsylvanian rocks.

Samples Collected by: J. A. Elder, G. T. Jackson, B. C. Cox, S. R. Bacon - December 10, 1959.

Profile Described by: G. T. Jackson, December 10, 1959.

Horizon and Lincoln Lab. No.	Depth	
A1 12678	0 to 2 inches	Very dark gray brown (10YR3/2) silt loam with weak fine granular structure; very friable; many roots; few small siltstone fragments; clear wavy boundary.
A2 12679	2 to 8 inches	Brown (10YR4/3) silt loam with weak fine granular structure; friable; many roots; few small siltstone fragments; gradual wavy boundary.
BC 12680	8 to 17 inches	Yellowish brown (10YR5/6) silt loam with weak fine and medium subangular blocky structure; few thin discontinuous clay films; friable; many roots; numerous small siltstone fragments; gradual wavy boundary.
C1 12681	17 to 25 inches	Yellowish brown (10YR5/6) loam with weak fine subangular blocky structure; few roots; numerous siltstone fragments.

Remarks: Colors and consistency are for moist soil. C1 horizon contained about 10 percent siltstone fragments; these were discarded from the sample.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Putnam County, Tennessee SOIL TYPE Muskingum silt loam

LAB NOS. 12682 - 12685 SOIL NOS. S59Tenn-71-29

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1 VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY, < 0.002	INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	2A2 > 2' (<1 cm)	TEXTURAL CLASS
12682	0-2	A1	1.4a	1.6b	3.2	7.3	19.4	51.8	15.3	47.1	28.9	18	sil
12683	2-9	A2	2.1b	1.5b	2.9	7.3	18.8	50.4	17.0	44.8	29.2	17	sil/l
12684	9-19	BC	2.7b	1.8b	2.8	6.8	18.1	44.5	23.3	43.2	23.9	11	l
12685	19-30	C1	3.2b	2.0b	1.5	3.9	11.5	40.3	37.6	31.8	22.5	16	cl

	pH 8C1a H_2O 1:1		6C1a Free Iron as Fe_2O_3 %	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	WATER CONTENT 4B1b 1/3-Bar %	4B2 15-Bar %
12682	4.7		2.0	3.94	0.139	28							8.1
12683	4.9		2.2	0.56	0.041	14	20.7	1.52	20.5	1.54	1.54	15.4	6.3
12684	5.0		2.8	0.22	0.026		19.5	1.62	19.9	1.62	1.64	16.4	9.8
12685	4.9		5.6	0.17	0.033								15.6

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat. % on Sum Cations	5C1 Base Sat. % NH_4OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations
		milliequivalents per 100g soil							me/100g	
12682	10.7	0.2	0.2	<0.1	0.2	15.8	4	6	0.6	16.4
12683	4.8	<0.1	<0.1	<0.1	0.1	6.1	2	2	0.1	6.2
12684	6.6	0.1	0.2	<0.1	0.1	7.3	5	6	0.4	7.7
12685	11.6	<0.1	0.4	<0.1	0.2	12.7	4	5	0.6	13.3

a. Common Fe-Mn? bearing aggregates.
b. Few Fe-Mn? bearing aggregates.

Soil type: Muskingum silt loam

Soil No. : S59Tenn-71-29

Location: Putnam County, Tennessee. 3.2 miles east of Monterey High School. About 400 feet south of Clarkrange road. Photo AEW-3N-61 (1955).

Vegetation and Use: White, black and southern red oak with some Virginia pine. Cut-over forest.

Slope and Land Form: Uneroded 16 percent slope; upland southeast facing slope; elevation about 1850 feet.

Drainage and Permeability: Somewhat excessively drained with rapid surface runoff and medium to rapid internal drainage; moderate permeability.

Parent Material: Siltstone and shale; Pennsylvanian rocks.

Samples Collected by: J. A. Elder, G. T. Jackson, S. R. Bacon, B. C. Cox - December 10, 1959.

Profile Described by: G. T. Jackson, December 10, 1959

Horizon and Lincoln Lab. No.	Depth	
A1 12682	0 to 2 inches	Dark grayish brown (10YR4/2) silt loam with weak fine granular structure; very friable; many roots; clear wavy boundary.
A2 12683	2 to 9 inches	Yellowish brown (10YR5/4) silt loam with weak medium granular structure; friable; many roots; few small siltstone fragments; gradual wavy boundary.
BC 12684	9 to 19 inches	Yellowish brown (10YR5/4-5/6) fine silt loam with weak fine and medium subangular blocky structure; friable; common roots; common small siltstone fragments; gradual wavy boundary.
C1 12685	19 to 30 inches	Strong brown (7.5YR5/6) shaly silty clay loam with few medium distinct variegations of yellowish brown (10YR5/6), yellowish red (5YR5/6) and olive yellow (2.5Y6/6); weak fine angular and subangular blocky structure; 20 percent of volume is fine siltstone fragments; occasional roots.

Remarks: Colors and consistency are for moist soil.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Hardin County, Tennessee SOIL TYPE Paden silt loam

LAB NOS. 12316-12325 SOIL NOS. 859Tenn-36-2

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12316	0-2	A1	0.2a	1.0a	0.7b	3.8	3.2	82.9	8.2	44.6	43.9	-	si
12317	2-9	A2	0.3c	0.6c	0.6c	3.2b	2.9	82.8	9.6	44.6	43.2	-	si
12318	9-18	B21	0.1c	0.4c	0.4c	2.6d	2.6	68.6	25.3	32.9	40.0	-	sil
12319	18-23	B22	0.2c	0.6b	0.5d	3.6	3.7	68.3	23.1	35.8	38.6	-	sil
12320	23-26	B23	0.4c	0.4b	0.5d	4.4	4.6	69.5	20.1	36.5	40.5	-	sil
12321	26-42	B3m	0.2c	0.2b	0.4d	4.1	4.8	65.6	24.7	36.1	37.1	-	sil
12322	42-52	IIB21b	<0.1	0.1	0.4	5.0	4.9	47.3	42.3	26.9	28.7	-	sic
12323	52-71	B22b	0.1	0.1	0.5	5.8	5.0	38.5	50.0	23.1	24.3	-	c
12324	71-87	B3b	<0.1	0.1	0.5	6.6	5.5	42.5	44.8	24.8	27.6	-	sic
12325	87-111	Cb	<0.1	0.2	0.7	9.3	8.0	44.4	37.4	32.1	26.3	-	sicl

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12316	4.8			3.38	0.188	18	1.0						5.6
12317	4.7			0.90	0.066	14	1.1	21.4	1.44	25.0	1.44	1.45	3.7
12318	4.9			0.28	0.036	8	2.7	21.7	1.46	24.2	1.44	1.49	10.6
12319	4.9			0.16	0.026		2.5	22.0	1.50	23.2	1.49	1.53	9.6
12320	5.0			0.09	0.020		2.1	20.0	1.56	21.0	1.58	1.58	8.5
12321	5.2			0.06			1.7	17.8	1.69	17.5	1.70	1.71	9.4
12322	4.9			0.07			1.3	18.0	1.67			1.71	16.4
12323	4.7			0.09			2.7	18.8	1.68			1.71	20.0
12324	4.6			0.08			2.0	16.6	1.71			1.73	16.7
12325	4.6			0.09			1.3						14.7

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5C1 Base Sat.% NH_4OAc	5C3 Base Sat.% on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g			
		EXTRACTABLE CATIONS 5B1a											
		millieqivalents per 100g soil											
12316	8.8	1.6	0.9	11.6	<0.1	0.3	32	19	2.8	14.4			
12317	4.6	0.1	0.3	7.3	<0.1	0.2	13	8	0.6	7.9			
12318	10.5	<0.1	1.7	11.7	<0.1	0.2	18	14	1.9	13.6			
12319	9.7	<0.1	1.7	10.7	0.1	0.1	20	15	1.9	12.6			
12320	9.5	0.1	1.3	9.7	0.1	0.1	17	14	1.6	11.3			
12321	9.9	0.1	1.5	11.2	0.1	0.1	18	14	1.8	13.0			
12322	16.1	0.1	3.0	16.4	0.4	0.1	22	18	3.6	20.0			
12323	17.2	0.1	3.8	15.7	0.6	0.1	27	23	4.6	20.3			
12324	14.9	0.3	3.3	13.2	0.7	0.1	30	25	4.4	17.6			
12325	12.0	0.7	2.5	10.5	0.9	0.1	35	29	4.2	14.7			

a. Many Fe-Mn? bearing aggregates. Common organic matter fragments.
b. Common Fe-Mn? bearing aggregates.
c. Many Fe-Mn? bearing aggregates.
d. Few Fe-Mn? bearing aggregates.

Soil type: Paden silt loam

Soil No.: 859Tenn-36-2

Location: Hardin County, Tennessee, 22 miles north of Savannah on Cravens Landing road on C. H. Hughes farm, 100 yards west of gravel road. Photo: AIK-6F-88 (1955)

Vegetation and Use: Cutover forest of red oak, post oak, white oak, and sweet gum. Few small patches of cedar and sumac; scattered patches of sedge grass and briars.

Slope and Land Form: Gently sloping (3 percent). Broad, gently sloping ridge on north; northeast aspect. (Elevation 435 feet).

Drainage and Permeability: Moderately well-drained; medium to slow runoff and slow internal drainage. Permeability is moderately slow.

Parent Material: Loess overlying old general alluvium on terraces.

Samples collected by: C. B. Breinig, Edwood Pedersen, George Phibbs, T. R. Love, W. H. Proffitt, E. T. Lampley, Bobby Hinton, and E. C. Sease. October 19, 1959.

Profile described by: W. H. Proffitt, T. R. Love, and E. C. Sease. October 19, 1959

Horizon and Lincoln Lab. No.	Depth	
A1 12316	0 to 2 inches	Very dark grayish brown (10YR 3/2) silt loam; weak to medium fine granular structure; very friable; many fine roots, clear smooth boundary.
A2 12317	2 to 9 inches	Light yellowish brown (10YR 6/4) to yellowish brown (10YR 5/4) silt loam; weak fine granular structure; very friable; many fine roots; clear smooth boundary.
B21 12318	9 to 18 inches	Dark yellowish brown (10YR 4/4) to strong brown (7.5YR 5/6) fine silt loam; weak fine subangular blocky structure; friable; common small roots; clear smooth boundary.
B22 12319	18 to 23 inches	Yellowish brown (10YR 5/4-5/6) fine silt loam; weak fine subangular blocky structure; friable; few fine pores; few roots; clear wavy boundary.
B23 12320	23 to 26 inches	Yellowish brown (10YR 5/6) silt loam with common fine and medium faint mottles of light yellowish brown (10YR 6/4), light brownish gray (10YR 6/2), gray (10YR 6/1) and strong brown (7.5YR 5/6); weak fine subangular blocky structure; friable; common small pores; clear wavy boundary.
B3m 12321	26 to 42 inches	Mottled yellowish brown (10YR5/4), light brownish gray (10YR6/2) and gray (10YR6/1) silt loam; moderate fine angular and subangular blocky structure; friable; patchy clay films; few small holes and pores; clear wavy boundary.
IIB21b 12322	42 to 52 inches	Mottled red (2.5YR4/6), yellowish red (5YR4/6), yellowish brown (10YR5/6), pale brown (10YR6/3), and gray (10YR5/1-6/1) clay; moderate to weak medium angular blocky structure; firm; patchy clay films; few small holes or pores; gradual smooth boundary.
B22b 12323	52 to 71 inches	Mottled strong brown (7.5YR5/6), yellowish red (5YR5/6), gray (10YR5/1-6/1) and pale brown (10YR6/3) clay; mottles are many coarse distinct; moderate medium angular blocky structure; firm; patchy clay films; diffuse smooth boundary.
B3b 12324	71 to 87 inches	Mottled strong brown (7.5YR5/6), yellowish red (5YR5/6) and gray (10YR6/1) clay; mottles are many coarse distinct; weak coarse angular blocky structure to massive; firm; few thin patchy clay films; diffuse smooth boundary.
Cb 12325	87 to 111 inches	Mottled brownish yellow (10YR6/6), yellowish brown (10YR5/6), pale brown (10YR6/3), and gray (10YR6/1), clay, massive, very firm; occasional semi-angular chert gravel.

Remarks: Colors given are for moist soil.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Hardin County, Tennessee SOIL TYPE Paden silt loam

LAB NOS. 12326 - 12334 SOIL NOS. S59Tenn-36-3

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12326	0-1	A1 1/	-	-	-	-	-	-	-	-	-	-	-
12327	1-8	A2	0.4a	1.2b	1.6c	5.0	4.5	77.7	9.6	41.7	42.9	-	sil
12328	8-16	B21	0.2a	0.6b	1.0c	3.0	2.8	66.8	25.6	31.7	39.4	-	sil
12329	16-23	B22	<0.1	0.6b	1.0c	3.1	2.9	65.3	27.1	30.7	39.1	-	sicl/sil
12330	23-28	B3	0.1a	0.7b	1.2c	3.6	3.8	65.0	25.6	31.6	39.0	-	sil
12331	28-34	B3m1	0.2a	0.9b	1.9c	6.7	6.8	61.9	21.6	37.1	35.0	-	sil
12332	34-46	B3m2	0.2a	1.0b	2.2c	7.5	8.0	55.9	25.2	37.0	30.8	-	sil
12333	46-67	IIB21b	0.3a	1.1c	2.9	10.0	10.9	44.4	30.4	36.2	24.2	-	cl
12334	67-91+	B3b	0.2a	1.0c	1.8c	11.6	13.4	30.4	41.6	35.7	15.6	-	c

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12326	4.3			-	-	-	-						
12327	4.7			0.69	0.041	17	1.1						3.7
12328	4.9			0.42	0.038	11	2.8	23.2	1.41	26.2	1.39	1.46	10.9
12329	5.1			0.22	0.032		2.9	20.5	1.44	24.6	1.43	1.50	11.5
12330	5.1			0.20	0.028		2.7	23.2	1.48	25.4	1.48	1.52	11.2
12331	5.3			0.06			2.3	15.4	1.70	18.8	1.66	1.68	8.8
12332	5.2			0.06			2.6	12.7	1.76	16.9	1.73	1.76	10.0
12333	5.0			0.06			3.5	10.6	1.75	18.7	1.67	1.73	12.4
12334	5.0			0.08			8.1						16.5

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5C1 Base Sat. % NH_4OAc	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g
		milliequivalents per 100g soil								
12326	-	-	-	-	-	-	-	-	-	-
12327	3.6	<0.1	0.4	12.8	<0.1	0.1	14	4	0.5	13.3
12328	9.7	0.1	2.1	13.7	<0.1	0.2	25	15	2.4	16.1
12329	11.2	0.5	2.3	11.0	<0.1	0.2	27	21	3.0	14.0
12330	11.7	0.7	2.6	11.3	0.1	0.3	32	25	3.7	15.0
12331	8.7	0.3	1.7	9.0	0.1	0.2	26	20	2.3	11.3
12332	9.8	0.1	2.5	9.7	0.2	0.1	30	23	2.9	12.6
12333	11.3	0.5	3.1	10.7	0.4	0.1	36	28	4.1	14.8
12334	12.7	1.6	4.3	12.2	0.7	0.1	53	35	6.7	18.9

1/ Sampled for pH only.
a. Many Fe-Mn? bearing aggregates.
b. Common Fe-Mn? bearing aggregates.
c. Few Fe-Mn? bearing aggregates.

Soil type: Paden silt loam

Soil No. : S59Tenn-36-3

Location: Hardin County, Tennessee, 2.8 miles north of Crump. In woods 75 feet north of gravel road half way between state highway 69 and Bethlehem Church. On Roy Welch farm. Photo: AIK-7F-20(1955).

Vegetation and Use: Forest of red oak, black oak, post oak, hickory, and few cedar.

Slope and Land Form: Gently sloping (2-3 percent slope). Broad gently sloping ridge. On north facing slope.

Drainage and Permeability: Moderately well-drained; medium to slow runoff and slow internal drainage. Permeability is moderately slow.

Parent Material: Loess overlying old general alluvium on old high terrace.

Samples collected by: Edwood Pedersen, George Phibbs, W. H. Proffitt, T. R. Love, and E. C. Sease. October 20, 1959.

Profile described by: W. H. Proffitt, T. R. Love, and E. C. Sease. October 20,1959.

Horizon and Lincoln Lab. No.	Depth	
A1 12326	0 to 1 inch	Dark gray (10YR 4/1) and dark grayish brown (10YR 4/2) to grayish brown (10YR 5/2) silt loam; weak fine granular or crumb structure; very friable; many small roots; clear smooth boundary. (Sampled for Ph only).
A2 12327	1 to 8 inches	Light yellowish brown (10YR 6/4) to yellowish brown (10YR 5/4) silt loam; weak fine granular structure; very friable; many roots; clear wavy boundary. 6 to 8 inches thick.
B21 12328	8 to 16 inches	Strong brown (7.5YR 5/6) silty clay loam to silt loam; moderate medium subangular blocky structure; friable; common small roots; clear wavy boundary. 8 to 10 inches thick.
B22 12329	16 to 23 inches	Yellowish brown (10YR 5/6) silt loam; weak fine subangular blocky structure; friable; common small roots; clear wavy boundary. 6 to 10 inches thick.
B3 12330	23 to 28 inches	Yellowish brown (10YR 5/4-5/6) silt loam with few medium faint mottles of grayish brown (10YR 5/2), strong brown (7.5YR 5/6) and yellowish red (5YR 4/6); weak fine and medium subangular blocky structure; friable; common small pores; clear smooth boundary. 2 to 8 inches thick.
B3m1 12331	28 to 34 inches	Yellowish brown (10YR 5/4-5/6) silt loam with common fine and medium faint mottles of light brownish gray (10YR 6/2), dark brown (7.5YR 4/4), grayish brown (10YR 5/2) and light yellowish brown (10YR 6/4); moderate fine and medium subangular blocky structure; friable; gray (10YR 5/1) to dark gray (10YR 4/1)clay films on a few peds; common fine tubular holes or pores; clear wavy boundary. 6 to 10 inches thick.
B3m2 12332	34 to 46 inches	Yellowish brown (10YR 5/4) silty clay loam with common medium prominent mottles of red (2.5YR 4/6), strong brown (7.5YR 5/6) brownish yellow (10YR 5/6) and gray (10YR 5/1); moderate fine and medium subangular and angular blocky structure; firm; patchy clay films not as distinct as in horizon below; occasional small roots; clear wavy boundary. 3 to 16 inches thick.
IIB21b 12333	46 to 67 inches	Mottled red (2.5YR 4/6), yellowish brown (10YR 5/6), dark brown (7.5YR 4/4), and gray (10YR 6/1) silty clay; mottles are many, medium, distinct; strong fine and medium subangular and angular blocky structure; firm to very firm; continuous clay films; occasional small root; few silica coatings on peds; clear wavy boundary. 17 to 25 inches thick.
B3b 12334	67 to 91 inches	Variegated yellowish red (5YR 4/6), brownish yellow (10YR 6/6) and yellowish brown (10YR 5/6) clay; weak medium angular blocky structure; very firm; seams of light yellowish brown (2.5YR 6/4) light olive brown (2.5Y 5/4) and grayish brown (2.5Y 5/2) about 1 to 3 mm. wide.

Remarks: Colors given are for moist soil.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Pembroke silt loam SOIL Nos. S55Tenn-16-21 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551930- 551937

Depth (in.)	Horizon	1B1b Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (< 0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	Int. III (0.02-0.002)	Int. II (0.2-0.02)	(2-0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2-19	19-76
		Pct. of < 2 mm															Pct. of < 76mm	
0-7	Ap		71.7	16.9	1.7[a]	1.8	0.9	3.1	3.9		48.9	28.8				-		
7-14	A3		66.0	25.2	1.5	1.5	0.6	1.9	3.3		47.7	22.9				-		
14-18	B1		64.1	26.8	1.5	1.4	0.5	2.0	3.7		46.3	22.9				-		
18-24	B2		62.0	28.8	1.3	1.2	0.5	2.1	4.1		43.9	23.7				tr.		
24-30	B3		60.0	31.3	0.6	0.9	0.5	2.3	4.4		43.1	22.9				-		
30-47	B1b		53.4	37.8	0.7	0.7	0.4	2.3	4.7		38.0	21.7				-		
47-63	B2b		38.9	53.2	0.6	0.6	0.4	2.2	4.1		27.3	17.3				-		
63-75	B3b		29.0	63.5	0.6	0.6	0.4	2.1	3.8		19.4	15.0				-		
75-87	C11b		23.1	70.8	0.2	0.4	0.4	1.8	3.3		16.1	11.6				-		
87-99	C12b		24.0	69.5	0.2	0.5	0.4	2.0	3.4		17.1	11.6				-		
99-111	C13b		25.7	64.0	0.4	1.0	1.1	3.7	4.1		17.2	14.7				-		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.	Ext. iron as Fe_2O_3 Pct.	Bulk density: 4A1a ⅓ bar g/cc	4A1h Oven dry g/cc	4D1 COLE	Water content: 4B1c ⅓ bar Pct.	4B2 15 bar Pct.		4C1 WRD in/in		pH: 8C1c (1:1) KCl	8C1a (1:1) H_2O
0-7	1.14	0.093	12			1.8										6.6
7-14	0.30	0.039				2.6										5.1
14-18	0.04	0.028				2.8										5.0
18-24	0.04	0.024				3.0										5.0
24-30	tr.	0.022				3.6										5.0
30-47	0.04	0.014				4.4										5.0
47-63	0.02	0.029				6.5										5.0
63-75	tr.	0.033				8.5										5.0
75-87	0.02	0.038				9.3										5.0
87-99	0.02	0.040				8.5										5.0
99-111	0.02	0.037				8.2										5.2

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3d Sum cations		6G1d Ext. Al		Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations Pct.	5C1 NH_4OAc Pct.
	meq/100 g																
0-7	6.8	0.5	0.1	0.2		4.2	11.8									64	
7-14	2.1	0.8	tr.	0.1		8.0	11.0									27	
14-18	0.7	1.1	tr.	0.1		9.4	11.3									17	
18-24	0.2	0.8	tr.	0.1		9.9	11.0									10	
24-30	0.1	0.5	0.1	0.1		10.3	11.1									7	
30-47	0.1	tr.	0.1	0.1		10.9	11.2									3	
47-63	0.1	0.9	0.1	0.1		14.2	15.4									8	
63-75	tr.	0.8	0.1	0.1		15.8	16.8									6	
75-87	0.2	0.8	0.1	0.1		17.0	18.2									6	
87-99	1.4	1.2	tr.	0.1		17.0	18.7									9	
99-111	0.6	1.3	tr.	0.1		15.7	17.7									11	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Mi	Int.	Qtz	Kl.	Gibbsite	
			7A2 X-ray				DTA 7A3		
0-7									
7-14			xxx	x			x		
14-18									
18-24			xxx	x			xx		
24-30									
30-47									
47-63			x				xxx		
63-75									
75-87									
87-99			x	x			xxxx		
99-111									

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

a Undecomposed organic matter in sand fractions.

USDA-SCS-BEYTSVILLE, MD 1966

Soil Type: Pembroke silt loam, eroded undulating phase.
Soil No.: S55Tenn-16-21
Location: Coffee County, Tennessee. 3.0 miles east of Hopewell School on gravel road leading towards Shady Grove. North 0.15 miles on side road at Mud Creek to W. D. Riddle Farm. 200 yards north of mail box and 85 yards west of side road which is 60 yards north of fence at northeast corner of corn field. Aerial photo 6G-175.
Vegetation and land use: Lespedeza and weeds.
Slope and land form: 3 percent.

Horizon and Beltsville Lab. No.	
Ap 551930	0 to 7 inches. Brown (10YR 4/3) friable silt loam; moderate fine to medium granular structure; contains many small roots.
A3 551931	7 to 14 inches. Brown (7.5YR 4/4) friable silt loam; moderate medium granular structure; contains a few black concretions 1.0 mm in diameter; pinholes and wormholes are common.
B1 551932	14 to 18 inches. Yellowish red (5YR 4/6) friable silty clay loam; weak to moderate fine and medium angular blocky structure; a few discontinuous clay skins and black coatings, apparently ferromanganese, on peds; contains a few small pinholes and black concretions 1.0 mm in diameter.
B2 551933	18 to 24 inches. Yellowish red (5YR 4/6) friable silty clay loam; moderate medium angular and subangular blocky structure; many thick discontinuous clay skins which are reddish brown (5YR 4/3); a few pale brown (10YR 6/3) light silty clay loam pockets and variegations; common black concretions and segregations 1.0 to 2.0 mm in diameter; contains a few pinholes.
B3 551934	24 to 30 inches. Irregular lower boundary which ranges mostly between depths of 30 to 40 inches but contains an occasional tongue to a depth of 52 inches which completely penetrates the horizon below. Yellowish red (5YR 4/6) friable to firm silty clay loam; fine and medium angular blocky structure; contains many medium prominent pale brown, light yellowish brown (10YR 6/3 - 6/4), and strong brown (7.5YR 5/6) variegations; many black concretions and segregations which range from 1.0 to 5.0 mm in diameter; clay skins are common and apparently contain an appreciable amount of ferromanganese material as the coatings have a blackish cast; a few fine pinholes present.
B1b 551935	30 to 47 inches. Upper boundary is irregular and ranges mostly between depths of 30 to 40 inches but an occasional tongue of the horizon above extends through this horizon into the horizon below. Dark reddish brown to dark red (2.5YR 3/4 - 3/6) friable to firm heavy silty clay loam; many medium prominent pale brown and light yellowish brown (10YR 6/3 - 6/4) variegations; moderate to strong fine and medium angular blocky structure; a few prominent clay skins and pale brown silt coatings on peds; contains a few black concretions 1.0 to 2.0 mm in diameter.
B2b 551936	47 to 63 inches. Abrupt smooth to wavy upper boundary with the upper limit at a depth of 47 inches and the lower limit at a depth of 52 inches. Dark reddish brown to dark red (2.5YR 3/4 - 3/6) firm silty clay; strong fine and medium angular blocky structure; peds coated with thick continuous clay skins; dark reddish brown and black concretions 1.0 to 2.0 mm in diameter, apparently ferromanganese, are common; contains a few very small chert fragments.
B3b 551937	63 to 75 inches. Dark reddish brown to dark red (2.5YR 3/4 - 3/6) very firm clay; moderate medium angular blocky structure; contains a few reddish yellow (7.5YR 6/8) variegations and small pockets of light yellowish brown and pale brown (10YR 6/4 - 6/3) clay and partially weathered rock; common small angular chert fragments; a few dark reddish brown and black concretions 1.0 mm in diameter.
C11b	75 to 87 inches. Dark red (2.5YR 3/6) with common medium prominent reddish yellow (5YR 6/8) variegations, very firm clay; weak coarse angular blocky structure; contains common fine prominent gray and light brownish gray (10YR 6/1 - 6/2) clay seams and/or small pockets; common whitish specks, apparently weathered chert; occasional reddish brown and black concretions less than 1.0 mm in diameter.
C12b	87 to 99 inches. Dark red (2.5YR 3/6) with common coarse and medium prominent yellow (10YR 7/6) and reddish yellow (7.5YR 6/6) variegations, very firm clay, weak coarse angular blocky structure; occasional gray clay seams of small pockets; a few reddish brown and black concretions 1.0 mm in diameter.
C13b	99 to 111 inches. Red (2.5Y 4/6) with common coarse and medium prominent reddish yellow (7.5YR 6/6 - 7/6) variegations; very firm clay; weak coarse angular blocky structure; common whitish specks which are apparently weathered chert; occasional gray clay seams or small pockets, some of which apprently have ferromanganese coatings.

SCS-421
10-64 (Rev. 9-66)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Pembroke silt loam, eroded undulating phase SOIL Nos. 855Tenn-16-22 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551941 - 551948

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Size class and particle diameter (mm) 3A1 Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)		3B2 Cm	Coarse fragments 3B1: 2A2 > 2 Pct.	2–19	19–76
		Pct. of < 2 mm														Pct.	Pct. of < 76mm	
0-5	Ap		68.6	19.9	1.3	1.8	1.4	3.6	3.4		47.7	26.5				tr.		
5-14	B1		63.1	29.8	0.5	1.2	0.8	2.3	2.3		46.2	20.7				-		
14-26	B2		56.6	35.8	0.8	1.1	0.8	2.3	2.6		41.2	19.5						
26-31	B1b		56.1	36.7	0.4	0.9	0.8	2.4	2.7		40.8	19.5				-		
31-40	B21		55.8	36.6	0.5	0.8	0.8	2.6	2.9		40.4	20.0				-		
40-54	B22b		51.7	40.0	0.6	0.8	0.9	2.8	3.2		37.9	18.8				-		
54-66	B23b		45.2	46.1	0.7	1.1	1.1	2.8	3.0		34.3	15.8				-		
66-80	Cb		38.4	49.3	1.8	2.3	1.6	3.4	3.2		29.3	14.4				tr.		

Depth (in.)	6A1a Organic carbon	Nitrogen	C/N		Carbonate as $CaCO_3$	Ext. iron as Fe_2O_3	Bulk density:	4A1a ⅓ bar	4A1h Oven dry	4D1 COLE	Water content:	4B1c ⅓ bar	4B2 15 bar		4C1 WRD	pH:	8C1c (1:1) KCl	8C1a (1:1) H_2O
	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		in/in			
0-5	1.06	0.107	10			1.9												7.4
5-14	0.20	0.047				3.0												7.4
14-26	0.06	0.036				3.6												6.4
26-31	0.02	0.034				3.7												5.0
31-40	0.04	0.031				4.0												4.9
40-54	0.02	0.031				4.6												4.8
54-66	0.04	0.034				6.1												4.9
66-80	0.05	0.034				7.2												4.8

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. acidity	CEC: 5A3a Sum cations		6G1d Ext. Al			Ratios to clay: CEC Sum	Ext. iron	15-bar water	8D3 Ca/Mg		Base saturation: 5C3 Sum cations	5C1 NH_4OAc
	meq/100 g																Pct.	Pct.
0-5	11.2	0.6	tr.	0.3		2.6	14.7										82	
5-14	8.0	0.6	0.1	0.2		3.0	11.9										75	
14-26	5.9	1.3	0.1	0.2		5.4	12.9										58	
26-31	1.6	2.1	tr.	0.2		10.1	14.0										28	
31-40	0.4	2.1	tr.	0.2		10.5	13.2										20	
40-54	0.3	1.6	tr.	0.2		11.1	13.2										16	
54-66	tr.	1.5	tr.	0.2		12.8	14.5										12	
66-80	tr.	1.5	tr.	0.2		13.8	15.5										11	

Depth (in.)	Clay Fraction Analysis 7A1b-d: Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite
			7A2 X-ray				DTA 7A3	
0-5								
5-14								
14-26			xxx				xx	
26-31								
31-40								
40-54			xxx				xx	
54-66								
66-80			xx	x			xxx	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, Mi = mica, Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

USDA-SCS-HYATTSVILLE, MD. 1966

Soil Type: Pembroke silt loam, eroded undulating phase.
Soil No.: 855Tenn-16-22
Location: Coffee County, Tennessee. 3.3 miles south of Manchester on Highway 55. 200 feet east of highway, 150 feet north of large elm tree at old house site, and 200 feet north by east of dirt road leading to old house site. Aerial photo 5G-182.

Horizon and Beltsville Lab. No.	
Ap 551941	0 to 5 inches. Dark brown (7.5YR 3/2) friable silt loam; weak to moderate fine granular structure; contains a few reddish brown (5YR 4/4) silty clay loam spots, apparently brought up from layer below; many small roots present.
B1 551942	5 to 14 inches. Dark reddish brown to yellowish red (5YR 3/4 - 4/6) friable silty clay loam; weak to moderate fine angular and subangular blocky structure; a few discontinuous clay skins on peds; contains a few black concretions 1.0 to 2.0 mm in diameter.
B2 551943	14 to 26 inches. Dark red (2.5YR 3/6) to dark reddish brown (5YR 3/4) friable silty clay loam; moderate medium angular to subangular blocky structure; a few thin distinct clay skins on vertical and horizonal faces; contains a few black concretions 1.0 mm in diameter.
B1b 551944	26 to 31 inches. Dark red to dark reddish brown (2.5YR 3/6 - 3/4) friable silty clay loam; moderate medium angular blocky structure; common fine faint reddish brown (5YR 5/4 - 4/4) variegations; common prominent clay skins; a few black concretions, apparently ferromanganese, 1.0 mm in diameter.
B21b 551945	31 to 40 inches. Dark reddish brown to dark red (2.5YR 3/4 - 3/6) firm silty clay; strong medium angular blocky structure; contains a few faint fine yellowish red (5YR 5/6) variegations; many prominent continuous clay skins which apparently are stained with ferromanganese; contains a few black concretions 0.5 to 1.0 mm in diameter; a few pinholes present.
B22b 551946	40 to 54 inches. Dark red (2.5YR 3/6 or 10R 3/6) firm silty clay; strong medium angular blocky structure; common fine prominent reddish yellow (5YR 6/8) and pale brown (10YR 6/3) variegations; many prominent clay skins on faces of peds; a few black concretions 1.0 to 2.0 mm in diameter; occasional partially weathered chert fragments ranging up to 15 mm in diameter; few to common pinholes.
B23b 551947	54 to 66 inches. Dark red (2.5YR 3/6 or 10R 3/6) firm silty clay; moderate to strong medium angular blocky structure; many prominent clay skins commonly stained with ferromanganese giving the exterior of the peds a dark reddish brown (2.5YR 3/4) color; contains a few fine faint light yellowish brown (10YR 6/4) variegations; a few black concretions and segregations 1.0 mm in diameter; contains a small amount of chert fragments ranging in diameter from whitish specks less than 0.5 mm to 15 mm for the larger angular pieces.
Cb 551948	66 to 80 inches. Dark red (2.5YR 3/6) firm or very firm clay; weak coarse angular blocky structure; contains a few fine distinct pale brown and light yellowish brown (10YR 6/3 - 6/4) variegations and a few small partially weathered brownish yellow (10YR 6/8) chert fragments; common angular chert fragments ranging to 3 inches in diameter; a very few black concretions 1.0 mm in diameter.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Hardin County, Tennessee SOIL TYPE Pickwick silt loam

LAB NOS. 12307-12315 SOIL NOS. S59Tenn-36-1

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12307	0-5	Ap	0.1a	0.4b	0.5c	2.6c	2.3c	77.3	16.8	44.6	36.6	-	sil
12308	5-10	B1	<0.1	0.1b	0.3c	1.1c	1.2c	70.6	26.7	30.2	42.3	-	sil/sicl
12309	10-17	B21	<0.1	0.2d	0.2e	1.2	1.0	66.6	30.8	27.4	40.9	-	sicl
12310	17-27	B22	0.1d	0.3d	0.3d	1.6e	1.5e	66.7	29.5	27.8	41.3	-	sicl
12311	27-39	IIB21b	0.6d	0.7d	0.4	2.5	2.1	66.3	27.4	30.5	39.4	-	sicl/sil
12312	39-54	B22b	0.3d	0.4d	0.5	3.2	2.7	55.0	37.9	25.4	34.3	-	sicl
12313	54-75	B23b	0.1d	0.3d	0.5	4.1	3.5	53.0	38.5	26.9	32.2	-	sicl
12314	75-101	B24b	0.2d	0.2e	0.6	5.0	4.4	46.0	43.6	25.0	28.5	-	sic
12315	101-124	B25b	0.2d	0.3e	0.7	5.5	5.1	45.5	42.7	26.5	27.8	Tr.	sic

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6R1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12307	6.3			0.83	0.083	10	1.6	15.9	1.46	22.4	1.44	1.46	6.3
12308	6.6			0.39	0.058	7	2.2	15.1	1.43	23.7	1.40	1.45	11.0
12309	5.5			0.24	0.048		2.7	18.9	1.46	25.0	1.42	1.50	12.2
12310	5.0			0.14	0.047		2.8	19.8	1.48	25.3	1.46	1.51	11.5
12311	4.9			0.08			2.5	15.3	1.62	21.1	1.60	1.63	10.4
12312	4.8			0.07			3.3	15.7	1.66	20.8	1.63	1.68	13.8
12313	4.9			0.09			3.5	16.5	1.61	22.1	1.57	1.63	14.8
12314	4.8			0.07			4.0						15.6
12315	4.7			0.08			4.5						16.5

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	5C1 Base Sat.% NH_4OAc	5C3 Base Sat.% on Sum Cations	5R1a Sum Ext. Bases me/100 g	5A3a Sum Ext. Cations	8D3 Ca/Mg
		milliequivalents per 100g soil									
12307	7.7	6.0	0.8	3.9	<0.1	0.2	91	64	7.0	10.9	
12308	9.5	6.9	0.9	5.1	<0.1	0.2	84	61	8.0	13.1	
12309	11.8	4.0	3.5	6.8	0.1	0.3	67	54	7.9	14.7	1.1
12310	11.3	1.0	3.3	9.5	<0.1	0.3	41	33	4.6	14.1	
12311	9.5	0.3	2.2	9.3	0.1	0.2	29	23	2.8	12.1	
12312	10.4	0.2	2.3	10.7	0.1	0.2	27	21	2.8	13.5	
12313	11.8	0.2	2.3	11.2	0.1	0.2	24	20	2.8	14.0	
12314	10.9	0.9	2.4	10.2	0.1	0.2	33	26	3.6	13.8	
12315	10.6	1.9	2.3	10.0	0.1	0.2	42	31	4.5	14.5	0.8

a. Many Fe-Mn? bearing aggregates. Common organic matter fragments.
b. Few Fe-Mn? bearing aggregates. Trace carbonates. $CaCO_3$?
c. Trace carbonates. $CaCO_3$?
d. Many Fe-Mn? bearing aggregates.
e. Few Fe-Mn? bearing aggregates.

Soil type: Pickwick silt loam

Soil Nos. : 859Tenn-36-1

Location: Hardin County, Tennessee 1½ miles north of Savannah on Craven Landing road ½ mile northeast on Kendrich Love farm. Photo: AIK-6F-88, 1955

Vegetation and Use: Lespedeza and Johnson grass.

Slope and Land Form: Gently sloping (3 percent), old high terrace. Top of ridge. (Elevation 442 feet).

Drainage and Permeability: Well-drained, with medium runoff and moderate permeability.

Parent Material: Thin loess mantle overlying old general alluvium

Samples Collected by: Edwood Pedersen, George Phibbs, W. H. Proffitt, Bobby Hinton, C. B. Breinig. October 19, 1959.

Profile described by: W. H. Proffitt and T. R. Love. October 19, 1959.

Horizon and Lincoln Lab. No.	Depth	
Ap 12307	0 to 5 inches	Brown (10YR 4/3) silt loam; weak to moderate fine crumb structure; very friable; many fine roots; abrupt smooth boundary.
B1 12308	5 to 10 inches	Dark brown (7.5YR 4/4) silt loam; weak fine subangular blocky to moderate fine granular structure; friable; many fine roots; abrupt smooth boundary.
B21 12309	10 to 17 inches	Dark brown (7.5YR 4/4) to reddish brown (5YR 4/4) silty clay loam; moderate fine and very fine subangular blocky structure; friable; common small roots; clear smooth boundary.
B22 12310	17 to 27 inches	Reddish brown (5YR 4/4) silty clay loam with few fine faint mottles of dark brown (7.5YR 4/4) and brown (10YR 4/3); moderate fine subangular blocky structure; friable; few small black concretions and segregations about 2.0 mm. to 5.0 mm. in diameter; few patchy clay films and silt coatings on peds; few small roots; gradual smooth boundary.
IIB21b 12311	27 to 39 inches	Dark brown (7.5YR 4/4) silty clay loam with common fine and medium faint mottles of reddish brown (5YR 4/4) and brown (10YR 4/3) and dark brown (7.5YR 4/4 moderate fine subangular blocky structure; friable, few patchy clay films; several brown (10YR 5/3-4/3) grayish brown(10YR 5/2) and pale brown (10YR 6/3) silt loam and silty clay loam seams 1 to 5 mm. wide and 7 to 20 cm. long that extend to a depth of 54 inches; few block concretions and segregations 1 to 5 mm. in diameter; clear wavy boundary.
B22b 12312	39 to 54 inches	Dark reddish brown (2.5YR 3/4) silty clay or silty clay loam with common fine faint mottles or variegations of dark brown (7.5YR 4/4), brown (10YR 4/3) and reddish brown (5YR 4/4); moderate fine subangular blocky structure; friable to firm; patchy clay films; few black concretions and segregations 1 to 5 mm. in diameter; occasional weathered chert fragment 1 to 2 mm. in diameter; gradual smooth boundary.
B23b 12313	54 to 75 inches	Dark red (2.5YR 3/6) to dark reddish brown (2.5YR 3/4) clay or silty clay; moderate fine subangular blocky structure; friable to firm; few fine faint variegations of dark brown (7.5YR 4/4), brown (10YR 4/3), and reddish brown (5YR 4/4); almost continuous clay films; few black concretions and segregations 0.5 to 2.0 mm. in diameter; occasional thin seam of brown silt loam or silty clay loam; few chert fragments 1 to 3 mm. in diameter; gradual smooth boundary.
B24b 12314	75 to 101 inches	Dark red (2.5YR 3/6) clay with common fine prominent mottles or variegations of pale brown (10YR 6/3), light brownish gray (10YR 6/2) and brown (10YR 5/3); moderate fine subangular and angular blocky structure; firm; patchy clay films; few to common black concretions 0.5 to 3.0 mm. in diameter; occasional weathered chert fragment 2 to 3 mm. in diameter.
B25b 12315	101 to 124 inches	Dark red (2.5YR 3/6) clay with common fine variegations of red (2.5YR 4/6), yellowish red (5YR 4/6); yellowish brown (10YR 5/6) pale brown (10YR 6/3) and light brownish gray (10YR 6/2); moderate fine subangular and angular blocky structure; patchy clay films; occasional small seam of pale brown (10YR 6/3) or light brownish gray (10YR 6/2) silty clay loam; few to common black concretions 0.5 to 3.0 mm. in diameter; occasional chert fragments 2 to 3 mm. in diameter.

Remarks: Colors given are for moist soil.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Hardin County, Tennessee SOIL TYPE Pickwick silt loam

LAB NOS. 12351 - 12357 SOIL NOS. S59Tenn-36-6

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (In mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
12351	0-6	Ap	0.4a	0.9a	1.3a	4.2a	2.0a	73.2	18.0	39.7	37.7	Tr.	sil
12352	6-14	B1	<0.1	0.3b	0.6	1.9	1.1	65.9	30.2	29.2	38.8	-	sicl
12353	14-20	B21	0.1b	0.6b	0.9c	2.5	1.2	65.7	29.0	28.3	40.0	-	sicl
12354	20-32	B22	0.7b	1.0b	1.4c	4.3	2.0	63.8	26.8	29.8	38.3	Tr.	sil/sicl
12355	32-41	IIB21b	0.6b	0.9c	1.6	4.5	2.1	55.8	34.5	24.9	35.4	Tr.	sicl
12356	41-52	B22b	0.2b	0.9c	1.6	4.9	2.0	54.6	35.8	24.7	34.7	Tr.	sicl
12357	52-65	B23b	0.6	1.0	1.9	5.8	2.5	52.1	36.1	24.5	33.3	Tr.	sicl
	65-92	B24b	Not Sampled										

LABORATORY NUMBER	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4E2 15-Bar Water %
12351	7.5			0.85	0.089	10	1.7	17.8	1.44	21.2	1.40	1.45	6.4
12352	6.9			0.22	0.050		2.6	22.4	1.40	24.7	1.38	1.46	11.2
12353	4.9			0.16	0.048		2.7	21.4	1.42	24.6	1.41	1.49	10.5
12354	4.9			0.08	0.041		2.5	18.6	1.62	21.0	1.61	1.64	9.4
12355	4.9			0.08			2.9	17.6	1.67	20.2	1.64	1.69	12.1
12356	4.9			0.08			3.1	18.5	1.63	21.2	1.60	1.66	12.8
12357	4.9			0.09			3.3	17.9	1.60	21.5	1.57	1.64	13.0

LABORATORY NUMBER	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5C1 Base Sat.% NH_4OAc	5C3 Base Sat.% on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g	8D3 Ca/Mg	6E1a $CaCO_3$ equivalent %
		milliequivalents per 100g soil										
12351	8.4		0.4	1.7	<0.1	0.7						1
12352	10.8	7.7	1.4	4.2	<0.1	0.3	87	69	9.4	13.6	5.5	<1
12353	9.8	1.9	2.5	9.6	<0.1	0.3	48	33	4.7	14.3	0.8	
12354	8.7	0.3	1.8	8.8	<0.1	0.2	26	21	2.3	11.1		
12355	10.4	0.1	2.4	10.0	<0.1	0.2	26	21	2.7	12.7		
12356	9.5	0.3	2.8	9.8	<0.1	0.2	35	25	3.3	13.1		
12357	10.1	0.1	2.4	10.0	<0.1	0.2	27	21	2.7	12.7		

a. Trace carbonates. $CaCO_3$?
b. Many Fe-Mn? bearing aggregates.
c. Few Fe-Mn? bearing aggregates.

Soil type: Pickwick silt loam

Soil No.: : 859Tenn-36-6

Location: Hardin County, Tennessee, 2 miles south of Savannah, on Highway 69, 1/4 mile east on gravel road, on Warren Austin farm. Photo AIK-6F-90(1955)

Vegetation and Use: Johnson grass, crab grass, and weeds. The field appeared to have been plowed or disked four to six weeks prior to sampling.

Slope and Land Form: Gently sloping broad ridge on old high terrace. Slight southeast aspect. Elevation 445 feet.

Drainage and Permeability: Well drained, with medium runoff and moderate permeability.

Parent Material: Thin loess mantle overlying old general alluvium.

Samples collected by: C. B. Breinig, Edwood Pedersen, George Phibbs, W. H. Proffitt, and Bobby Hinton - October 21, 1959.

Profile described by: W. H. Proffitt and T. R. Love. October 21, 1959.

Horizon and Lincoln Lab. No.	Depth	
Ap 12351	0 to 6 inches	Dark brown (7.5YR 4/4) silt loam; weak fine to very fine crumb structure; very friable; many small roots; many small pores and wormholes; abrupt wavy boundary.
B1 12352	6 to 14 inches	Reddish brown (5YR 4/4) coarse silty clay loam; weak fine subangular blocky structure; very friable; common small roots; common pores; common worm channels filled with silty material from the Ap horizon; occasional concretion 1 mm. in diameter; gradual smooth boundary.
B21 12353	14 to 20 inches	Yellowish red (5YR 4/6) silty clay loam; weak to moderate fine subangular blocky structure; very friable; few patchy grayish brown silt coatings on peds; common fine roots; common small pores; few hard black rounded concretions (1 mm. in diameter); clear wavy boundary.
B22 12354	20 to 32 inches	Reddish brown (5YR 4/4) silty clay loam; seams and pockets of yellowish red (5YR 5/6) silty material; moderate fine subangular blocky structure; friable; patchy clay films; few small roots; few small pores; common to many small black concretions and segregations (1-4 mm. in diameter); occasional quartzite pebble; clear wavy boundary.
IIB21b 12355	32 to 41 inches	Dark red (2.5YR 3/6) light silty clay; occasional brown to yellowish brown (10YR 5/3-5/4) silty tongue about 1/2 inch in width; ped surfaces are dusky red (2.5YR 3/2) and dark reddish brown (2.5YR 3/4); strong fine subangular blocky structure; friable to firm; continuous thin clay films; few fine pores; few semirounded chert fragments; common black stains or coatings on some peds; common small hard concretions 1 mm. in diameter; gradual wavy boundary.
B22b 12356	41 to 52 inches	Dark red (2.5YR 3/6) silty clay; seams of brown (10YR 5/3) and yellowish brown (10YR 5/4) silt; strong fine subangular blocky structure; friable; continuous clay films; a few fine pores; occasional rounded chert fragment 5-10 mm. in diameter; few patchy black stains or coatings or segregations; diffuse smooth boundary.
B23b 12357	52 to 65 inches	Dark red (2.5YR 3/6) clay or silty clay; few fine faint variegations of dark brown (7.5YR 4/4) lighter in texture; strong fine subangular blocky structure; friable; continuous thin clay films; occasional rounded chert fragments 1/2 inch to 1 inch in diameter; few small black hard concretions 1 to 5 mm. in diameter; diffuse smooth boundary.
B24b (Not sampled)	65 to 92 inches	Dark red (2.5YR 3/6) clay with grayish brown (10YR 5/2) and light grayish brown (10YR 6/2) mottles or variegations (probably due to weathered chert fragments; predominates in lower horizon); strong fine subangular blocky structure; friable; continuous thin clay films; a few rounded chert or quartz fragments 2 mm. to 1 inch in diameter increasing with depth.

Remarks: Colors given are for moist soil.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Putnam County, Tennessee SOIL TYPE Sequatchie loam

LAB NOS. 12686-12691 SOIL NOS. S59Tenn-71-30

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12686	0-4	A11p	0.1	2.8	10.9	26.6	13.1	32.9	13.6	40.8	18.4	Tr.	fsl
12687	4-12	A12p	0.1	2.4	9.1	22.8	11.5	33.6	20.5	35.7	19.9	-	l
12688	12-26	B2	0.1	1.8	6.4	19.3	13.1	35.5	23.8	38.3	20.6	Tr.	l
12689	26-35	B3	5.9a	13.5a	17.1	19.1	6.4	21.3	16.7	21.8	13.7	5	sl
12690	35-43	Du1	8.9a	44.6a	24.8	8.8	1.4	4.5	7.0	5.5	2.8	8	lcos/cos
12691	43-55	Du2	17.2a	33.1a	23.3	10.3	2.0	6.8	7.3	7.4	4.5	37	lcos

	pH 8C1a H_2O 1:1		6C1a Free Iron as Fe_2O_3 %	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	WATER CONTENT 4H1b 1/3-Bar %	4B2 15-Bar %
12686	5.2		1.3	0.72	0.074	10	19.4	1.66	18.9	1.70	1.72	14.5	5.9
12687	5.1		1.8	0.53	0.075	7	17.8	1.60	17.4	1.62	1.66	15.4	9.0
12688	5.0		2.0	0.33	0.043	8	16.3	1.73	17.1	1.72	1.76	16.3	9.4
12689	5.1		1.9	0.21			13.9	1.76	14.3	1.76	1.80	12.5	7.4
12690	5.2		1.5	0.09									2.6
12691	5.4		2.2	0.09									3.6

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat.% on Sum Cations	5C1 Base Sat.% NH_4OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations
		milliequivalents per 100g soil							me/100g	
12686	6.9	2.3	0.2	<0.1	0.1	7.8	25	38	2.6	10.4
12687	8.7	3.6	0.7	<0.1	0.1	8.3	35	50	4.4	12.7
12688	8.3	3.2	0.5	<0.1	0.1	7.8	33	46	3.8	11.6
12689	6.9	2.7	0.6	<0.1	0.1	5.8	37	49	3.4	9.2
12690	2.6	1.2	0.3	<0.1	0.1	2.7	37	62	1.6	4.3
12691	3.3	1.6	0.2	<0.1	0.1	2.2	46	58	1.9	4.1

a. Few Fe-Mn? bearing aggregates.

Soil type: Sequatchie loam

Soil Nos. : S59Tenn-71-30

Location: Putnam County, Tennessee, .35 mile east of Verble Church in Stamps Hollow (J. Little farm). Photo AEW-6N-54.

Vegetation and Use: Corn - continuous cultivation.

Slope and Land Form: Slightly eroded 3 percent slope; low young stream terrace; elevation 1000 feet.

Drainage and Permeability: Well drained; surface runoff and internal drainage are medium; moderate permeability.

Parent Material: Mixed old alluvium washed from soils underlain by sandstones, shales and limestones.

Samples Collected by: J. A. Elder, G. T. Jackson, S. R. Bacon, B. C. Cox - December 10, 1959

Profile Described by: G. T. Jackson, December 10, 1959.

Horizon and Lincoln Lab. No.	Depth	
A11p 12686	0 to 4 inches	Brown (10YR4/3) loam with weak medium granular structure; friable; common roots; clear wavy boundary.
A12p 12687	4 to 12 inches	Brown (10YR4/3) to dark yellowish brown (10YR4/4) loam with weak coarse granular structure; friable but slightly firm in place; few roots; gradual smooth boundary.
B2 12688	12 to 26 inches	Brown (7.5YR4/4) clay loam with weak medium and coarse subangular blocky structure; friable but slightly firm in place; very thin discontinuous clay films; few roots; gradual smooth boundary.
B3 12689	26 to 35 inches	Brown (7.5YR4/4) sandy clay loam with weak medium and coarse subangular and angular blocky structure; common fine pores; friable; gradual wavy boundary.
Du1 12690	35 to 43 inches	Strong brown (7.5YR5/6) sand; structureless; very friable.
Du2 12691	43 to 55 inches	Strong brown (7.5YR5/6) gravelly sand; structureless; very friable; water rounded gravel and cobbles up to 6 inches in diameter are common; sizes greater than ½ inch mostly removed from sample; gravel and cobbles constituted 50 percent of original sample.

Remarks: Colors and consistency are for moist soil. This site is often flooded; layers below the Ap indicate silt movement along old root channels and pores.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Putnam County, Tennessee SOIL TYPE Sequatchie loam

LAB NOS. 12698-12702 SOIL NOS. S59Tenn-71-33

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
12698	0-11	Ap	1.6	4.8	4.8	23.8	15.6	38.7	10.7	45.0	23.7	Tr.	1
12699	11-18	B1	1.2	3.8	3.5	17.2	11.5	44.5	18.3	37.7	28.9	Tr.	1
12700	18-29	B2	1.4	3.9	4.0	17.0	10.9	42.8	20.0	34.6	29.2	Tr.	1
12701	29-38	B3	6.0a	6.5a	5.3	19.4	12.3	33.7	16.8	36.3	20.9	8	1
12702	38-53	Du	9.5a	8.2a	4.6	16.3	13.0	34.8	13.6	36.2	21.5	39	1/fsl

LABORATORY NUMBER	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12698	7.1			0.64	0.057	11	0.9	17.4	1.61	19.8	1.61	1.62	4.4
12699	6.9			0.28	0.041	7	1.3						6.4
12700	5.6			0.18	0.038		1.6	20.5	1.58	20.6	1.59	1.63	7.9
12701	4.8			0.11			1.5	19.1	1.66	18.0	1.66	1.68	6.2
12702	4.9			0.09			1.2						4.9

LABORATORY NUMBER	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C3 Base Sat. % on Sum Cations	5C1 Base Sat. % NH_4OAc	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g	6E1a $CaCO_3$ equivalent %
		milliequivalents per 100g soil									
12698	5.3	5.8	0.2	<0.1	0.1	2.7	69	115	6.1	8.8	< 1
12699	5.7	4.8	0.3	<0.1	0.1	2.9	64	91	5.2	8.1	< 1
12700	6.7	3.9	0.3	<0.1	0.1	4.6	48	64	4.3	8.9	
12701	6.9	1.3	0.1	<0.1	0.1	6.3	19	22	1.5	7.8	
12702	3.7	1.1	0.1	<0.1	0.1	4.8	21	35	1.3	6.1	

a. Few Fe-Mn? bearing aggregates.

Soil type: Sequatchi loam

Soil No. : S59Tenn-71-33

Location: Putnam County, Tennessee, 3/4 mile southwest of Ditty near bridge over Cane Creek; 100 yards south of paved road. Photo AEW-5N-166.

Vegetation and Use: Orchard grass, red clover, fox tail.

Slope and Land Form: Uneroded 2 percent slope; low young stream terrace.

Drainage and Permeability: Well drained; surface runoff and internal drainage are medium; moderate permeability.

Parent Material: Mixed old alluvium washed from soils underlain by sandstones, shales, and limestones.

Samples Collected by: J. A. Elder, G. T. Jackson, S. R. Bacon, B. C. Cox.

Profile Described by: J. A. Elder, G. T. Jackson. December 9, 1959.

Horizon and Lincoln Lab. No.	Depth	
Ap 12698	0 to 11 inches	Dark brown (10YR3/3) loam with weak medium granular structure; friable; many fine roots; gradual wavy boundary.
B1 12699	11 to 18 inches	Strong brown (7.5YR5/6) silt loam with brown (7.5YR4/4) loam streaks along root channels; weak fine subangular blocky structure; friable; common fine roots; gradual wavy boundary.
B2 12700	18 to 29 inches	Brown (7.5YR4/4) clay loam with weak medium subangular blocky structure; few discontinuous clay films; friable; few fine roots; gradual wavy boundary.
B3 12701	29 to 38 inches	Brown (7.5YR4/4) loam or clay loam with weak medium subangular blocky structure; few thin discontinuous clay films; friable; few fine roots and few small water-rounded gravels; gradual wavy boundary.
Du 12702	38 to 53 inches	Variegated and stratified yellowish brown and dark brown sand and gravel with some silt and clay. Discarded gravel over one inch or so occupied about 50 percent of the volume.

Remarks: Colors and consistency are for moist soil.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Sequoia silt loam SOIL Nos. 853Tenn-5-9 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53728-53731

Depth (in.)	Horizon	1B1b Total Sand (2–0.05)	Total Silt (0.05–0.002)	Total Clay (< 0.002)	Sand: Very coarse (2–1)	Sand: Coarse (1–0.5)	Sand: Medium (0.5–0.25)	Sand: Fine (0.25–0.1)	Sand: Very fine (0.1–0.05)	Silt: (0.05–0.002)	Silt: Int. III (0.02–0.002)	Silt: Int. II (0.2–0.02)	Silt: (2–0.1)			Coarse fragments 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct. of < 76mm	
0-6	Ap	8.3	71.1	20.6	2.4	2.0	0.8	1.1	2.0	29.3	41.8	32.0	6.3			tr.		
6-12	B1	6.0	47.5	46.5	0.9	1.6	0.7	1.2	1.6	17.1	30.4	19.4	4.4			-		
12-31	B2	9.5	41.8	48.7	1.0	2.8	1.2	1.8	2.7	16.5	25.3	20.4	6.8			-		
31-42+	C	32.2	28.2	39.6	4.6	11.4	4.4	7.4	4.4	9.2	19.0	17.7	27.8			21		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-6	1.58																	4.8
6-12	0.58																	4.6
12-31	0.21																	4.8
31-42+	0.08																	4.8

Depth (in.)	Extractable bases 5B1a: 6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g																
0-6	1.2	0.3	tr.	tr.	1.5	9.3	10.8									14	
6-12	0.8	0.4	tr.	0.1	1.3	14.0	15.3									8	
12-31	0.5	0.5	tr.	0.1	1.1	15.6	16.7									6	
31-42	0.2	0.4	tr.	0.1	0.7	15.8	16.5									4	

Depth (in.)

Soil Type: Sequoia silt loam
Soil No.: S53Tenn-5-9
Location: Blount County, Tennessee. 1-1/2 miles south of Alnwick.
Vegetation and land use: Idle. In process of reclamation. Formerly small shortleaf pine.

Horizon and Beltsville Lab. No.	
Ap 53728	0 to 6 inches. Yellowish brown (10YR 5/4) nonplastic or slightly plastic silt loam.
B1 53729	6 to 12 inches. Strong brown (7.5YR 5/8) plastic silty clay or silty clay loam; strongly developed medium and coarse blocky structural aggregates. Rapid gradation to;
B2 53730	12 to 31 inches. Yellowish red (5YR 5/8) very plastic silty clay; strongly developed coarse blocky structure.
C 53731	31 to 42 inches plus. Yellowish red (5YR 5/8) very plastic silty clay soil material mixed with soft noncalcareous shale fragments. Shale fragments comprise an estimated 40 percent of the total mass. Leached, soft shale bedrock is at a depth of 42 inches.

SCS-421
10-64

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL Sequoia silt loam SOIL Nos. 853Tenn-5-10 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 53732-53734

Depth (in.)	Horizon	1B1b Total: Sand (2–0.05)	Silt (0.05–0.002)	Clay (< 0.002)	Sand: Very coarse (2–1)	Coarse (1–0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	Silt: 0.05–0.02	Int. III (0.02–0.002)	Int. II (0.2–0.02)	(2–0.1)			Coarse fragments: 2A2 > 2 Pct.	2 – 19	19 – 76
		Pct. of < 2 mm															Pct. of < 76mm	
0-7	Ap	14.6	60.0	25.4	4.5	4.7	1.6	1.8	2.0	17.5	42.5	20.5	12.6			tr.		
7-29	B2	6.3	42.8	50.9	0.3	0.8	0.8	2.0	2.4	9.7	33.1	13.4	3.9			-		
29-45	C	9.7	46.1	44.2	0.3	0.6	0.6	2.8	5.4	12.7	33.4	20.4	1.3			tr.		

Depth (in.)	6A1a Organic carbon Pct.	Nitrogen Pct.	C/N		Carbonate as $CaCO_3$ Pct.		Bulk density g/cc	g/cc	g/cc		Water content Pct.	Pct.	Pct.			pH		8C1a (1:1) H_2O
0-7	1.11																	5.5
7-29	0.24																	4.8
29-45	0.12																	4.7

Depth (in.)	Extractable bases 6N2d Ca	6Q2b Mg	6P2a Na	5B1a 6Q2a K	Sum	6H1a Ext. Acidity	CEC 5A3a Sum Cations									Base saturation 5C3 Sum Cations Pct.	Pct.
	meq/100 g.																
0-7	2.5	0.5	tr.	0.1	3.1	7.9	11.0									28	
7-29	0.7	0.6	tr.	tr.	1.3	14.9	16.2									8	
29-45	0.5	0.5	tr.	tr.	1.0	16.9	17.9									6	

Depth (in.)					

Soil Type: Sequoia silt loam
Soil No.: S53Tenn-5-10
Location: Blount County, Tennessee. 1 mile north of Clover Hill.
Vegetation and land use: Unimproved pasture. Chiefly weeds and lespedeza. Sparse sprinkling of small Virginia pines.

Horizon and Beltsville Lab. No.	
Ap 53732	0 to 7 inches. Yellowish brown (10YR 5/4) friable silt loam. Rapid gradation to;
B2 53733	7 to 29 inches. Yellowish red (5YR 5/8) or strong brown (7.5YR 5/8) very firm silty clay; strongly developed coarse blocky structure. Gradual gradation to;
C 53734	29 to 45 inches. Yellowish red (5YR 5/8) or strong brown (7.5YR 5/8) very firm silty clay with many distinct light yellowish brown (2.5Y 6/4) and light brownish gray (2.5Y 6/2) mottles; strongly developed coarse blocky structure. Few very small soft shale fragments. Amount of shale fragments increase with depth. Locally, the leached shale bedrock is at 49 inches.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Silerton silt loam **LOCATION** Henderson County, Tennessee

SOIL NOS. S55Tenn-39-2 **LAB. NOS.** 7715-7724

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)								3A1	2A2	TEXTURAL CLASS
		VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002	> 2 <19mm	
0-3½	Ap	0.5a	0.6b	0.4b	1.1b	2.7b	76.3	18.4	40.3	39.4	Tr.	sil
3½-8	B21	0.1a	0.4a	0.3b	0.5b	1.3b	66.0	31.4	27.4	40.2	Tr.	sicl
8-12½	B22	0.6a	0.6a	0.3b	0.6b	1.6b	66.3	30.0	28.9	39.4	Tr.	sicl
12½-16	B3	0.5a	0.8a	0.4b	1.0b	2.7b	66.8	27.8	32.3	37.8	Tr.	sicl
16-20	B3m	1.4a	1.0a	0.4b	1.0b	3.2b	63.6	29.4	31.8	35.6	Tr.	sicl
20-29	D1cn	5.8a	1.6a	0.4b	0.7b	2.3b	43.0	46.2	20.5	25.2	9	sic
29-34	Du2	4.8a	2.0a	0.5c	0.6c	1.1c	29.8	61.2	11.2	20.0	10	c
34-48	Du3	2.1a	1.7a	0.4c	0.6c	1.2c	30.1	63.9	11.3	20.3	3	c
48-60	Du4	1.6a	1.2a	0.4c	0.6c	1.0c	31.6	63.6	9.4	23.6	2	c
60-70	Du5	0.4a	0.3a	0.2d	3.2d	6.7d	30.9	58.3	16.8	23.6	Tr.	c

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron Fe_2O_3%		$CaCO_3$ equivalent %	—	MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
5.6			0.72	0.063	11	1.8						
5.1			0.37	0.052	7	3.1						
4.8			0.24	0.039		3.1						
4.9			0.10	0.027		3.2						
5.0			0.08	0.024		3.5						
4.7			0.09	0.018		5.8						
4.4			0.09			7.6						
4.4			0.13			6.3						
4.2			0.14			6.4						
4.1			0.14			2.3						

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg
←	milliequivalents per 100g. soil							me/100g	→	
8.1	3.5	1.7	6.1	0.1	0.4	70	48	5.7	11.8	2.0
13.4	4.6	3.3	8.6	0.3	0.3	63	50	8.5	17.1	1.4
13.0	2.5	2.4	10.7	0.2	0.3	42	34	5.4	16.1	1.0
12.5	1.5	2.6	10.7	0.2	0.2	36	30	4.5	15.2	0.6
12.7	1.3	3.5	11.9	0.2	0.2	41	30	5.2	17.1	0.4
17.5	1.5	5.7	14.0	0.3	0.3	44	36	7.8	21.8	0.3
20.5	2.1	8.1	14.5	0.3	0.2	52	42	10.7	25.2	0.2
20.6	2.4	9.1	14.1	0.4	0.2	59	46	12.1	26.2	0.3
21.1	3.2	10.7	12.9	0.4	0.3	69	53	14.6	27.5	0.3
23.8	4.4	13.8	10.8	0.5	0.5	81	64	19.2	30.0	0.3

a. Many smooth and irregular light brown to black concr. (Fe-Mn?)
b. Few smooth and irregular light brown to black concr. (Fe-Mn?)
c. Common smooth and irregular light brown to black concr. (Fe-Mn?)
d. Few smooth and irregular light brown to black concr. (Fe-Mn?) Also, few mica flakes

Described by Joseph Winsor, Ralph McCracken, E. C. Sease, and Robbie Flowers

Soil type: Silerton silt loam
Soil No.: 855Tenn-39-2
Date: January 28, 1955
Area: Henderson County, Tennessee
Location: 1.7 miles north of Chesterfield on Browns Creek road, 40 feet west of road, in cotton patch. (See photo No. 2F-112.)
Sampling party: Joseph Winsor, Ralph McCracken, E. C. Sease, and Robbie Flowers.

Lincoln Lab. No.	Horizon	Depth	
7715	A_p	0-3½ inches	Brown (10YR 5/3) friable silt loam with weak medium subangular blocky structure which breaks down to weak fine granular structure; abrupt boundary.
7716	B_{21}	3½-8 inches	Brown to dark brown (7.5YR 4/4) fairly firm silty clay loam; moderate medium subangular blocky structure.
7717	B_{22}	8-12½ inches	Brown to dark brown (7.5YR 4/4) on ped surfaces; inside the ped is yellowish brown (10YR 5/4); moderate medium subangular blocky structure; firm silty clay loam.
7718	B_3	12½-16 inches	Yellowish brown (10YR 5/4) firm silty clay loam with few fine faint mottles of light brownish gray (10YR 6/2); moderate fine to medium angular blocky structure; fairly diffuse boundary.
7719	B_{3n}	16-20 inches	Mottled reddish brown (5YR 4/4) and grayish brown (10YR 5/2); mottles are common, medium, distinct. Moderate to strong angular blocky structure; sub peds have a white silt coating; firm compact silty clay loam.
7720	D_{1cn}	20-29 inches	Light brownish gray (2.5Y 6/2) firm compact clay with common fine distinct mottles of dark red (10R 3/6); moderate fine and medium angular blocky; common soft irregular shaped limonitic concretions; fairly abundant. indurated iron plates up to an inch thick and several inches in width; dusky red color (10R 3/3).
7721	D_{u2}	29-34 inches	Mottled reddish brown (2.5YR 4/4) and gray (2.5Y 6/0); mottles are common, medium, distinct; firm clay, sticky and slightly plastic when wet, hard when dry; moderate medium and coarse angular blocky structure. Common soft irregular shaped limonitic concretionary material, strong brown (7.5YR 5/8); very diffuse boundary.
7722	D_{u3}	34-48 inches	Red (10R 4/6) firm clay, sticky and very plastic when wet, very hard when dry; few fine distinct mottles of gray (2.5Y 6/0); a small amount of soft irregular shaped strong brown (7.5YR 5/8) limonitic concretionary material; moderate fine and medium angular blocky structure.
7723	D_{u4}	48-60 inches	Light brownish gray (2.5Y 6/2) firm clay, sticky and plastic when wet, hard when dry; common medium distinct red (10R 4/6) mottles; weak medium angular blocky structure; soft abundant large pieces of limonitic concretionary material that is strong brown (7.5YR 5/8). Diffuse and irregular boundary.
7724	D_{u5}	60-70 inches	Gray (2.5Y 6/0) clay, sticky and plastic when wet, very hard when dry. Reticulate mottling of weak red (10R 4/4). The red mottles are not so common as in the D_{u2}. A small amount of soft irregular shaped pieces of strong brown (7.5YR 5/8) limonitic material. Near the bottom of the horizon there is light olive brown (2.5Y 5/4) glauconitic sandy clay with fairly numerous small mica flakes. Weak medium and coarse angular blocky structure.
	D_{u6}	70 plus inches	Consolidated iron cemented sand. Not sampled.

Remarks: Colors given are for moist soil unless otherwise stated. This is the eroded sloping phase of Silerton.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Silerton silt loam **LOCATION** Henderson County, Tennessee

SOIL NOS. S55Tenn-39-5 **LAB. NOS.** 7740-7750

DEPTH INCHES	HORIZON	1B1a PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent) 3A1 VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-4	Ap	0.4	0.7a	0.8a	7.6a	15.5a	67.6	7.4	57.6	31.0	Tr.	sil
4-7	A3	0.1	0.4a	0.5a	4.8a	11.2a	70.0	13.0	46.3	38.5	Tr.	sil
7-10	B21	0.1	0.2a	0.3a	3.6a	8.9a	63.9	23.0	39.0	36.4	-	sil
10-16	B22	<0.1	0.2a	0.3a	3.5a	9.6a	56.8	29.6	35.9	33.0	-	sicl
16-22	C1	<0.1	0.2b	0.4a	5.7a	13.5a	53.6	26.6	40.7	30.6	-	sil
22-27	D1m	0.2b	0.4b	0.5a	7.5a	18.0a	51.7	21.7	46.7	28.5	-	sil
27-32	D2m	0.2b	0.4b	0.6a	9.0a	24.6a	50.6	14.6	51.0	30.8	Tr.	sil
32-38	D3m1	0.5b	0.5b	0.7a	9.6a	27.8a	38.0	22.9	51.8	21.1	2	l
38-45	D3m2	0.4b	0.5b	0.5a	8.4a	35.0a	23.8	31.4	49.7	15.7	Tr.	scl
45-52	D4m	0.5b	0.6b	0.5a	10.3a	40.8a	16.9	30.4	54.5	12.0	Tr.	scl
52+	D5m	0.7b	0.8b	0.6a	4.1a	35.1a	31.5	27.2	51.2	18.6	Tr.	cl

8C1a pH 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron Fe_2O_3%		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	15 ATMOS. %
6.2			1.00	0.062	16	0.6						
5.7			0.59	0.047	12	0.9						
5.0			0.49	0.044	11	1.9						
4.8			0.40	0.046	9	2.7						
4.7			0.21	0.029		2.6						
4.9			0.11	0.020		2.2						
5.0			0.07			1.8						
4.9			0.06			2.0						
4.8			0.05			2.3						
4.5			0.07			3.0						
4.3			0.06			3.6						

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Bases	5A3a Sum Cations	8D3 Ca/Mg
←	milliequivalents per 100g. soil				→			← ma/100g →		
4.4	2.9	<0.1	1.6	<0.1	0.3	73	67	3.2	4.8	
4.9	2.6	0.2	2.8	<0.1	0.2	61	52	3.0	5.8	
8.3	2.7	1.1	5.7	<0.1	0.3	49	42	4.1	9.8	2.4
10.8	1.9	2.5	9.8	0.1	0.4	45	33	4.9	14.7	0.8
10.4	0.8	2.6	9.8	0.1	0.3	36	28	3.8	13.6	
8.2	0.1	2.4	6.9	0.1	0.2	34	29	2.8	9.7	
7.7	0.1	2.4	6.5	0.1	0.2	36	30	2.8	9.3	
8.2	0.1	2.9	6.9	0.1	0.2	40	32	3.3	10.2	
8.6	0.1	2.9	7.8	0.1	0.1	37	29	3.2	11.0	
8.6	0.1	1.6	6.9	0.2	0.1	23	22	2.0	8.9	
6.6	<0.1	0.2	6.1	0.2	0.1	8	8	0.5	6.6	

a. Few smooth light brown concr. (Fe-Mn?)
b. Many smooth and irregular light brown concr. (Fe-Mn?)

Soil type: Silerton silt loam Described by E. C. Sease and Robbie Flowers
Soil Nos.: S55Tenn-39-5
Date: April 6, 1955
Area: Henderson County, Tennessee
Location: About 4 miles east of Lexington, Tennessee, near intersection of Highway 20 and Rock Hill Road, 150 yards south of Highway 20 and 20 feet east of Rock Hill Road. (See Photo No. 2F-72.)
Sampling party: E. C. Sease and Robbie Flowers.

Lincoln Lab. No.	Horizon	Depth	
7740	A_p	0-4 inches	Light yellowish brown (10YR 6/4) friable silt loam; weak fine granular structure; gradual boundary.
7741	A_3	4-7 inches	Brown (10YR 5/3) friable silt loam; very weak medium subangular blocky structure; abrupt boundary.
7742	B_{21}	7-10 inches	Strong brown (7.5YR 5/6) firm heavy silt loam; moderate medium subangular blocky; yellowish brown (10YR 5/6) coatings on the blocks; gradual boundary.
7743	B_{22}	10-16 inches	Yellowish red (5YR 4/6) to dark brown (7.5YR 4/4) firm silty clay loam; moderate medium subangular blocky structure; gradual boundary.
7744	C_1	16-22 inches	Yellowish red (5YR 4/6) to dark brown (7.5YR 4/4) friable silt loam; moderate to strong medium subangular blocky structure; gradual boundary.
7745	D_{1m}	22-27 inches	Yellowish red (5YR 4/6) with yellowish brown (10YR 5/6) and a few fine faint light gray (10YR 7/2) splotches; friable silt loam with some grit or sand; weak coarse subangular blocky structure; gradual boundary.
7746	D_{2m}	27-32 inches	Mottled strong brown (7.5YR 5/6), light yellowish brown (10YR 6/4), and light gray (10YR 7/2); mottles are many, medium, distinct; compact in place, friable when crushed; very fine sandy clay loam; massive; gradual boundary.
7747	D_{3m1}	32-38 inches	Mottled strong brown (7.5YR 5/8), brownish yellow (10YR 6/6), and light gray (2.5Y 7/2); mottles are many, medium, distinct; compact in place, friable when crushed; fine sandy clay loam; massive; layers of iron-like laterite crusts; gradual boundary.
7748	D_{3m2}	38-45 inches	Mottled yellowish red (5YR 5/6), brownish yellow (10YR 6/6), and light gray (2.5Y 7/2); mottles are many, medium, distinct; brittle sandy clay; massive; gradual boundary.
7749	D_{4m}	45-52 inches	Yellowish red (5YR 5/8) with a few fine faint streaks and mottles of yellow (10YR 7/6) and light gray (2.5Y 7/2); brittle sandy clay; massive; some mica flakes; gradual boundary.
7750	D_{5m}	52 plus inches	Mottled brownish yellow (10YR 6/6), yellowish red (5YR 5/6), and light gray (2.5Y 7/2); mottles are many, medium, distinct; hard and brittle sandy clay; massive; a few iron indurations and mica flakes.

Remarks: Colors given are for moist soil unless otherwise stated. This is the eroded sloping phase of Silerton.

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Talbott silt loam **LOCATION** Loudon County, Tennessee

SOIL NOS. S58Tenn-53-2 **LAB. NOS.** 7815-7822

DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
		PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										
0-6	Ap	2.9a	3.7a	1.9a	3.6a	2.9a	63.5	21.5	26.7	41.4	Tr.	sil
6-10	A3	0.6a	1.5a	1.0a	2.0a	1.6a	49.1	44.2	15.9	35.7	-	sic
10-15	B1	0.2a	0.5a	0.4a	0.8a	1.0a	28.1	69.0	7.8	21.7	Tr.	c
15-24	B21	0.1a	0.3a	0.2a	0.5a	1.0a	25.3	72.6	7.0	19.6	Tr.	c
24-37	B22	0.2a	0.3a	0.2a	0.5a	0.8a	27.0	71.0	7.0	21.1	-	c
37-48	B3	0.2a	0.4a	0.3a	0.7a	2.0a	34.5	61.9	10.0	26.9	-	c
48-56	C1	0.5a	1.6a	0.8a	1.4a	2.6a	40.4	52.7	14.1	29.7	-	sic
56-66	C2	0.4a	1.2a	0.6a	1.3a	3.4a	44.6	48.5	17.0	31.7	Tr.	sic

8C1a pH 1:1	pH 1:5	pH 1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3% 6C1a		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
			ORGANIC MATTER									
6.5			1.81	0.127	14	2.8						9.0
5.0			0.27	0.031	9	4.4						16.4
4.9			0.17	0.030		6.9						25.9
5.0			0.13	0.036		7.7						28.5
4.8			0.13			7.8						28.2
4.8			0.13			7.1						26.5
4.8			0.12			6.5						24.3
4.8			0.03			6.2						23.4

5A1a CATION EXCHANGE CAPACITY NH_4Ac	6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g	8D3 Ca/Mg
←	EXTRACTABLE CATIONS milliequivalents per 100g. soil				→					
11.3	8.1	1.1	5.9	<0.1	0.4	85	62	9.6	15.5	7.4
13.0	5.1	1.6	11.5	<0.1	0.4	55	38	7.1	18.6	3.2
25.1	8.0	2.6	17.8	<0.1	0.5	44	38	11.1	28.9	3.1
28.3	5.9	2.2	31.9	0.1	0.6	31	22	8.8	40.7	2.7
30.0	3.3	1.6	33.9	<0.1	0.4	18	14	5.3	39.2	2.1
25.2	1.7	0.8	31.4	<0.1	0.4	12	8	2.9	34.3	
25.3	1.4	0.8	28.5	<0.1	0.3	10	8	2.5	31.0	
24.2	1.8	0.8	26.6	<0.1	0.3	12	10	2.9	29.5	

a. Many smooth and irregular light brown to black concr. (Fe-Mn?)

Soil type: Talbott silt loam
Soil Nos. : S58Tenn-53-2
Location: Loudon County, Tennessee; 600 feet north-northwest from Forked Creek Baptist Church at the edge of a second growth woodlot next to a pasture; elevation about 850 feet. (Field Sheet ANU-IL-5).
Topography: The sampling site is on a slightly concave 3 percent south slope; the slope steepens to 10 percent about 60 feet north and 40 feet west of the sampling site.
Physiography: Residual; argillaceous limestone.
Vegetation: Second growth of oak and poplar; the trees are about 30 to 50 years old; the canopy is open with an almost continuous grass cover on the ground. Part of the area is used for tobacco seed beds.
Sampled by: L. T. Alexander, Joe A. Elder, R. H. Jordan, and Klaus W. Flach, April 8, 1958.
Described by: Klaus W. Flach.

Horizon and Lincoln Lab. Number	
Ap 7815	0 to 6 inches. Dark brown (10YR 3/3) silt loam; moderate fine and very fine granular structure; very friable; abrupt and smooth boundary.
A3 7816	6 to 10 inches. Dark brown to strong brown (7.5YR 4/4 to 7.5YR 5/6) silt loam with common fine manganese concretions; weak to moderate medium and fine subangular blocky structure; very friable; clear and smooth boundary. In places A1 material is mixed with this horizon.
B1 7817	10 to 15 inches. Dark brown to strong brown (7.5YR 4/4 to 7.5YR 5/6) silty clay; moderate medium and fine blocky structure with clay flow surfaces on all ped faces; gradual and smooth boundary. Manganese concretions are common but less frequent than in the A3 horizon.
B21 7818	15 to 24 inches. Yellowish red (5YR 5/6) on ped faces variegated with red (2.5YR 4/6) and yellowish brown (10YR 5/4) in the interiors of peds; clay; strong medium blocky structure; clay flow on all ped faces; friable; sticky; gradual and smooth boundary.
B22 7819	24 to 37 inches. Yellowish red (5YR 5/6) on ped faces variegated with red (2.5YR 4/6) and yellowish brown (10YR 5/4) in the interiors of peds; clay; moderate to strong medium blocky structure compounded to weak medium prismatic structure; friable; sticky; gradual and smooth boundary.
B3 7820	37 to 48 inches. Variegated red and strong brown (2.5YR 4/6 and 7.5YR 5/6) silty clay; weak to moderate medium prismatic structure; all ped faces are shiny but the red faces are shinier than the brown ones; friable; gradual and smooth boundary.
C1 7821	48 to 56 inches. Variegated yellowish red and strong brown (5YR 5/6 and 7.5YR 5/6) silty clay with few fine and distinct yellowish brown (10YR 5/5 and 10YR 5/4) mottles; weak medium prismatic structure; friable; gradual and smooth boundary.
C2 7822	56 to 66 inches. Variegated yellowish red and strong brown (5YR 5/6 and 7.5YR 5/6) silty clay; weak medium and coarse platy structure; peds standing on edge in conformance to the structure of the material; friable.

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Talbott silt loam **LOCATION** Loudon County, Tennessee

SOIL NOS. S58Tenn-53-5 **LAB. NOS.** 7837-7843

DEPTH INCHES	HORIZON	1B1a PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1.0-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-6	Ap	1.0a	1.6a	1.1b	2.3b	3.7b	52.6	37.7	19.4	38.1	1	sicl
6-10	B1	1.5a	1.4a	0.9b	1.6b	2.7b	42.5	49.4	14.2	31.8	Tr.	sic
10-18	B2	2.9a	3.8a	2.2b	3.0b	3.2b	38.3	46.6	15.4	27.5	Tr.	c
18-24	B31	0.4a	0.7a	0.6b	2.0b	7.9b	49.1	39.3	28.7	29.5	Tr.	sicl
24-34	B32	0.6a	0.9a	0.7b	1.9b	6.9b	44.8	44.2	23.6	29.2	Tr.	sic
34-49	D1	2.5a	1.7a	1.2b	2.4b	4.7b	41.9	45.6	18.5	29.3	1	sic
49-60	D2	0.9	0.7	0.4	0.8	3.5	40.9	52.8	11.8	33.1	1	sic

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER* 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3% 6G1a	$CaCO_3$ equivalent %	MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
6.6			0.98	0.097	10	3.7				13.5
5.8			0.49	0.062	8	4.6				17.8
5.5			0.26	0.040	6	5.1				17.8
5.1			0.04	0.027		3.8				15.5
5.1			0.02			4.2				17.5
5.2			0.01			4.6				18.3
4.9			0.02			5.1				20.9

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations	8D3 Ca/Mg
	milliequivalents per 100g. soil →									
11.3	10.3	0.4	4.1	<0.1	0.2	96	73	10.9	15.0	
13.9	9.7	0.9	6.4	<0.1	0.2	78	63	10.8	17.2	
12.3	8.4	1.2	6.4	<0.1	0.2	80	60	9.8	16.2	7.0
9.9	5.3	0.8	6.4	<0.1	0.2	64	50	6.3	12.7	
12.0	6.3	1.2	6.9	<0.1	0.2	64	53	7.7	14.6	5.2
12.7	7.6	1.1	6.0	<0.1	0.2	70	60	8.9	14.9	6.9
13.8	6.6	1.0	9.7	<0.1	0.2	56	44	7.8	17.5	6.6

a. Common smooth dark brown to light brown concr. (Fe-Mn?)
b. Few smooth dark brown to light brown concr. (Fe-Mn?)

Soil type: Talbott silt loam
Soil Nos. : S58Tenn-53-5
Location: Loudon County, Tennessee; 1.5 miles east of Centerville store, south of Big Hill Road; elevation about 920 feet. (Field Sheet ANU-IL-47.)
Topography: The sampling site is on a 2- to 3-percent south slope on the crest of a divide between two drainage ways; at the site the gently sloping area is about 150 feet wide, terminated by steeper slopes toward the drainage ways.
Physiography: Residual, from argillaceous limestone.
Vegetation: The area is presently in pasture which consists almost exclusively of grasses.
Sampled by: L. T. Alexander, R. H. Jordan, Joe A. Elder, and Klaus W. Flach, April 9, 1958.
Described by: Klaus W. Flach.

Horizon and Lincoln Lab. Number	
Ap 7837	0 to 6 inches. Brown to dark brown (7.5YR 4/4) silty clay loam; moderate fine granular structure; very friable; abrupt and smooth boundary.
B1 7838	6 to 10 inches. Reddish brown (5YR 4/4) heavy silty clay with reddish brown (2.5YR 4/4 to 5YR 4/4) clay flow surfaces and strong brown (7.5YR 5/6) in the interiors of some peds; weak fine subangular blocky structure breaking readily to moderate fine granules; friable; clear and wavy boundary. The waviness of the lower boundary and the discontinuity of structural expression is probably due to subsoiling. In places in the lower part of the horizon, clay skins are continuous but they are absent from the upper part.
B2 7839	10 to 18 inches. Yellowish red (5YR 4/6) heavy silty clay; moderate to strong fine and medium blocky structure; continuous prominent clay skins on peds are responsible for color; interiors are strong brown (7.5YR 5/6); friable; gradual and smooth boundary.
B31 7840	18 to 24 inches. Variegated yellowish red (5YR 5/6) and yellowish red to red (2.5YR 4/6 to 5YR 4/6) silty clay with few medium and distinct light yellowish brown (10YR 6/4) mottles; weak medium blocky structure compounded to weak medium prismatic structure; friable; clay skins on about 40 percent of ped surfaces; gradual and smooth boundary.
B32 7841	24 to 34 inches. Variegated yellowish red (5YR 5/6) and yellowish red to red (2.5YR 4/6 to 5YR 4/6) silty clay with few medium and distinct light yellowish brown (10YR 6/4) mottles; weak medium blocky structure compounded to weak medium prismatic structure; friable; clay skins on about 40 percent of ped surfaces; common fine black manganese? concretions; clear and smooth boundary.
D1 7842	34 to 49 inches. Variegated yellowish red (5YR 5/6) and yellowish red to red (2.5YR 4/6 to 5YR 4/6) silty clay with few medium and distinct light yellowish brown (10YR 6/4) mottles; moderate medium blocky structure; friable to firm; many fine black manganese concretions; clear and smooth boundary.
D2 7843	49 to 60 inches. Variegated yellowish red (5YR 5/6) and yellowish red to red (2.5YR 4/6 to 5YR 4/6) silty clay loam with few medium and distinct light yellowish brown (10YR 6/4) mottles; very weak medium prismatic structure; friable to firm.

Remarks: A streak about 1- to 2-inches wide with yellowish brown (10YR 5/6) center and yellowish red to red 3.75YR 4/6) edges extends from the top of the B31 horizon into the lower part of the B32 horizon.

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Tellico loam **LOCATION** Loudon County, Tennessee

SOIL NOS. S58Tenn-53-3 **LAB. NOS.** 7823-7828

DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-7	A1	0.2a	0.8a	8.0b	27.4b	9.6b	31.0	23.0	30.0	23.4	Tr.	l
7-12	AB	<0.1	0.6a	6.5b	22.1b	7.4b	25.2	38.2	23.2	19.5	Tr.	cl
12-22	B21	<0.1	0.6a	5.9b	17.4b	5.8b	25.4	44.9	19.2	19.9	-	c
22-37	B22	0.1a	0.6a	4.5b	16.8b	7.1b	32.4	38.5	23.4	25.0	-	cl
37-54	B3	0.1a	0.6a	4.1b	17.1b	8.9b	33.9	35.3	26.2	26.2	-	cl
54-74	C		0.3a	3.5b	16.9b	9.2b	23.7	46.4	25.0	17.6	Tr.	c

8C1a pH 1:1	1:5	1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3% 6C1a		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
5.2			1.58	0.110	14	7.5						8.9
5.0			0.60	0.057	10	10.4						12.8
5.0			0.33	0.043	8	11.5						15.2
5.0			0.12	0.040		8.5						13.1
4.9			0.05			6.8						11.9
4.9			0.05			9.0						15.4

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat.% on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g	8D3 Ca/Mg		
←	milliequivalents per 100g. soil				→							
7.7	1.3	1.0	9.1	<0.1	0.4	35	23	2.7	11.8	1.3		
7.9	0.9	1.1	9.2	<0.1	0.4	30	21	2.4	11.6			
9.7	0.9	1.9	9.6	<0.1	0.4	33	25	3.2	12.8			
7.4	0.1	0.9	9.2	<0.1	0.5	20	14	1.5	10.7			
7.8	<0.1	1.0	8.2	<0.1	0.4	18	14	1.4	9.6			
9.4	<0.1	0.9	9.2	<0.1	0.4	14	12	1.3	10.5			

a. Many smooth light brown concr. (Fe-Mn?)
b. Common smooth light brown concr. (Fe-Mn?)

Soil type: Tellico loam
Soil Nos. : S58Tenn-53-3
Location: Loudon County, Tennessee; two miles south-southeast of Centerville Store, 1/2 mile south of the top of Alexander Knob; elevation about 1060 feet. (Field Sheet ANU-IL-45.)
Topography: The sampling site is in the upper quarter of a 40 percent south slope; slope is about 500 feet long and becomes somewhat less steep above the sampling site.
Physiography: Residual material from calcareous sandstone.
Vegetation: Red oak is dominant with some white oak; some of the trees are estimated to be between 60 and 100 years old but the stand has been selectively cut since and most trees are not more than 20 years old; site has never been plowed and shows no evidence of erosion.
Sampled by: L. T. Alexander, Joe A. Elder, R. H. Jordan, and Klaus W. Flach, April 8, 1958.
Described by: Klaus W. Flach.

Horizon and Lincoln Lab. Number	
O1	1 to 0 inch. Black (5YR 2/1) matted material consisting of partly decomposed organic material with many conspicuous worm casts about .5 mm. in diameter at the contact with the A1 horizon; not sampled.
A1 7823	0 to 7 inches. Dark reddish brown to dusky red (2.5YR 3/4 to 10R 3/4) loam; moderate fine granular structure; loose; clear and smooth boundary; there is an abundance of white fungus hyphae.
AB 7824	7 to 12 inches. Dusky red (10R 3/3 to 3/4) heavy silt loam to silty clay loam; weak fine subangular blocky structure that breaks readily to weak to moderate medium and fine granular structure; friable; gradual and wavy boundary; hyphae not as common as in A1 horizon.
B21 7825	12 to 22 inches. Dusky red to dark reddish brown (10R 3/4 to 2.5YR 3/4) silty clay loam; weak to moderate medium and fine subangular blocky structure with weakly developed clay flow surfaces on ped faces; friable; gradual and smooth boundary.
B22 7826	22 to 37 inches. Dark reddish brown to dusky red (2.5YR 3/4 to 10R 3/4) silty clay loam; weak to moderate medium and fine subangular blocky structure; peds are coated by weak and very thin clay flow surfaces; friable; gradual and smooth boundary.
B3 7827	37 to 54 inches. Dusky red (10R 3/4) silty clay loam; weak medium prismatic or coarse subangular blocky structure with very weak clay flow on some ped surfaces; friable; sticky; gradual and smooth boundary.
C 7828	54 to 74 inches. Dusky red to dark red (10R 3/4 to 10R 3/6) clay; weak medium prismatic structure with few weak clay skins in root holes; friable; slightly sticky.

Remarks: All horizons contain many small particles or concretions, mainly magnetite and quartz. Their average diameter is less than 0.2-mm, but the magnetite particles are several times larger than the quartz grains.

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Tellico loam **LOCATION** Loudon County, Tennessee

SOIL NOS. S58Tenn-53-4 **LAB. NOS.** 7829-7836

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 0.2-0.02	0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-5	A1	2.0a	3.8a	9.7b	21.1b	5.3b	36.0	22.1	23.1	27.2	Tr.	l
5-9	AB1	0.3a	1.8a	7.9b	18.6b	7.6b	34.7	29.1	22.2	26.7	Tr.	cl
9-16	AB2	1.1a	1.8a	6.4b	16.7b	5.0b	30.2	38.8	19.7	22.6	Tr.	cl
16-22	B1	1.0a	1.6a	5.9b	17.2b	4.4b	26.1	43.8	19.4	18.4	Tr.	c
22-30	B21	0.6a	1.7a	6.2b	17.0b	5.6b	24.7	44.2	18.4	18.3	Tr.	c
30-40	B22	0.9a	2.1a	7.8b	17.9b	7.6b	22.1	41.6	19.2	16.5	Tr.	c
40-52	B3	0.4a	2.6a	8.8b	17.4b	8.5b	19.7	42.6	19.3	14.3	Tr.	c
52-67	C1	2.3a	3.4a	8.1b	18.4b	6.4b	22.6	38.8	19.8	16.8	Tr.	cl

8C1a pH 1:1	pH 1:5	pH 1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3% 6C1a		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
5.8			3.36	0.207	16	6.3						11.5
5.0			0.92	0.084	11	7.7						12.1
4.8			0.44	0.057	8	9.1						14.6
4.8			0.21	0.046		11.4						16.2
4.9			0.13	0.038		12.6						16.5
4.8			0.12			14.7						16.8
4.9			0.07			16.1						18.1
4.9			0.04			15.5						17.8

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat.% on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Catins	8D3 Ca/Mg
←	milliequivalents per 100g. soil				→					
12.8	4.2	1.9	11.0	<0.1	0.6	52	38	6.7	17.7	2.2
8.5	0.5	0.6	11.4	<0.1	0.3	16	11	1.4	12.8	
9.1	0.2	0.9	11.0	<0.1	0.4	16	12	1.5	12.5	
10.3	0.1	1.1	11.5	<0.1	0.3	14	12	1.5	13.0	
9.8	<0.1	0.7	11.0	<0.1	0.2	9	8	0.9	11.9	
9.5	<0.1	0.8	11.9	<0.1	0.2	10	8	1.0	12.9	
9.5	<0.1	0.6	11.9	<0.1	0.2	8	6	0.8	12.7	
10.0	0.1	0.7	11.9	<0.1	0.2	10	8	1.0	12.9	

a. Many smooth light brown concr. (Fe-Mn?)
b. Common smooth light brown concr. (Fe-Mn?)

Soil type: Tellico loam
Soil Nos. : S58Tenn-53-4
Location: Loudon County, Tennessee; three miles north of Greenback; elevation about 1060 feet. (Field Sheet ANU-IL-45.)
Topography: The sampling site is in the upper quarter of a long steep north slope which is slightly convex. Above and at the sampling site the slope gradient is about 30 percent but it becomes 50 percent about 20 feet below the sampling site.
Physiography: Residual material from calcareous sandstone.
Vegetation: Second growth forest, predominantly consisting of red oak; some trees 80 to 100 years old.
Sampled by: L. T. Alexander, Joe A. Elder, R. H. Jordan, and Klaus W. Flach, April 9, 1958.
Described by: Klaus W. Flach.

Horizon and Lincoln Lab. Number	
01	1 to 0 inch. Black (5YR 2/1) soil material with strong very fine granular structure mixed with partly decomposed leaves, twigs and seeds with numerous distinct worm casts in the lower part of the horizon.
A1 7829	0 to 5 inches. Dark reddish brown (2.5YR 3/4) loam; moderate medium and fine granules compounded to weak fine subangular blocky structure; loose; many roots; gradual and smooth boundary.
AB1 7830	5 to 9 inches. Dark reddish brown (2.5YR 3/4) silt loam; moderate fine granules compounded to very weak fine subangular blocky structure; loose; gradual and smooth boundary.
AB2 7831	9 to 16 inches. Dusky red to dark red (10R 3/4 to 2.5YR 3/6) silty clay loam to silt loam; moderate fine granules compounded to very weak fine subangular blocky structure; loose; gradual and smooth boundary.
B1 7832	16 to 22 inches. Dusky red to dark red (10R 3/4 to 2.5YR 3/6) silty clay loam; weak fine subangular blocky structure breaking readily into moderate fine and very fine granules; loose; gradual and wavy boundary.
B21 7833	22 to 30 inches. Dusky red to dark red (10R 3/4 to 2.5YR 3/6) silty clay loam; weak to moderate fine subangular blocky structure breaking readily into weak fine granules; very friable to loose; gradual and smooth boundary; very weak and discontinuous clay skins.
B22 7834	30 to 40 inches. Dark red (10R 3/6 to 2.5YR 3/6) silty clay loam; weak to moderate medium and fine subangular blocky structure, almost continuous but weak clay skins; peds break to weak fine granules; friable; gradual and smooth boundary; in part of the excavation the lower part of this horizon contains shale fragments.
B3 7835	40 to 52 inches. Dark red (2.5YR 3/6) silty clay loam to silty clay; very weak fine prismatic to weak to moderate fine and medium subangular blocky structure; friable; gradual and smooth boundary; this horizon contains weak and discontinuous clay skins and a few highly weathered magnetic sandstone fragments.
C1 7836	52 to 67 inches. Dark red (2.5YR 3/6) silty clay loam to silty clay; weak fine prismatic to weak medium subangular blocky structure; friable to firm; distinct, thin clay flow surfaces on some ped faces and few and fine reddish yellow (7.5YR 6/6) shale fragments which are about 2-mm. wide and 1/2- to 2-cm. long; sandstone fragments as in the B3.

SOIL SURVEY LABORATORY Lincoln, Nebr. Oct ber 1963

SOIL TYPE Tunica silty clay **LOCATION** Dyer County, Tennessee

SOIL NOS. S61Tenn-23-10 **LAB. NOS.** 16437-16445

DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	3A1 0.02-0.002	2A2 > 2	TEXTURAL CLASS
		PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)										
0-5	Ap	-	-	-	0.3a	2.7b	37.4	59.6	28.2	32.2	-	
5-19	B21-C1	-	-	-	0.2a	1.9b	55.9	42.0	22.0	36.0	-	
19-25	B22-C2	-	-	-	0.3a	4.9c	70.1	24.7	14.2	61.1	-	
25-32	Du1	-	0.3d	0.2d	7.3d	53.9e	30.6	7.7	32.8	8.6	-	
32-44	Du2	-	0.1d	0.1d	5.6d	53.0e	33.1	8.1	83.6	7.7	-	
44-46	Du3	-	0.2f	0.2f	0.5g	11.9d	56.0	31.2	43.5	24.8	-	
46-52	Du4	-	0.1g	0.3g	0.9g	17.3d	63.4	18.0	59.2	22.0	-	
52-55	Du5	-	0.1f	0.3f	0.4f	0.9g	58.8	39.5	16.1	43.8	-	
55-65	Du6	-	0.1g	0.2g	0.5g	3.4d	72.0	23.8	38.7	37.0		
h 3-5	Ap											

pH 1:1	8C1a $CaCO_3$ equivalent %	6E1c ORGANIC MATTER 6A1a O.C. i %	6B1a N %	C/N	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	A.D. 4A1b g/cc	WATER RETENTION 4B1b 1/3-Bar Pieces %	4B2 15-Bar Sieved %	4C1 15-to 1/3-Bar in./in.
6.5	-	2.57	0.189	14	25.2	1.17			1.36	33.1	23.9	.11
6.8	-	1.06	0.103	10	27.8	1.38			1.65	33.5	22.4	.16
7.0	-	0.79	0.082	10	25.8	1.40	29.8	1.34	1.61	32.4	19.5	.17
7.6	3	0.22			9.9	1.40	27.8	1.34	1.38	9.1	5.0	.05
7.8	4	0.24			17.3	1.40	30.2	1.40	1.41	10.8	4.8	.08
7.8	3	0.54			28.0	1.34	37.7	1.22	1.60	37.3	14.4	.28
7.8	4	0.50			26.8	1.38	35.3	1.32	1.44	27.9	10.0	.24
7.7	2	0.68			26.9	1.39	28.5	1.36	1.60	32.5	19.8	.17
7.8	3	0.54			26.2	1.45	33.2	1.35	1.57	30.5	13.1	.23
					29.6	1.40			1.75	36.6		

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6M2b Ca	6O2b Mg	6H1a H	6P2a Na	6Q2a K	5C1 Base Sat.% NH_4OAc	5C3 Base Sat.% on Sum Cations	6G2a Ext. Al me/100g	6C1a Ext. Iron as Fe %	Ratios to Clay 6D2 15-Atm. Water	NH_4OAc CEC	Ext. Iron
	milliequivalents per 100g. soil											
34.9	27.6	8.0	7.4	0.1	0.9	105	83		1.8	.40	0.58	.030
30.2	24.0	7.6	4.8	0.1	0.7	107	87		1.3	.53	0.72	.030
28.3	22.1	7.6	2.9	0.1	0.7	108	91		1.1	.79	1.14	.044
8.7				0.1	0.2				0.6	.65	1.13	.078
8.5				Tr.	0.2				0.6	.59	1.05	.074
20.8				0.2	0.6				0.9	.46	0.67	.029
14.5				0.1	0.4				0.9	.56	0.80	.050
26.1				0.2	0.8				0.8	.50	0.66	.020
18.6				0.1	0.6				1.0	.55	0.78	.042

a. Many Fe-Mn nodules.
b. Few Fe-Mn nodules.
c. Common Fe-Mn nodules.
d. Few Fe-Mn nodules. Trace carbonate nodules.
e. Trace carbonate nodules.
f. Few Fe-Mn nodules. Many carbonate nodules.
g. Many Fe-Mn nodules. Few carbonate nodules.
h. Clods for bulk density and 1/3-bar water retention taken from plow pan--see description.
i. 15 Kg/M^2 to 60 inches.

Soil type: Tunica silty clay
Soil Nos. : S61Tenn-23-10
Location: Dyer County, Tennessee; on Midway road 80 feet west of Obion River bridge at driveway - north by house site on field road 0.4 mile to drainage ditch - on field road along drainage ditch 0.1 mile - south of field road 15 feet to sample site. Aerial photo ADN-3R-154.
Vegetation and use: Soybeans.
Slope and land form: Level to slightly depressional Mississippi River and Obion River flood plain. Possibly a former channel of Obion River.
Drainage and permeability: Somewhat poorly drained with slow runoff and slow internal drainage; permeability is slow.
Parent material: Alluvium from Mississippi River.
Collected by: E. J. Pedersen, J. L. Millet, J. A. Elder, E. C. Sease, W. C. Moffitt, C. L. Moore, and W. C. Jackson.
Described by: W. T. Brown, October 17, 1961.

Horizon and Lincoln Lab. Number	
Ap 16437	0 to 5 inches. Very dark grayish brown (10YR 3/2) silty clay; moderate fine granular structure; friable (lower two inches is massive firm plow pan); common fine and medium roots; abrupt smooth boundary.
B21 or C1 16438	5 to 19 inches. Dark gray (5Y 4/1) clay or silty clay with common medium faint brown (10YR 4/3) mottles; moderate coarse prismatic structure breaking to moderate medium subangular blocky structure; firm; common fine and medium roots mostly in ped interstices; common coatings, possibly clay films, on vertical ped faces; common crayfish holes two inches in diamter; clear smooth boundary.
B22 or C2 16439	19 to 25 inches. Gray (5Y 5/1) silty clay or clay with common fine distinct brown (10YR 4/3) and gray (N 5/) mottles; moderate coarse prismatic structure breaking to moderate medium subangular blocky structure; firm; common fine roots mostly in ped interstices; common fine pores; common coatings, possibly clay films, on vertical ped faces; common crayfish holes two inches in diameter; abrupt smooth boundary.
Du1 16440	25 to 32 inches. Dark grayish brown (10YR 4/2) fine sandy loam with few medium faint yellowish brown (10YR 5/4) mottles; massive; friable; common fine roots; one bulb-shaped crayfish bed three inches in diameter; abrupt smooth boundary.
Du2 16441	32 to 44 inches. Yellowish brown (10YR 5/4) fine sandy loam with clod coatings of gray (N 5/); massive; friable; calcareous, effervesces slightly with HCl; 1/2-inch gray clay layer at 38 inches; abrupt smooth boundary.
Du3 16442	44 to 46 inches. Dark gray (N 4/) to gray (N 5/) clay with few fine distinct yellowish brown (10YR 5/4) mottles; massive; firm; calcareous, effervesces slightly with HCl; common calcium concretions; abrupt smooth boundary.
Du4 16443	46 to 52 inches. Dark gray (N 4/) silt loam or loam with many coarse distinct dark yellowish brown (10YR 4/4) and black (N 2/) mottles; massive; friable; calcareous, effervesces slightly with HCl; abrupt smooth boundary.
Du5 16444	52 to 55 inches. Gray (N 5/) to dark gray (N 4/) clay; massive; firm; few tree roots; calcareous, effervesces violently with HCl; many calcium concretions; abrupt smooth boundary.
Du6 16445	55 to 65 inches. Gray (10YR 5/1) clay or silty clay with common coarse distinct black (N 2/) and reddish brown (5YR 4/4) mottles; massive; firm; few medium tree roots; few fine pores and root or worm holes; calcareous, effervesces slightly with HCl; common calcium concretions.

Clay mineralogy as follows: (Methods 7A2, 7A3)

(By Beltsville Laboratory)

Horizon	Montmorillonite	Chlorite	Vermiculite	Mica	Interstratified layer Silicates	Quartz	% Kaolinite (by DTA)	% Gibbsite (by DTA)
B21	xxxx	-	x	x	-	-	10	-
B22-C2	xxxx	-	x	x	-	-	10	-

dash, not detected; x, small; xxxx, dominant.

Remarks: Ap, B21 and Du1 sampled for Bureau of Public Roads. Colors and Munsell notations are for moist soil; soil was dry when sampled. All soil samples were fumigated with methyl bromide for 24 hours.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1963

SOIL TYPE Tunica silty clay **LOCATION** Dyer County, Tennessee

SOIL NOS. S61Tenn-23-11 **LAB. NOS.** 16446-16453

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 0.2-0.02	0.02-0.002	2A2 > 2	TEXTURAL CLASS
0-7	Ap	-	-	0.2a	0.4a	0.3a	43.2	55.9	4.9	38.8	-	
7-25	B2 or C	-	-	0.2a	2.1a	3.2a	45.7	48.8	12.3	38.3	-	
25-29	Du1	-	0.3	2.3	59.1	12.5	17.4	8.4	57.3	4.7	-	
29-38	Du2	-	0.4	8.2	51.3	22.7	13.5	3.9	60.4	3.7	-	
38-40	Du3	Tr.	0.2	2.7	24.3	42.5	22.6	7.7	77.1	4.3	-	
40-55	Du4	Tr.	0.2	1.6	45.5	33.7	15.9	3.1	78.9	4.3	-	
55-72	Du5	Tr.	1.1	10.6	50.9	24.4	10.4	2.6	61.6	3.4	-	
72-86	Du6	Tr.b	Tr.b	Tr.b	0.2b	1.1c	56.1	42.6	13.5	43.9	-	
d 4-7	Ap											

8C1a pH 1:1	6E1c $CaCO_3$ equivalent %	ORGANIC MATTER 6A1a O.C. %	6B1a N %	C/N	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	A.D. 4A1b g/cc	WATER RETENTION 4B1b 1/3-Bar Pieces %	4B2 15-Bar Sieved %	4C1 15-to 1/3-Bar in./in.
6.5	-	2.10	0.171	12	13.5	1.38e	26.7	1.20e	1.42e		19.6	
6.8	-	1.33	0.124	11	22.5	1.50	28.3	1.36	1.65	34.0	23.7	.14
7.1	-	0.22			4.2	1.51	18.6	1.41	1.47		4.6	
7.4	-	0.09							1.52f		2.2	
7.6	1	0.34									4.0	
8.2	2	0.06							1.39f		2.2	
8.1	2	0.09							1.55f		1.7	
7.1	-	0.94			28.6	1.32			1.58	31.0	22.2	.12
					19.7	1.57	25.2	1.46	1.72			

5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5R1a 6Q2a K	5C1 Base Sat.% NH_4OAc	5C3 Base Sat.% on Sum Cations	6G2a Ext. Al me/100g	6C1a Ext. Iron as Fe %	8D2 Ratios to Clay 15-Atm. Water	NH_4OAc CEC	Ext. Iron
←	milliequivalents per 100g. soil				→							
31.8	25.3	7.5	6.9	0.1	1.1	107	83		1.6	.35	0.57	.029
30.5	25.3	7.1	4.8	0.1	0.9	110	87		1.5	.48	0.62	.031
7.7	5.9	1.4	1.4	Tr.	0.2	97	84		0.5	.55	0.92	.060
4.1	3.1	0.9	0.7	Tr.	0.2	102	86		0.4	.56	1.0	.102
8.8				Tr.	0.2				0.6	.52	1.1	.078
4.4				Tr.	0.2				0.4	.71	1.4	.129
3.5				Tr.	0.1				0.4	.65	1.4	.154
32.2	23.1	7.8	3.8	0.1	0.8	99	89		1.3	.52	0.76	.030

a. Few Fe-Mn nodules.
b. Many Fe-Mn nodules.
c. Common Fe-Mn nodules.
d. Clods for bulk density taken from plow pan--see description.
e. Range is 0.16 g/cc.
f. One clod.

Soil type: Tunica silty clay
Soil Nos .: 861Tenn-23-11
Location: Dyer County, Tennessee; on Midway road 0.2 mile west of main levee - south by house site on field road 0.7 mile - 20 feet east of field road to sample site in soybean field. Aerial photo ADN-3R-170.
Vegetation and use: Soybeans.
Slope and land form: Level Mississippi River flood plain.
Drainage and permeability: Somewhat poorly drained with slow runoff and slow internal drainage; permeability is slow.
Parent material: Alluvium from Mississippi River.
Collected by: E. J. Pedersen, J. L. Millet, J. A. Elder, E. C. Sease, W. C. Moffitt, C. L. Moore, and W. C. Jackson.
Described by: W. T. Brown, October 17, 1961.

Horizon and Lincoln Lab. Number	
Ap 16446	0 to 7 inches. Very dark grayish brown (10YR 3/2) silty clay; 0 to 4 inches moderate medium granular structure, friable; 4 to 7 inches massive, firm to very firm plow pan; many fine roots; clear smooth boundary.
B2 or C 16447	7 to 25 inches. Very dark grayish brown (10YR 3/2) silty clay with few fine distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) mottles; moderate medium prismatic structure breaking to moderate medium subangular blocky structure; firm; few fine roots; thin clay films on vertical ped faces; abrupt smooth boundary.
Du1 16448	25 to 29 inches. Dark grayish brown (10YR 4/2) fine sandy loam; massive; friable; clear smooth boundary.
Du2 16449	29 to 38 inches. Pale brown (10YR 6/3) fine sand; single grain; loose; abrupt smooth boundary.
Du3 16450	38 to 40 inches. Dark grayish brown (10YR 4/2) fine sandy loam with common medium distinct yellowish brown (10YR 5/6) mottles; massive; very friable; abrupt smooth boundary.
Du4 16451	40 to 55 inches. Pale brown (10YR 6/3) fine sand; single grain; loose; clear wavy boundary.
Du5 16452	55 to 72 inches. Pale brown (10YR 6/3) fine sand or loamy fine sand with common medium faint yellowish brown (10YR 5/4) mottles; single grain; loose; abrupt smooth boundary.
Du6 16453	72 to 86 inches. Dark gray (10YR 4/1) silty clay loam with many coarse prominent dark reddish brown (5YR 3/4) and dark grayish brown (10YR 4/2) mottles; massive; firm; many fine pores; abrupt smooth boundary.
Du7	86 to 114 inches. (Bucket auger examination.) Dark grayish brown (10YR 4/2) loam or fine sandy loam with many medium faint grayish brown (10YR 5/2) mottles; friable.

Remarks: Ap, B2, and Du2 sampled for Bureau of Public Roads. Colors and Munsell notations are for moist soil; soil was dry when sampled. All soil samples were fumigated with methyl bromide for 24 hours.

OIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Waynesboro loam **LOCATION** Loudon County, Tennessee

SOIL NOS. S58Tenn-53-6 **LAB. NOS.** 7844-7852

DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	3A1 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
0-2	A1	4.3a	7.8a	7.0a	17.0a	11.6a	42.2	10.1	34.1	28.7	4	l
2-6	A2	2.9a	6.5a	6.6a	14.1a	13.4a	44.6	11.9	34.6	30.2	2	l
6-10	A3	1.9a	5.9a	6.5a	16.0a	10.9a	44.7	14.1	33.9	30.5	2	l
10-16	B1	2.4a	4.6a	4.7a	12.0a	7.8a	38.9	29.6	26.1	27.2	Tr.	cl
16-22	B21	1.6a	3.8a	4.1a	10.0a	6.8a	30.4	43.3	21.1	21.7	Tr.	c
22-27	B22	1.2a	3.3a	3.6a	9.5a	6.5a	23.7	52.2	19.1	16.4	Tr.	c
27-33	B23	1.1a	3.0a	3.3a	8.1a	7.2a	15.9	61.4	17.5	9.9	Tr.	c
33-47	B3	1.3a	3.1a	3.4a	7.9a	8.3a	12.4	63.6	18.2	6.4	Tr.	c
47-55	C1	1.8a	3.6a	3.8a	9.8a	7.1a	10.5	63.4	17.6	5.3	2	c

pH 8C1a 1:1	pH 1:5	pH 1:10	ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3 % 6C1a		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
4.4			3.92	0.168	23	1.2						6.7
4.8			1.40	0.072	19	1.3						4.7
5.0			0.68	0.046	15	1.5						5.2
5.0			0.28	0.028	10	3.3						10.6
5.0			0.21	0.028		5.2						15.4
4.9			0.22	0.028		6.4						18.3
5.1			0.08			7.8						20.8
5.0			0.01			7.6						21.0
5.2			0.01			6.0						21.8

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g			
←	milliequivalents per 100g. soil				→							
9.9	0.9	0.6	15.1	<0.1	0.3	18	11	1.8	16.9			
4.8	<0.1	0.1	7.7	<0.1	0.2	6	4	0.3	8.0			
3.5	<0.1	0.2	5.4	<0.1	0.2	11	7	0.4	5.8			
5.6	0.1	0.8	6.4	<0.1	0.3	21	16	1.2	7.6			
7.3	0.1	1.6	9.2	<0.1	0.4	29	18	2.1	11.3			
7.9	0.1	1.5	9.6	<0.1	0.4	25	17	2.0	11.6			
7.7	<0.1	0.8	10.1	<0.1	0.3	14	10	1.1	11.2			
6.5	<0.1	0.5	9.2	<0.1	0.1	9	6	0.6	9.8			
6.8	<0.1	0.3	10.1	<0.1	0.1	6	4	0.4	10.5			

a. Few smooth light brown to dark brown concr. (Fe-Mn?)

Soil type: Waynesboro loam
Soil No. : S58Tenn-53-6
Location: Loudon County, Tennessee; two miles northwest of Loudon on the north side of the Tennessee River; elevation about 860 feet. (Field Sheet ANU-IL-106)
Topography: The sampling site is on a small level, but slightly concave, area between two drainage ways.
Physiography: An old terrace of the Tennessee River.
Vegetation: A well preserved second growth forest consisting dominantly of oak and poplar; some of the trees are at least 100 years old. There is a loose open understory of trees of the above species with a mixture of about 10 percent juniper trees.
Sampled by: R. H. Jordan and Klaus W. Flach, April 9, 1958.
Described by: Klaus W. Flach.

Horizon and Lincoln lab. Number	
O1	1 to 0 inch. Black (5YR 2/1) partly decomposed organic material with many worm and mite casts.
A1 7844	0 to 2 inches. Black (10YR 2/1) loam; moderate fine and very fine granular structure; loose; abrupt and wavy boundary. Not sampled: A gray (5Y 5/1) micro-podzol A2 horizon with weak fine granular structure in places; in its best expression this horizon is about 1/2-inch thick.
A2 7845	2 to 6 inches. Brown (10YR 5/3) loam with common residues of A1 material mixed into the upper part of the horizon; weak medium platy structure; loose; gradual and smooth boundary.
A3 7846	6 to 10 inches. Brown (7.5YR 5/2 to 5/4) and yellowish red (5YR 5/6) loam; weak fine and medium subangular blocky structure; breaks readily into weak moderate fine granules; very friable; clear and smooth boundary.
B1 7847	10 to 16 inches. Red (2.5YR 4/6) silty clay loam variegated with few medium and fine brown to brown (7.5YR 5/3) mottles; weak fine and medium subangular blocky structure; friable; gradual and smooth boundary.
B21 7848	16 to 22 inches. Red to dark red (10R 4/6 to 3/6) silty clay loam or silty clay; weak to moderate fine subangular blocky structure; friable; gradual and smooth lower boundary.
B22 7849	22 to 27 inches. Dark red (10R 3/6) silty clay loam; weak to moderate fine and medium subangular blocky structure; ped faces have few discontinuous clay skins; friable; clear and smooth boundary.
B23 7850	27 to 33 inches. Dark red (10R 3/6) silty clay; angular blocky structure of no definite size preference; peds can be removed from the soil in large blocks that break easily into well defined fine angular blocks with continuous clay skins on cleavage faces; only slightly firm when removed; gradual and smooth boundary.
B3 7851	33 to 47 inches. Dusky red (10R 3/3) silty clay; angular blocky structure of no definite size preference; peds have weak clay skins; firm, not as firm as the B23 material; gradual and smooth boundary.
C1 7852	47 to 55 inches. Dark red (10R 3/6) silty clay with a few yellowish brown (10YR 5/4) shale fragments which are about 5-mm. wide and 10- to 15-mm. long; weak medium prisms breaking into ill-defined weak medium and fine blocky structure; peds have weak clay skins in places; firm, somewhat less firm than the overlying horizons.

Remarks: Large roots penetrate to the top of the B23 horizon where they stop abruptly; below that depth there are only very few and very fine root hairs throughout the B23 horizon. Well rounded water-worn washed quartz pebbles and equally rounded strongly weathered sandstone pebbles of about 2 to 4 inches in diameter occur dominantly in the B3 horizon where they occupy about 5 percent of the soil mass. A few pebbles occur in the upper horizon and again are somewhat more numerous at the surface. No distinct stone line was observed.

SOIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Waynesboro loam **LOCATION** Loudon County, Tennessee

SOIL NOS. S58Tenn-53-9 **LAB. NOS.** 7860-7867

DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	3A1 0.02-0.002	2A2 > 2 <19mm	TEXTURAL CLASS
		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
0-2	A1	12.8a	11.2a	6.4a	11.9a	7.1a	38.8	11.8	23.2	28.5	41	l
2-7	A2	4.6a	9.8a	7.2a	14.2a	7.0a	41.8	15.4	25.9	30.5	12	l
7-15	A3	4.0a	8.2a	5.7a	8.6a	9.1a	38.2	26.2	22.1	28.3	9	l
15-21	B1	7.9a	8.5a	5.4a	9.0a	6.2a	31.6	31.4	18.7	23.1	7	cl
21-31	B21	5.9a	7.1a	5.2a	10.5a	5.3a	25.9	40.1	18.4	18.4	3	c
31-42	B22	3.7a	6.5a	5.0a	9.4a	5.9a	17.6	51.9	16.2	12.0	4	c
42-53	B3	5.2	8.6	5.7	9.7	4.2	10.1	56.5	12.9	6.4	4	c
53-60	C1	6.9	8.9	5.9	10.6	4.4	7.1	56.2	13.3	3.6	4	c

8C1a pH 1:1	pH 1:5	pH 1:10	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron Fe_2O_3% 6C1a		$CaCO_3$ equivalent %		MOISTURE TENSIONS 1/10 ATMOS. %	1/3 ATMOS. %	4B2 15 ATMOS. %
			ORGANIC MATTER									
5.4			2.71	0.122	22	1.3						6.3
5.2			1.06	0.068	16	1.4						6.0
4.7			0.33	0.029	11	2.5						9.1
4.7			0.28	0.027	10	3.3						11.4
4.8			0.13	0.025		4.4						14.5
5.0			0.04			6.3						18.0
5.0			0.09			7.4						19.5
5.0			0.04			7.5						19.6

5A1a CATION EXCHANGE CAPACITY NH_4Ac	EXTRACTABLE CATIONS 6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5B1a 6Q2a K	BASE SAT. % NH_4Ac EXCH. 5C1	5C3 Base Sat.% on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g			
←	milliequivalents per 100g. soil				→							
8.4	1.7	0.8	10.0	<0.1	0.2	32	21	2.7	12.7			
5.4	0.4	0.4	6.8	<0.1	0.1	17	12	0.9	7.7			
5.7	0.1	0.2	7.8	<0.1	0.1	7	5	0.4	8.2			
7.0	0.1	0.2	8.2	<0.1	0.1	6	5	0.4	8.6			
7.7	<0.1	0.4	9.1	<0.1	0.1	6	5	0.5	9.6			
8.4	0.1	0.4	9.6	<0.1	0.1	7	6	0.6	10.2			
7.1	<0.1	0.4	9.6	<0.1	0.1	7	5	0.5	10.1			
7.6	0.1	0.4	8.7	<0.1	<0.1	6	5	0.5	9.2			

a. Few smooth dark brown to black concr. (Fe-Mn?)

Soil type: Waynesboro loam
Soil Nos. : 858Tenn-53-9
Location: Loudon County, Tennessee; one mile southwest of Axley Chapel; elevation about 1020 feet. (Field Sheet ANU-IL.)
Topography: The site is on a small level area which is terminated by drainage channels; level area extends from 50 to 300 feet from the sampling site and is terminated by a 14-percent slope; the level area is about 16 feet above the sole of the drainage channel.
Physiography: Old high terrace of the Tennessee River.
Vegetation: Dominantly there is young scrubby growth of red oak, Virginia pine and hickory with a few trees 60 to 80 years old.
Sampled by: R. H. Jordan and Klaus W. Flach, April 10, 1958.
Described by: Klaus W. Flach.

Horizon and Lincoln Lab. Number	
O1	½ to 0 inch. Black, partly decomposed litter; numerous earthworms and mite droppings.
A1 7860	0 to 2 inches. Dark grayish brown to dark gray (10YR 4/2 to 4/1) loam; moderate fine granular structure; loose; clear and smooth boundary.
A2 7861	2 to 7 inches. Dark brown to brown (7.5YR 4/2) loam with common admixtures of reddish brown (5YR 4/4); weak fine granular structure; friable; clear and smooth boundary.
A3 7862	7 to 15 inches. Yellowish red to red (5YR 4/6 to 2.5YR 4/6) heavy silt loam; weak fine and medium subangular blocky structure; friable; gradual and smooth boundary.
B1 7863	15 to 21 inches. Dark red (2.5YR 3/6) silty clay loam; weak moderate fine and medium subangular blocky structure; friable; gradual and smooth boundary.
B21 7864	21 to 31 inches. Dark red (10R 3/6) silty clay loam; weak to medium fine and medium subangular blocky structure; very few and very weak discontinuous clay skins; friable; clear and smooth boundary.
B22 7865	31 to 42 inches. Dark red (10R 3/6) silty clay; weak to moderate fine angular blocky structure; continuous moderate clay skins on peds; firm, slightly firm when removed; gradual and smooth boundary.
B3 7866	42 to 53 inches. Dark red (10R 3/6) clay loam; very weak medium blocky structure; distinct discontinued clay skins on peds; firm; gradual and smooth boundary.
C1 7867	53 to 60 inches. Dark red (10R 3/6) clay loam; very weak angular blocky structure; few patchy clay skins; firm.

Remarks: Quartz and sandstone pebbles are common from the B22 horizon on down; they are well rounded and are arranged without any apparent order (no stone line). On the surface there are areas where stones from 1/2- to 2-inch diameter are abundant; in those places they cover about 60 percent of the surface. There are a few stones up to 4 inches in diameter; all stones are well rounded.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Putnam County, Tennessee SOIL TYPE Wellston silt loam

LAB NOS. 12551 - 12558 SOIL NOS. S59Tenn-71-23

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2 (<19mm)	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12551	0-2	A1	2.1a	0.8a	1.2a	8.6	8.1	64.7	14.5	35.2	43.2	6	sil
12552	2-7	A2	1.4a	0.6a	0.9	6.5	6.4	61.5	22.7	29.8	42.3	10	sil
12553	7-12	B1	1.3a	0.5a	0.6	4.4	5.0	54.2	34.0	23.5	38.6	9	sicl
12554	12-18	B21	1.0a	0.2a	0.4	3.0	3.4	45.3	46.7	17.6	33.1	6	sic
12555	18-25	B22	0.3a	0.2a	0.3	2.0	2.3	40.5	54.4	13.5	30.7	9	sic/c
12556	25-29	B3	0.8a	0.2a	0.2	1.5	2.0	41.1	54.2	12.8	31.4	8	sic
12557	29-39	C1	0.9a	0.2a	0.2b	1.4	2.1	45.2	50.0	13.3	35.0	7	sic
12558	39-45	C2	4.0a	0.5a	0.3b	0.9	1.8	45.8	46.7	11.8	36.4	9	sic

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12551	4.6			3.90	0.147	26	2.4	28.2	1.27	22.1	1.31	1.33	7.5
12552	4.8			0.90	0.056	16	2.6	24.4	1.37c	22.0	1.38c	1.42c	9.1
12553	4.7			0.53	0.036	15	3.5	23.8	1.46	21.4	1.49	1.55	14.8
12554	4.8			0.30	0.030	10	4.3	25.8	1.45	25.2	1.46	1.55	20.4
12555	5.0			0.23	0.032		4.9	26.7	1.47			1.55	24.9
12556	5.0			0.18			5.3	29.9	1.43			1.52	24.9
12557	5.0			0.17			5.6	26.1	1.50c			1.58	23.0
12558	4.9			0.21			6.6	23.0	1.57c			1.66	21.8

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	5C8 Base Sat. % on Sum Cations	5C1 Base Sat. % NH_4OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations me/100g		
		milliequivalents per 100g soil										
12551	10.7	0.6	0.4	<0.1	0.2	16.0	7	11	1.2	17.2		
12552	7.0	0.2	0.1	0.1	0.1	9.7	5	7	0.5	10.2		
12553	9.9	0.2	0.2	0.1	0.1	13.4	4	6	0.6	14.0		
12554	12.7	<0.1	0.1	<0.1	0.1	17.2	1	2	0.2	17.4		
12555	16.3	<0.1	0.2	0.1	0.1	21.0	2	2	0.4	21.4		
12556	17.5	0.1	0.2	0.1	0.2	21.0	3	3	0.6	21.6		
12557	14.2	0.1	0.1	0.1	0.1	20.4	2	3	0.4	20.8		
12558	15.1	<0.1	0.1	0.1	0.2	20.0	2	3	0.4	20.4		

a. Many Fe-Mn? bearing aggregates.
b. Few Fe-Mn? bearing aggregates.
c. Range is 0.12 to 0.16 g/cc.

Soil type: Wellston silt loam

Soil Nos. : S59Tenn-71-23

Location: Putnam County, Tennessee. Two miles northwest of Monterey on Livingston Highway. 1/4 mile southeast of Woodcliff Church. 110 yards south of Highway, Neal farm. Photo AEW-6N-51

Vegetation and Use: Southern Red Oak, White Oak, Black Oak forest. Appears never to have been cultivated.

Slope and Land Form: Four percent; uneroded upland ridge top.

Drainage and Permeability: Well drained, surface runoff is moderate to rapid; internal drainage is moderate.

Parent Material: Siltstone and shale from Pennsylvanian System of Cumberland Plateau.

Samples Collected by: Edwood Pederson, G. T. Jackson, J. A. Elder, D. K. Springer, J. Fleming - December 1, 1959.

Profile Described by: G. T. Jackson, December 1, 1959.

Horizon and Lincoln Lab. No.	Depth	
Aoo Not sampled	1½ to ½ inch	Loose, undecomposed broadleaf litter; principally oak.
Ao Not sampled	½ to 0 inch	Partly decomposed broadleaf litter and twigs.
A1 12551	0 to 2 inches	Dark grayish brown (10YR4/2) silt loam with weak fine granular structure; very friable; many fine roots; abrupt wavy boundary.
A2 12552	2 to 7 inches	Yellowish brown (10YR5/6-5/4) silt loam with moderate medium granular structure; very friable; numerous roots and pores; boundary clear, smooth.
B1 12553	7 to 12 inches	Yellowish brown (10YR5/6) fine silt loam with fine subangular blocky structure common discontinuous clay films; friable; roots numerous; clear smooth boundary.
B21 12554	12 to 18 inches	Yellowish brown (10YR5/6) silty clay loam with weak medium and fine subangular blocky structure; common discontinuous clay films; friable; numerous fine roots; clear smooth boundary.
B22 12555	18 to 25 inches	Yellowish brown (10YR5/6) silty clay loam with common medium distinct variegations of yellowish red (5YR5/6); moderate medium subangular blocky structure; common discontinuous clay films; firm; few roots; clear smooth boundary.
B3 12556	25 to 29 inches	Yellowish brown (10YR5/6) silty clay loam or silty clay with common medium distinct variegations of strong brown (7.5YR5/6) and yellowish red (5YR5/6); strong fine angular blocky structure; thin discontinuous clay films; firm; clear smooth boundary.
C1 12557	29 to 39 inches	Yellowish brown (10YR5/6) silty clay with common medium distinct variegations of light yellowish brown (10YR6/4) and yellowish red (5YR5/6); moderate medium angular blocky and coarse platy structure; thin discontinuous clay films; firm; few shale fragments; clear, smooth boundary.
C2 12558	39 to 45 inches	Light gray (2.5Y7/2) shaly silty clay with many coarse prominent variegations of yellow (10YR7/6) and red (2.5YR4/8); medium coarse platy structure breaking to moderate medium angular blocky; common shale fragments; structure probably inherited from level bedded shale.
Dr (Not sampled)	45 inches plus	Whitwell shale.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Hardin County, Tennessee SOIL TYPE Wolftever silt loam

LAB NOS. 12375 - 12381 SOIL NOS. S59Tenn-36-9

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
12375	0-6	Ap	0.6a	1.4a	0.8a	1.5b	3.1c	63.3	29.3	16.9	50.4	-	sicl
12376	6-12	B1	0.8a	1.6a	0.9a	2.3b	5.1c	50.7	38.6	19.1	38.3	Tr.	sicl
12377	12-21	B21	0.1a	0.5a	0.5a	3.3c	8.6c	46.2	40.8	25.5	31.9	-	sic
12378	21-27	B22	<0.1	0.2a	0.3a	3.9c	11.8c	46.9	36.9	33.5	28.4	-	sicl
12379	27-44	B23	<0.1	0.1c	0.2c	2.3c	11.5	54.4	31.5	38.0	29.9	-	sicl
12380	44-55	B3	<0.1	<0.1	0.2d	1.4d	6.0	59.3	33.1	27.5	38.8	-	sicl
12381	55-81	C	<0.1	0.1d	0.4d	4.0d	6.5	55.9	33.1	27.1	38.1	-	sicl

LABORATORY NUMBER	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. Ø 4B3 Water %	4A1c g/cc	O.D. 4A1b g/cc	4B2 15-Bar Water %
12375	5.6			1.49	0.126	11	3.2	21.7	1.33	27.4	1.31	1.39	12.5
12376	5.0			0.44	0.057	8	3.4	22.1	1.49	24.7	1.48	1.55	16.3
12377	4.9			0.20	0.039		3.5	21.8	1.51	24.4	1.50	1.59	17.2
12378	4.9			0.15	0.040		3.5	20.8	1.59	23.0	1.57	1.64	15.9
12379	4.8			0.09			3.3	19.9	1.63	22.4	1.61	1.68	13.8
12380	4.8			0.10			3.5	22.9	1.57	23.8	1.56	1.63	14.5
12381	4.9			0.12			3.0	19.5	1.65	22.0	1.62	1.69	13.7

LABORATORY NUMBER	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6H1a Na	6P2a K	6Q2a H	5C1 Base Sat.% NH_4OAc	5C3 Base Sat.% on Sum Cations	5B1a Sum Ext. Bases	5A3a Sum Ext. Cations	8D3 Ca/Mg
		milliequivalents per 100g soil							me/100g		
12375	14.7	8.0	0.8	<0.1	0.2	12.0	61	43	9.0	21.0	
12376	13.2	3.6	0.5	<0.1	0.2	14.5	32	23	4.3	18.8	
12377	13.4	2.0	0.3	<0.1	0.2	15.0	19	14	2.5	17.5	
12378	11.8	1.9	0.4	<0.1	0.2	14.2	21	15	2.5	16.7	
12379	11.1	0.8	0.7	0.1	0.2	13.7	16	12	1.8	15.5	
12380	11.9	0.8	1.0	<0.1	0.2	14.2	17	12	2.0	16.2	
12381	12.7	1.4	2.0	<0.1	0.2	14.0	28	20	3.6	17.6	0.7

a. Many Fe-Mn? bearing aggregates.
b. Common Fe-Mn? bearing aggregates.
c. Few Fe-Mn? bearing aggregates.
d. Trace mica fragments.

Soil type: Wolftever silt loam

Soil Nos. : S59Tenn-36-5

Location: Hardin County, Tennessee, four miles southwest of Savannah, on C. S. Roberts farm, 1/2 mile west of Mud Creek on Diamond Island Road. Photo AIK-7F-94(1955)

Vegetation and Use: Johnson grass, sericea lespedeza, and weeds (Soil Bank).

Slope and Land Form: Nearly level to gently sloping low stream terraces. Elevation 382 feet.

Drainage and Permeability: Moderately well drained. Runoff is medium to slow, internal drainage moderately slow. Permeability moderately slow.

Parent Material: Developed in general alluvium washed from upland soils derived from a variety of rocks, including igneous rocks, shales, sandstones and limestones.

Samples collected by: Edwood Pedersen, T. R. Love, W. H. Proffitt, George Phibbs, Bobby Hinton, E. T. Lampley - October 21, 1959.

Profile described by: W. H. Proffitt and T. R. Love - October 21, 1959.

Horizon and Lincoln Lab.No.		
Ap 12344	0 to 7 inches	Dark grayish brown (10YR4/2) to dark brown (10YR3/3) fine silt loam to silty clay loam; moderately medium granular structure; friable; common small roots; few concretions 1 to 5 mm in diameter; abrupt smooth boundary.
B1 12345	7 to 15 inches	Yellowish brown (10YR5/4) to dark yellowish brown (10YR4/4) with an intermixture of dark grayish brown (10YR4/2) silty clay loam; moderate very fine subangular blocky structure; common small concretions 1.0 to 5.0 mm in diameter; few small roots; clear smooth boundary.
B21 12346	15 to 22 inches	Yellowish brown (10YR5/4) silty clay or silty clay loam; strong fine angular blocky structure; firm; patchy clay films; common black stains; common small concretions and segregations; clear smooth boundary.
B22 12347	22 to 31 inches	Yellowish brown (10YR5/4) silty clay loam; few fine faint light brownish gray (10YR6/2) to (2.5Y6/2), pale brown (10YR6/3) and brown to dark brown (10YR5/3-4/3) mottles; strong medium angular and subangular blocky structure; firm; common black small concretions; common black stains and segregations; clear smooth boundary.
B23 12348	31 to 42 inches	Yellowish brown to dark yellowish brown (10YR5/4-4/4) silty clay loam, with many fine faint mottles of light brownish gray (10YR6/2) to (2.5Y6/2) and strong brown (7.5YR5/6); moderate medium angular blocky structure; firm, patchy clay films; common to many small black concretions, stains and segregations; clear wavy boundary.
B24 12349	42 to 53 inches	Yellowish brown to dark yellowish brown (10YR5/4-4/4) silty clay loam, with many fine faint mottles of light brownish gray (10YR6/2) to (2.5Y6/2) and strong brown (7.5YR5/6); moderate medium angular blocky structure; firm; patchy clay films; common small black concretions and dark brown segregations and stains up to 2 cm in diameter; occasional small gravel or pebble; few small mica flakes; clear wavy boundary.
C1 12350	53 to 65 inches	Dark yellowish brown (10YR4/4) silty clay loam with many medium faint mottles of yellowish brown (10YR5/4-5/6) and light brownish gray (10YR6/2) to (2.5Y6/2); massive to weak medium prismatic structure; friable to firm; common black concretions and segregations ranging up to 2 cm in size; few small mica flakes.
C2 (Not sampled)	65 to 89 inches	Mottled brown (10YR4/3) dark yellowish brown (10YR4/4), yellowish brown (10YR5/4) light brownish gray (10YR6/2) to (2.5Y6/2), and pale brown (10YR6/3) clay loam; massive, friable, common black concretions and segregations 1.0 to 5.0 mm in diameter; common small mica flakes. (This horizon not sampled)

Remarks: Colors given are for moist soil.

SOIL SURVEY LABORATORY
Lincoln, Nebraska

LOCATION Hardin County, Tennessee SOIL TYPE Wolftever silt loam

LAB NOS. 12375 - 12381 SOIL NOS. S59Tenn-36-9

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	3A1 INTERNATIONAL II 0.2-0.02	3A1 INTERNATIONAL III 0.02-0.002	2A2 > 2	TEXTURAL CLASS
			PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)										
12375	0-6	Ap	0.6a	1.4a	0.8a	1.5b	3.1c	63.3	29.3	16.9	50.4	-	sicl
12376	6-12	B1	0.8a	1.6a	0.9a	2.3b	5.1c	50.7	38.6	19.1	38.3	Tr.	sicl
12377	12-21	B21	0.1a	0.5a	0.5a	3.3c	8.6c	46.2	40.8	25.5	31.9	-	sic
12378	21-27	B22	<0.1	0.2a	0.3a	3.9c	11.8c	46.9	36.9	33.5	28.4	-	sicl
12379	27-44	B23	<0.1	0.1c	0.2c	2.3c	11.5	54.4	31.5	38.0	29.9	-	sicl
12380	44-55	B3	<0.1	<0.1	0.2d	1.4d	6.0	59.3	33.1	27.5	38.8	-	sicl
12381	55-81	C	<0.1	0.1d	0.4d	4.0d	6.5	55.9	33.1	27.1	38.1	-	sicl

	pH 8C1a H_2O 1:1			ORGANIC MATTER 6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Free Iron as Fe_2O_3 %	BULK DENSITY Field State 4B4 Water %	4A1a g/cc	30-Cm. 4B3 Water %	4A1c g/cc	O.D. 4A1h g/cc	4B2 15-Bar Water %
12375	5.6			1.49	0.126	11	3.2	21.7	1.33	27.4	1.31	1.39	12.5
12376	5.0			0.44	0.057	8	3.4	22.1	1.49	24.7	1.48	1.55	16.3
12377	4.9			0.20	0.039		3.5	21.8	1.51	24.4	1.50	1.59	17.2
12378	4.9			0.15	0.040		3.5	20.8	1.59	23.0	1.57	1.64	15.9
12379	4.8			0.09			3.3	19.9	1.63	22.4	1.61	1.68	13.8
12380	4.8			0.10			3.5	22.9	1.57	23.8	1.56	1.63	14.5
12381	4.9			0.12			3.0	19.5	1.65	22.0	1.62	1.69	13.7

	5A1a CATION EXCHANGE CAPACITY NH_4OAc	EXTRACTABLE CATIONS 5B1a 6N2b Ca	6O2b Mg	6H1a Na	6P2a K	6Q2a H	5C1 Base Sat. % NH_4OAc	5C3 Base Sat. % on Sum Cations	5B1a Sum Ext. Bases me/100g	5A3a Sum Ext. Cations me/100g	8D3 Ca/Mg
		milliequivalents per 100g soil									
12375	14.7	8.0	0.8	<0.1	0.2	12.0	61	43	9.0	21.0	
12376	13.2	3.6	0.5	<0.1	0.2	14.5	32	23	4.3	18.8	
12377	13.4	2.0	0.3	<0.1	0.2	15.0	19	14	2.5	17.5	
12378	11.8	1.9	0.4	<0.1	0.2	14.2	21	15	2.5	16.7	
12379	11.1	0.8	0.7	0.1	0.2	13.7	16	12	1.8	15.5	
12380	11.9	0.8	1.0	<0.1	0.2	14.2	17	12	2.0	16.2	
12381	12.7	1.4	2.0	<0.1	0.2	14.0	28	20	3.6	17.6	0.7

a. Many Fe-Mn? bearing aggregates.
b. Common Fe-Mn? bearing aggregates.
c. Few Fe-Mn? bearing aggregates.
d. Trace mica fragments.

Soil type: Wolftever silt loam

Soil Nos. : S59Tenn-36-9

Location: Hardin County, Tennessee, 6.5 miles southwest of Savannah on Pittsburg Ferry Road and 1 mile east of Tennessee River on gravel road on Gene Whitten farm. Photo AIK-7F-96(1955).

Vegetation and Use: Cropland - corn.

Slope and Land Form: Gently sloping (2-3 percent) low terrace. Elevation 384 feet.

Drainage and Permeability: Moderately well drained. Runoff is medium; internal drainage moderately slow. Permeability moderately slow.

Parent Material: General alluvium washed from upland soils derived from a variety of rocks including igneous rocks, shales, sandstone and limestone.

Samples collected by: C. B. Breinig, Edwood Pedersen, George Phibbs, T. R. Love, W. H. Proffitt, Bobby Hinton, E. T. Lampley, E. C. Sease. October 22,1959.

Profile described by: W. H. Proffitt, E. C. Sease. October 22, 1959.

Horizon and Lincoln lab. No.	Depth	
Ap 12375	0 to 6 inches	Dark grayish brown (10YR 4/2) silt loam; weak fine crumb structure; very friable; common fine roots; few fine pores; few small rounded hard concretions; abrupt smooth boundary.
B1 12376	6 to 12 inches	Yellowish brown (10YR 5/4) light silty clay loam; weak fine subangular blocky structure; friable; some peds coated with dark yellowish brown (10YR 4/4); common black round hard concretions; clear smooth boundary.
B21 12377	12 to 21 inches	Yellowish brown (10YR 5/4) or dark yellowish brown (10YR 4/4) silty clay loam; weak fine subangular blocky structure; friable; patchy thin clay films; few to common round hard black concretions (1-2 mm. in diameter); clear smooth boundary.
B22 12378	21 to 27 inches	Yellowish brown (10YR 5/4-5/6) to dark brown (7.5YR 4/4) silty clay loam; with common dark yellowish brown (10YR 4/4) mottles; weak fine subangular blocky structure; friable; few patchy clay films; some peds coated with pale brown (10YR 6/3) silt; few small dark concretions or segregations; clear wavy boundary.
B23 12379	27 to 44 inches	Dark brown (7.5YR 4/4) to dark yellowish brown (10YR 4/4) silty clay loam; many medium faint mottles of light brownish gray (10YR 6/2), pale brown (10YR 6/3); yellowish brown (10YR 5/4-5/6) weak fine and medium subangular blocky structure; firm; few patchy clay films; common black stains on peds; some peds coated with light brownish gray (10YR 6/2) silt; few small soft black concretions; gradual wavy boundary.
B3 12380	44 to 55 inches	Yellowish brown to dark yellowish brown (10YR 5/4-4/4) silty clay loam; many medium faint mottles of pale brown (10YR 6/3), dark brown (7.5YR 4/4), and light brownish gray (10YR 6/2); weak medium angular blocky structure; firm; few patchy clay films; few peds coated with grayish brown (10YR 5/2) silt; common black stains on ped faces; few small black concretions; clear wavy boundary.
C 12381	55 to 81 inches	Dark yellowish brown (10YR 4/4) silty clay loam; common, medium, faint pale brown (10YR 6/3), light brownish gray (10YR 6/2) and strong brown (7.5YR 5/6); weak medium angular and subangular blocky structure to massive; firm; few peds coated with light brownish gray (10YR 6/2) and dark brown (7.5YR 4/4) silt; common small hard and soft concretions; few black stains; few fine mica flakes.

Remarks: Colors given are for moist soil.

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