

Soil Quality Enhancement Activity – SQL05 – Use of Deep Rooted Crops to Break up Soil Compaction



Enhancement Description

This enhancement is for the use of deep rooted crops to break up compacted soils and improve soil quality. Deep rooted crops can be perennial plants like alfalfa or annual plants like forage radish.

Land Use Applicability

Cropland

Benefits

Soils can have naturally occurring compacted layers (hard pans) or those that have been created through tillage or other farming activities. Deep rooted crops with large taproots can alleviate the effects of soil compaction by penetrating the compacted layer, creating pore space that allows air, water and crop roots to penetrate deeper in the soil profile. Eliminating soil compaction through the use of deep rooted crops increases infiltration, reduces surface runoff, improves soil tilth and overall soil quality. It also eliminates the need for sub-soiling with a plow, thus saving fuel, reducing erosion and enhancing water quality.

Criteria for Use of Deep Rooted Crops to Break up Soil Compaction

- The selected crop must be one that has been identified as having the capability of alleviating soil compaction (state specific lists are available in NRCS Field Office Technical Guide).
- If perennial plants are used, once established, they must be maintained annually by proper fertilization and mowing/harvesting.
- Annual crops should be seeded early enough in the fall to allow for adequate growth to occur prior to winter (Follow NRCS 340 standard).
- No deep tillage is allowed to remove compacted layer.

Documentation Requirements for Use of Deep Rooted Crops to Break up Soil Compaction

1. Written documentation for each year of this enhancement describing the following items:
 - Deep rooted crops used and dated planted.
 - Cash crop planted and method used.
2. A map showing fields where the enhancement is applied.
3. Photographs of a representative number of fields showing deep rooted crops.



United States Department of Agriculture
Natural Resources Conservation Service

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Approved Crops

Species	Rate lbs/acre	Latest Seeding Date*	
		North	South
Sweet Clover	15-20	May 31/Aug 25	May 31/Sep 1
Forage Radish	10-20	Aug 15	Aug 25
Alfalfa	15	May 31	May 31
Sorghum Sudangrass	40-50	Jun 30	Jun 30

* North = Coos, Grafton, and Carroll counties, South = all other counties
Use lower rates for drilling, higher rates for broadcast seeding