

Soil Erosion Enhancement Activity – SOE01 - Continuous no-till with high residue



Enhancement Description

Utilize continuous no-till/strip till/direct seed in the rotation in combination with high and low residue producing crops or cover crops to maintain a high level of residue cover through critical erosion periods.

Land Use Applicability

Cropland.

Benefits

High levels of surface residue with continuous no-till/strip till/direct seed reduce erosion by

wind and water by up to 90%. The result is increased soil organic matter compared to intensively tilled soils with no surface residue protection. This will in turn, enhance and protect water quality and biotic communities that depend on clean water.

Criteria

Implementation of this enhancement **requires** the use of continuous no-till/strip till/direct seed. The no-till/strip till/direct seed system must incorporate 1 or more of the following activities.

1. Maintain high level of residue cover after no-till planting all crops in the rotation.
 - a. Utilize high residue crops in the rotation
 - b. Maintain a minimum of 50% residue cover after no-till planting all crops.
2. Use high residue cover crops to provide adequate residue for no-till planting after or between low residue crops in rotation.
 - a. Utilize high and low residue crops in the rotation
 - b. Use no-till to plant high residue cover crops between two low residue annual crops
 - c. Maintain a minimum of 50% residue cover after no-till planting all crops.
3. Low disturbance no-till planting and moderate level of residue cover after or between low residue crops in rotation.
 - a. Utilize high and low residue crops in the rotation
 - b. After high residue crops, maintain a minimum of 50% residue cover after no-till planting
 - c. After low residue crops use low disturbance no-till planting; maintain a Soil Tillage Intensity Rating (STIR) ≤ 20 and a minimum of 30% residue cover after planting.



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In addition, each field must also have the soil loss at or below the tolerance (T) level for wind and/or water erosion for the crop rotation and a Soil Tillage Intensity Rating (STIR) of 30 or less for each planted crop or cover crop in the rotation.

Documentation Requirements

1. Crop rotation records including rotation length in years, crops and cover crops planted.
2. Sequence and description of operations for each crop and/or cover crop including harvest, residue conditioning, nutrient placement and planting/seeding.

SOIL EROSION ENHANCEMENT ACTIVITY

SOE01– OR CONTINUOUS NO-TILL WITH HIGH RESIDUE

Description

This Enhancement is applicable on cropland and involves utilizing continuous no-till, strip till, or direct seed to plant low and/or high residue producing crops in rotation. High levels of surface residue reduce wind and water erosion, improve soil quality, and ultimately result in water quality protection.

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		

3. Criteria for this Enhancement require the use of continuous no-till, strip-till, or direct seed. The system must incorporate one or more of the following activities. Select all that apply:

Maintain high level of residue cover after no-till planting all crops in the rotation:

- a. Utilize high residue crops in the rotation**
- b. Maintain a minimum of 50% residue cover after no-till planting all crops.**

Use high residue cover crops to provide adequate residue for no-till planting after or between low residue crops in rotation.

- a. Utilize high and low residue crops in the rotation**
- b. Use no-till to plant high residue cover crops between two low-residue annual crops**
- c. Maintain a minimum of 50% residue cover after no-till planting all crops.**

Low disturbance no-till planting and moderate level of residue cover after or between low-residue crops in rotation.

- a. Utilize high and low residue crops in the rotation**
- b. After high residue crops, maintain a minimum of 50% residue cover after no-till planting**
- c. After low residue crops use low disturbance no-till planting; maintain a Soil Tillage Intensity Rating (STIR) < 20 and a minimum of 30% residue cover after planting. Determination of STIR is done inside RUSLE2, so a RUSLE2 run to characterize the rotation is required (attach)**

4. Soil Loss for the Rotation at or below the tolerance (T) level for wind and/or water erosion? Attach RUSLE2 run.

Yes **No**

5. Soil Tillage Intensity Rating (STIR) of 30 or less for each planted crop or cover crop in the rotation? STIR is determined within RUSLE2. Attach RUSLE2 run

Yes **No**