

## Soil Quality Enhancement Activity - SQL02 – Continuous Cover Crops



### **Continuous Cover Crops**

Growing continuous *seasonal* cover crops of grasses, legumes or forbs following all annual crops during all the non-crop production periods of the rotation.

Continuous cover cropping is applicable to conventional, specialty and organic crop production systems.

### **Land Use Applicability**

This enhancement is applicable on cropland.

### **Benefits**

Growing seasonal cover crops during all non-crop periods between annual crops reduces wind and water erosion. Cover crops also restore and maintain soil productivity and soil quality over a wide range of climates and crop species. They do so by increasing organic matter, improving soil fertility, breaking pest cycles and providing habitat for soil macro-fauna, such as earthworms.

### **Criteria**

Implementation of this enhancement requires continuous cover crops during the non-crop production period of the rotation. The cover crops must meet 2 or more of the following criteria:

1. High bio-mass cover crops for erosion control and increased soil organic matter improvement.
  - Plant a cover crop with a growth potential to produce a minimum of 2,000 lbs/acre (dry weight) above ground bio-mass when terminated by harvest, frost, mowing, tillage, crimping, and/or herbicides in preparation for the following crop.
2. Legume cover crops for biological nitrogen fixation.
  - Plant a leguminous cover crop between two primary crops in the rotation, or plant a leguminous crop that replaces one of the primary crops. This enhancement does not apply to legumes that are normally part of the crop rotation. It shall be seeded at a rate recommended by the NRCS Field Office technical Guide. Estimate nitrogen credits from the leguminous crop and base any additional N applications according to the guidelines of the Land Grant University.
3. Non-leguminous cover crops to capture and recycle residual nitrogen.
  - Plant a cover crop with a growth rate and rooting depth sufficient to scavenge excess nitrogen from the root zone of the previous crop. Seed the cover crop at the rate recommended by the NRCS Field Office Technical Guide. Reduce the nitrogen recommendation for the following crop by the amount of nitrogen estimated to have been scavenged and recycled by this cover crop.



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*This enhancement does not apply to the same acres on which a leguminous cover crop is applied.*

4. Cover crops for weed suppression.

- Plant a cover crop with the chemical and physical characteristics necessary to suppress or compete with the identified target weed species. Leave cover crop residues on the soil surface to maximize the allelopathic (chemical) and mulching (physical) effects. Select cover crops as recommended in the NRCS Field Office Technical Guide or from the Land Grant University as appropriate.

5. Biodiversity improvement with cover crops.

- Plant cover crop species with the characteristics to attract beneficial insects such as pollinators and/or predator insects, serve as trap crops for damaging insects, and/or provide natural bio-fumigation for soil dwelling pests. Select cover crops to meet the planned objective as recommended in the NRCS Field Office Technical Guide or from the Land Grant University as appropriate.

### **Documentation Requirements**

- Crop rotation records, including rotation length in years, crops and cover crops planted.
- Sequence and description of operations for each crop and cover crop including harvest, tillage, nutrient placement and planting/seeding

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### State Criteria

For this enhancement cover crops must be grown on all planned acres following annually planted crops and during any fallow periods in the crop rotation. In addition, the cover crops grown must meet at least two of the following criteria:

1. High bio-mass cover crops for erosion control and increasing soil organic matter.

Acceptable cover crops for this option include:

Barley; Canola; Corn; Pearl millet; Oats; Cereal Rye; Annual or Italian Ryegrass; Any Sorghum; Sudangrass or Sudan/Sorghum hybrids; Triticale; and Wheat.

2. Legume cover crops for biological nitrogen fixation.

Acceptable cover crops for this option include:

Alfalfa; Chickling vetch; Chickpea; Cowpea; Field pea/lentils; Hairy or crown vetch; White clover; Red clover; Soybean; and Sweet clover.

3. Non-leguminous cover crops to capture and recycle residual nitrogen.

Acceptable cover crops for this option include:

Buckwheat; Canola; Corn; Radish; Cereal rye; Annual or Italian ryegrass; Safflower; Any Sorghum; Sudangrass or Sudan/Sorghum hybrids; Sunflower; Triticale; Turnip; and Wheat.

*This enhancement does not apply to the same acres on which a leguminous cover crop is applied.*

4. Cover crops for weed suppression.

Acceptable cover crops for this option include:

Barley; Buckwheat; Cowpea; White clover; Pearl millet; Mustard; Radish; Red clover; Cereal rye; Annual or Italian ryegrass; Any Sorghum; Sudangrass or Sudan/Sorghum hybrids; Triticale; Turnip; and Wheat.

5. Biodiversity improvement with cover crops. Cover crop selected must be a different crop type (i.e. warm season grass, cool season grass, warm season broadleaf, cool season broadleaf) or, if a cover crop mix is used, include a different crop type than the previous crop.

Acceptable cover crops for this option include:

Alfalfa; Barley; Buckwheat; Canola; Chickling vetch; Chickpea; Cowpea; Field pea/lentils; Hairy or Crown vetch; White clover; Mustard; Radish; Red clover; Cereal rye; Annual or Italian ryegrass; Any Sorghum; Sudangrass or Sudan/Sorghum hybrids; Sweet clover; Triticale; and Wheat.



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**Additional Requirements**

- Cover crops can not be harvested or grazed
- Cover crops must follow planting dates, seeding rates, method of planting and other requirements in 340 Cover Crop Standard. Specifications will be provided on the Cover Crop Worksheet (NE-CPA-7).
- Cover crops which winter kill must be planted at least 8 weeks prior to the average date of the first killing frost.
- Cover crops which over winter must have at least 4 weeks of spring growth before termination.
- Winter annual cover crops planted following a low residue crop must have a minimum of 6-8” of growth before they are terminated.
- Cover crops which follow fall harvested crops must be a winter annual small grain such as rye, wheat or triticale, or a winter annual small grain with a legume.

**Documentation**

**TABLE OF PLANNED AND APPLIED ACTIVITY – SQL02**

Tract	Field(s)	Existing Rotation	Planned Rotation	Cover Crops Used	Acres Planned	Acres Applied
1	1	C-B-W	C-cc1-B-W-cc2	cc1 = wheat or rye cc2 = cowpeas	80	

**C=Corn; B=soybeans/edible beans; W=Wheat; M=Milo; A=Alfalfa; O=Oats; cc=cover crop; Others=\_\_\_\_\_**

**I certify that the following information meets specifications and has been provided to NRCS:**

1. Planned rotation, cover crops used, and the number of acres where the enhancement was planned and applied (complete the above table).
2. A completed Cover Crop Worksheet (NE-CPA-7) showing the cover crops grown, seeding date and seeding rate, fertilizer applied, and the method and date of termination.
3. A map with delineation of the area where the enhancement was applied.

I understand that it is my responsibility to obtain all necessary permits and to comply with all laws, regulations and ordinances pertaining to the application of these activities.

**Certified by:** \_\_\_\_\_ **Date:** \_\_\_\_\_