United States Department of Agriculture
Natural Resources Conservation Service

2010 Ranking Period 2

# 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) $\leq$ 20 and a minimum of 30% residue cover after planting.

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.

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High residue producing crops include: Alfalfa and Alfalfa/grass mixtures, Corn Grain, Small Grains, Grain Sorghum, and similar crops.