

United States Department of Agriculture



Natural Resources Conservation Service
210 Walnut Street, Room 693
Des Moines, IA 50309-2180

June 18, 2013

IOWA INSTRUCTION 180-387 – PREVENTED PLANTING SUMMER COVER
OPTIONS FOR PRODUCERS ON FIELDS LABELED
HIGHLY ERODIBLE (HEL)

IA387.0 PURPOSE

This Iowa Instruction provides direction on options that may be discussed with producers with fields that are classified as Highly-erodible (HEL) that experience prevented planting due to wet conditions.

IA387.1 SCOPE

The Natural Resources Conservation Service (NRCS) seeks to work with producers that are experiencing prevented planting and protect soils from erosion and sedimentation damages. This instruction provides direction to NRCS employees in situations where they are advising producers with HEL fields in years when crop planting is prevented due to wet conditions.

IA387.2 FILING INSTRUCTIONS

This Iowa Instruction will be posted on the Iowa NRCS Employee Website, which can be accessed under the Topics/People/NRCS Employees/Iowa NRCS eDirectives or at this link [Iowa NRCS eDirectives website](#).

IA387.3 EXHIBITS

See the attachment.

/s/

Jay T. Mar
State Conservationist

Attachments

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(IA Instruction 180-387 First Edition – June 2013)

Helping People Help the Land

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Approved By: /s/

Date: June 18, 2013

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State Conservationist
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Introduction

Crop producers with HEL fields face dual challenges during years when planting is prevented due to wet field conditions. Those that have purchased federally-subsidized crop insurance must ensure conformance with the provisions of their insurance policies. At the same time they are responsible for HEL Compliance.

This instruction provides direction for NRCS field employees that are assisting producers under these circumstances. These instructions deal with conservation measures. Questions regarding crop insurance must be referred to the individual producer's crop insurance agent.

Conservation Cover Options for HEL Land with Soybean or Disturbed (Harvested or Tilled) Corn Residue

1. A summer cover crop is strongly recommended to protect the soil and maintain conformance with the producer's HEL Compliance responsibilities. The summer cover crop may be one or more of the species listed in the "Cover Crops to Improve Soil in Prevented Planting Fields" Fact Sheet dated June 2013 (attached) or successive versions. Winter cereal grasses may also be used.
2. A fall/winter cover crop is also strongly recommended and may be necessary to ensure compliance with HEL requirements for the following spring. Options for fall/winter cover crops include:
 - a. Volunteer re-seeding of the summer cover crop that is left standing.
 - b. Standing tall winter cereal grass residue that is left un-harvested and un-grazed.
 - c. Re-seeding of a fall/winter cover crop by September 15 using:
 - i. One or more of the species listed in the "Cover Crops to Improve Soil in Prevented Planting Fields" Fact Sheet dated June 2013 or successive versions, or
 - ii. A species or mix selected using the Midwest Cover Crops Council – Cover Crop Decision Tool found at <http://mcccdev.anr.msu.edu/VertIndex.php>.

NOTE: This option is required if the producer is receiving payment for cover crop establishment under any federal or state program.

Cover Crop Options for HEL Land with Un-disturbed (Not Harvested, Shredded, Rolled or Tilled) Corn Residues

If corn residue has not been disturbed by harvesting, shredding, rolling or tillage, any of the options listed above are acceptable. In addition, the producer could:

1. Control noxious weeds during the summer with mowing or herbicide application as needed, then
2. Plant a fall cover crop during the time period of August 1 through September 15 using:
3. Plant:
 - a. One or more of the species listed in the "Cover Crops to Improve Soil in Prevented Planting Fields" Fact Sheet dated June 2013 or successive versions, or
 - b. A species or mix selected using the Midwest Cover Crops Council – Cover Crop Decision Tool found at <http://mcccdev.anr.msu.edu/VertIndex.php>.

NOTE: This option is required if the producer is receiving payment for cover crop establishment under any federal or state program.

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HEL Compliance Status Reviews

If land that has been selected for an HEL status review has been certified as Prevented Planting with the Farm Service Agency, the fields will be given an HEL Compliance Determination code of Not Completed (NC) since the fields did not have a commodity crop planted on them that year. An NC code requires an explanation. From the drop down options choose, “No agricultural commodity crops being grown on HEL.” In the Comments box, type a note that “planting of commodity crops was prevented due to unusual rainfall events.”

As stated above, NRCS employees will strongly recommend cover crops to protect HEL Prevented Planting acres. If a producer chooses to plant cover crops as recommended above, visit the field to observe the cover crop establishment and document it in the producer’s case file.

In some cases a producer could apply one of the Cover Crop options above and still have less ground cover than planned. If that is the only compliance deficiency HEL status review procedures will be adjusted for the year following the Prevented Planting.

1. If the compliance plan calls for no-till and the producer no-tilled into the cover crop after natural termination or terminating the cover crop chemically, use the status review code of AA (actively applying an approved system).
2. If the compliance plan allows tillage and the residue level found during the compliance review is within 20% of the planned amount and there is at least 20% of the ground covered by residue, use the status review code of AA (actively applying an approved system).

Cover Crops to Improve Soil in Prevented Planting Fields

Natural Resources Conservation Service (NRCS)
Des Moines, Iowa

Iowa Fact Sheet
June 2013

Prolonged rain and flooding has resulted in many fields that will go unplanted this year. Farmers in this situation need to weigh not only their program and insurance options (“prevented planting”), but should also assess agronomic options to ensure long-term productivity from this difficult situation.

Producers should explore the benefits of planting a **cover crop** that has the potential to capture applied nutrients, fix nitrogen, build organic matter, control weeds, control erosion and/or improve soil health and biology during the remainder of the season. These together can build considerable yield potential for following crops. With the potential “prevented planting” payment and the improved yield potential following a full season “green manure” crop, their economic potential for the whole rotation could be considerable.

Producers are advised to check with their crop insurance agents on prevented planting requirements and harvest restrictions for cover crops.

A key soil health concept is to ensure that there is vegetation green and growing during all times of the year.

Building vs. Losing Topsoil

As excessive rainfall runoff or flood waters cut across unprotected fields, the top soil may have been lost from erosion and scouring. With the productive topsoil lost, so too are the nutrients, organic matter, and soil biology. If tillage is applied to these water-damaged fields to control weeds or smooth them out, even relatively flat soils will lose carbon, nitrogen and biomass.

Above-ground biomass of cover crops helps protect the soil from further sun, wind and water damage.



Selecting high bio-mass cover crop mixes will rebuild topsoil. Cover crops, especially if no-tilled, will add organic biomass both above and below ground to rebuild topsoil quicker than if left to grow weeds or especially if left with no cover.

Avoid removing biomass from the field by harvesting for forage or grain before Nov. 1, which will reduce the organic matter benefits, and instead consider killing or mowing prior to seed-head formation, particularly if reseeding could be incompatible with subsequent crops. This will also ensure rapid decomposition and leave more nutrients in the roots that are available to soil organisms and subsequent crops. Grazing is not a concern because biomass and nutrients are returned to the soil.

Soil Biology, Structure and Compaction

Many fields saturated for long periods lose soil organisms that create soil macro-pores and cycle nutrients and lose beneficial soil biology, such as mycorrhizal fungi and rhizobia bacteria that build structure and tilth. Without these organisms, the soils are very subject to compaction, crusting, and high bulk density problems.

Some fields may be so compacted that remediation activities are needed. However, cover crops, whether used alone or in conjunction with other compaction remediation activities, are essential to rebuild healthy soil structure. The roots of cover crops help to penetrate compacted zones, hold soil aggregates together, and sustain healthy organisms to restore soil structure. Growing roots are essential to re-establish the mycorrhizae in the soil and to create pathways for air and water to move through the soil profile, which are key components to restoring the soil's functional properties and will keep the pathways more open to result in a quicker fix of the compacted layers.

Building vs. Losing Nitrogen

Cover crops can build organic nitrogen, and/or sequester residual Nitrogen in the soil.

A legume or legume mix planted in early summer can easily provide 60-100% of the needed Nitrogen of a following corn crop.

A brassica or grass, or brassica+grass mix can scavenge over 40 pounds of residual N from the soil, and even more in situations where manure or preplant nutrients have been recently applied. Additionally, this results in a more rapid gain in total soil biomass and a higher total nutrient availability for subsequent crops.

Herbicide Concerns

A broassey test is recommended to determine if a herbicide carry over is present. For amine herbicides, sorghum-sudangrass is the most tolerant of cover crop species.

Cover Crop Species Guidance

Cover crop selection and management should focus on maximizing both above and below-ground biomass and encouraging nutrient cycling as deep in the soil profile as possible. Choosing a mix of a grass with a fibrous root system and a legume or brassica with a tap root will usually provide the widest range of benefits.

Planting wildlife friendly cover crops such as buckwheat or brassicas and leaving the growth and/or the grain can be a very valuable winter food source for a wide variety of wildlife and pollinators.



Legumes alone or in combination with grasses can provide quicker soil biology/biota restoration and Nitrogen fixation. Nitrogen fixation is directly related to growth and development of the legume. An early summer planted legume such as cow peas, will grow rapidly and fix a good amount of N prior to a killing frost when it will be terminated. For later plantings, an over wintering legume such as Red Clover should be considered. Make sure all legume seed is inoculated.

Brassicas provide excellent weed control and Nitrogen scavenging potential. The tap roots are excellent at penetrating tillage pans and dense soil layers.

Seeding and Establishment

One of the challenges an early to mid-summer seeding is the timeliness of rainfall after seeding for germination. It is best if the seed is drilled. This will also address concern about crusted soil and seed-to-soil contact.

Additional References

Midwest Cover Crop Council: www.mccc.msu.edu

Sustainable Agriculture Research and Education (SARE): *Managing Cover Crops Profitably*
www.sare.org/publications

Natural Resources Conservation Service - Field Office
Technical Guide (eFOTG):
efotg.nrcs.usda.gov/treemenuFS.aspx

Cover Crops to Improve Soil in Prevented Planting Fields

Use the following table and/or the Iowa NRCS Cover Crop Decision Tool at:
<http://mcccdev.anr.msu.edu/VertIndex.php>

Cover Crops Recommendations by Resource Concern

Resource Concern	Species	Pure Stand Rate lbs./ac. of PLS ¹	Seeding Dates
SUMMER COVER			
Erosion Control	Spring Oats	60	4/1 - 6/15
	Annual Ryegrass	20	4/1 - 6/15
	³ Sudangrass and Sorghum/Sudangrass	25	5/15 - 8/1
	Buckwheat	50	6/1 - 8/15
	Millet	25	5/15 - 8/1
Compaction	Oil Seed Radish	8 drilled - 12 broadcasted	4/1 - 5/15
	Rape/Turnips/Canola	4 drilled - 8 broadcasted	4/1 - 5/15
Nitrogen Fixing	Alfalfa	15 drilled - 20 broadcasted	4/1 - 6/1
	Red Clover	8 drilled - 12 broadcasted	4/1 - 6/1
	Soybean	50	5/1 - 7/1
	Cow Peas	50	5/15 - 8/1
Herbicide Concern ⁴	Sorghum/Sudangrass	25	5/15 - 8/1
FALL/WINTER COVER			
Soil Building/N Scavenge	Annual Ryegrass	20	8/1 - 10/1
	Cereal Rye	75	8/1 - 10/15
	Winter Wheat ²	75	FFD - 10/15
	Spring Oats	60	7/15 - 9/15
	Winter Triticale	75	8/1 - 10/15
Nitrogen Fixing	Hairy Vetch	15	8/1 - 10/1
	Winter Peas	50	8/1 - 10/1
	Crimson Clover	10 drilled - 15 broadcasted	8/1 - 9/15
	Alfalfa	15 drilled - 20 broadcasted	4/1 - 6/1
	Red Clover	8 drilled - 12 broadcasted	4/1 - 6/1
	Soybean	50	5/1 - 7/1

¹Pure Live Seed (PLS) ²Not to be planted prior to Fly Fee Date (FFD) ³Concern with grazing after frost

⁴Sorghum/Sudangrass is the most tolerant to amine herbicides.

This is not an all-inclusive list of species. See Midwest Cover Crop Council-Cover Crop Decision Tool – Cover Crop Selector for Iowa Counties.

It is recommended that you plant diverse cover crop mixes. The rates listed are for pure stand seedings. When developing a cover crop mix, take the percent desired by the pure stand rate to determine seeding rate by species. (Example 60% Cereal Rye 40% radish would have a seeding rate of .6 X 75 = 45 lbs. cereal rye and .4 X 8 = 3.2 lbs. radish)

Cover Crops to Improve Soil in Prevented Planting Fields

Examples of Diverse Cover Crop Mixes

See Midwest Cover Crop Council-Cover Crop Decision Tool – Cover Crop Selector for Iowa Counties for an all-inclusive species list.

Resource Concern	Species Mix	% of Pure Stand Rate	lbs./ac. of PLS	Seeding Dates
SUMMER COVER				
Erosion Control	Annual Ryegrass	20	4	5/15 - 8/1
	Sorghum/Sudangrass	15	4	
	Oats	15	9	
	Buckwheat	15	8	
	Oil Seed Radish ¹	20	2	
	Cow Peas	15	8	
Compaction	Oil Seed Radish ¹	20	2	4/1 - 5/15
	Turnips ¹	20	2	
	Rape/Canola ¹	30	2	
	Millet (Pearl of Japanese)	30	8	
Nitrogen Fixing 1	Alfalfa	50	8	4/1 - 6/1
	Red Clover	50	5	
Nitrogen Fixing 2	Cow Peas	30	15	7/1 - 8/1
	Crimson Clover	40	6	
	Hairy Vetch	30	5	
Grazing/Compaction	Cow Peas	20	10	5/15 - 8/1
	Millet (Pearl of Japanese)	20	5	
	Sorghum/Sudangrass	20	5	
	Turnip ¹	20	2	
	Forage Radish ¹	20	2	
FALL/WINTER COVER				
Soil Building/N Scavenge	Cereal Grain (Cereal Rye, Winter Wheat, Winter Triticale)	50	38	8/1 - 10/15
	Oil Seed Radish	50	5	
Erosion Control	Cereal Grain (Cereal Rye, Winter Wheat, Winter Triticale)	60	45	8/1 - 10/15
	Hairy Vetch	40	6	
Nitrogen Fixing	Cereal Rye	40	30	8/1 - 10/1
	Winter Peas	30	15	
	Hairy Vetch	30	5	
Grazing/Compaction	Cereal Grain (Cereal Rye, Winter Wheat, Winter Triticale)	50	38	8/1 - 10/1
	Oil Seed Radish	25	3	
	Turnip	25	3	

¹Brassicas will bolt when seeded in the spring, and will produce seed.