

Soil Erosion Enhancement Activity – SOE04 - Continuous no-till



Enhancement Description

This enhancement is for using a continuous no-till, strip till, or direct seeding method of planting throughout the planned rotation. High residue levels are maintained by including high residue-producing crops, or by low residue crops followed by a cover crop in the rotation. Termination of all cover crops is accomplished using chemical methods or non-chemical methods, such as flail mowing, roller crimper and frost kill.

Land Use Applicability

Cropland

Benefits

Use of continuous no-till, strip till, or direct seeding leaves high levels of crop residue that can reduce erosion by wind and water up to 90%. The result is increased soil organic matter and added weed control as compared to intensively tilled soils with no surface residue. This will in turn, enhance and protect water quality and biotic communities that depend on clean water. Mechanically terminating cover crops using a flail mower or roller crimper can eliminate the use of herbicides, thereby reducing potential offsite water quality problems while leaving the soil undisturbed.

Conditions Where Enhancement Applies

This enhancement applies to all acres of annually planted cropland.

Criteria

Implementation of this enhancement **requires** the use of continuous no-till, strip till, or direct seeding of all crops in the planned rotation. The no-till, strip till, or direct seeding system must incorporate the following activities:

1. Rotations that include only high residue producing crops:
 - a. No cover crop is required if a Soil Tillage Intensity Rating (STIR) \leq 10 is maintained for the rotation.
 - b. Cover crops, if required:
 - i. Can be a single grass species or a multiple species mixture that includes at least 50% grass or legume adapted for the local area
 - ii. Must be planted using a no-till system
 - c. Use only crops that produce high residue levels throughout the rotation, e.g. corn, wheat



- d. Residue removal is prohibited (Exception: residue removal is allowed for optimal crop production where SCI (Soil Conditioning Index) can be maintained greater than zero and the criterion of 3(c) is still met).
2. Rotations that include low residue crops
 - a. Cover crops must be used after ALL low residue crops, e.g. vegetables, cotton, soybeans
 - b. Plant cover crops using a no till system
 - c. Cover crops can be a single grass species or a multiple species mixture that includes at least 50% grass or legume adapted for local use.
 - d. Maintain a maximum Soil Tillage Intensity Rating (STIR) ≤ 10 for the planned rotation
 - e. Residue removal is prohibited
3. Additional Criteria
 - a. All residues must be uniformly distributed over the entire field
 - b. No full-width tillage is permitted regardless of the depth of the tillage operation
 - c. Field(s) must have a soil loss at or below the soil tolerance (T) level for wind and/or water erosion for the crop rotation and a Soil Tillage Intensity Rating (STIR) of ≤ 10 for each rotation

Adoption Requirements

This enhancement is considered adopted when the STIR criteria, residue and/or cover crops listed above have been implemented on the land use acreage.

Documentation Requirements

Documentation for each field where this enhancement is applied:

1. Planned crop rotation showing cover crops that will be used after low residue crops,
2. Planting method used for each crop in the rotation (no-till, strip till, direct seeding),
3. List of all other potential ground disturbing farming operations,
4. Method of cover crop termination, e.g. chemical, flail mowing, roller crimper, or combination,
5. Dates for farming operations,
6. Map showing fields and acreage, and
7. Photographs of planted crops.

SOIL EROSION ENHANCEMENT ACTIVITY

SOE04- OR CONTINUOUS NO-TILL

Description

This enhancement is for using a continuous no-till, strip till, or direct seeding method of planting throughout the planned rotation.

Oregon Criteria

1. High Residue Producing Crops:

Small grains, winter/spring	Corn, field
Vetch	Corn, sweet
Flax	Eggplant
Camelina	Flax
Sorghum	

2. Low Residue Producing Crops:

All others:

Artichoke	Asparagus	Beans, dry	Beans, green	Beets	Broccoli
Buckwheat	Celery	Cauliflower	Carrot	Cantaloupe	Canola
Cabbage	Chicory	Corn, silage	Cucumbers	Garlic	Greens
Lavender	Lettuce	Onions	Peas	Peppers	Potatoes
Pumpkin	Radish	Safflower	Soybean	Spinach	Squash
Sugar beet	Tomato	Turnip	Watermelon		

Documenting The Enhancement

- 1. A map or aerial photo showing fields where the Activity is applied**
- 2. Photographs of a representative number of fields showing the planted crops**

3. Crop Rotation Records by Field (Include Cover Crops)

Crop Rotation							
Field	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5	Crop 6	Crop 7

 Rotation Meets High Residue Crop Criteria

no cover crop required
high residue throughout rotation

 Rotation Meets Low Residue Crop Criteria

cover crop required after all low residue crops
plant cover crops using a no-till system

4. 90% residue maintained during critical erosion period?

 Yes

 No

5. Method of Cover Crop Termination (if applicable):

 mowing crimping frost
 other (specify): _____

6. Farming Operations

Crop	Planting Date	Planting Method (no-till, strip-till, direct seed)	Ground Disturbing Field Operations (include date)

7. Residues uniformly distributed over the entire field?
8. Soil Loss at or below the soil loss tolerance (T) level for wind and/or water erosion for the rotation? _____ Yes _____ No
9. Maximum Soil Tillage Intensity Rating (STIR) of 10 for the rotation?
_____ Yes _____ No