United States Department of Agriculture

CONSERVATION ENHANCEMENT ACTIVITY

E329F

CONSERVATION STEWARDSHIP PROGRAM

No-till into green cover crops to improve soil organic matter quantity and quality

Conservation Practice 329: Residue and Tillage Management, No-Till

APPLICABLE LAND USE: Crop (Annual and Mixed), Crop (Perennial)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Prepare fields using appropriate site preparation to establish a no till, planting green system to increase soil health and soil organic matter content. Planting green methods will be used to maximize the benefits of the cover crop by leaving the cover crop in place for an extended growing period. The current NRCS wind and water erosion prediction technologies must be used to document STIR and SCI calculations. The health of the soil will be monitored using the In-Field Soil Health Assessment and through a laboratory analysis.

Criteria

- All residues must be uniformly distributed over the entire field.
- Residue must not be burned, grazed, or harvested.
- Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 20. No full-width tillage is performed from the time of harvest or termination of one cash crop to the time of harvest or termination of the next cash crop in the rotation regardless of the depth of the tillage operation.
- The crop rotation must achieve a soil conditioning index (SCI) of zero or higher. If there is a planned change in crop rotation, the planned crop rotation must have an SCI greater than the current crop rotation.

- Evaluation of the cropping system (management) using the current approved soil conditioning index (SCI) procedure results in zero or higher and results in a positive trend in the Organic Matter (OM) subfactor value over the life of the rotation.

- Use the Cropland In-Field Soil Health Assessment Guide to record the benchmark conditions prior to adopting no-till green planting in Year 1. During Year 3, a follow up assessment for soil health with laboratory testing will be completed. Soil samples will be collected and tested for soil organic carbon content measured by dry combustion and carbon mineralization potential measure by 24 hour carbon dioxide burst OR permanganate-oxidizable carbon laboratory methods.
- The current version of the NRCS Cover Crop Termination Guidelines must be followed to ensure the next crop is eligible for crop insurance. Risk Management Agency's Good Farming Practices Handbook indicates that following NRCS 340 Cover Crop and the Termination Guidelines are acceptable practices. In some zones, an agreement with the insurer may be needed, check with local crop insurance provider.

North Dakota Sideboards:

- Producer must do testing in year 3. 7 soil processes need to be evaluated according to technical note 450-03.
- Cover crop must be seeded meeting NRCS standards and specifications.
- Field will continued to be managed with no-till management in subsequent years following the seeding green event.
- Cropland In-Field Soil Health Assessment will be completed prior to cover crop seeding.
- Seeding green must be completed by year 3 of the contract to meet the requirement of the year 3 testing. Producer must check with crop insurance to stay in compliance with their policy.
- Payment will be made for three years on the parcel that is seeded green, with the first payment occurring after the cash crop is planted green and the third and final payment occurring in the third year when the producer has completed the testing as outlined in the enhancement job sheet.
- IE; NRCS In-Field Soil Health Assessment would be completed in the fall of year 1 prior to the seeding of the cover crop. The cash crop will be seeded green in the spring of year 2 (first CSP payment will occur in this year). Payments will continue for year 3 (first crop year after the seeding green event). In year 4 payment will be made after the producer as fulfilled the additional soil health testing requirements.

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Documentation and Implementation Requirements:

Participant will:

- ☐ Provide NRCS with the planned crop rotation and tillage operation(s) used for each crop prior to implementation using the following tables. If the implemented rotation differs from the planned rotation, provide NRCS with updated tables.

Field	Acres	Planned Crops (in sequence)	Length of Rotation (years)

Field	Crop	Field Operation	Timing of Operation (month/year)

- ☐ Notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- ☐ Collect soil samples in the area of field where this enhancement action has been applied. Follow the soil sample collection protocol for soil health assessments as outlined in Tech Note 450-3. Submit for laboratory analysis.

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- ☐ Provide laboratory test results and sampling locations to NRCS for interpretation by e-mailing the data to SoilHealthTest@usda.gov
- ☐ Will not burn, graze, or harvest residues.
- ☐ Uniformly distribute residues over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- ☐ Not use any full-width tillage from the time of harvest or termination of one cash crop to the time of harvest or termination of the next cash crop in the rotation regardless of the depth of the tillage operation.
- ☐ After implementation, provide NRCS with representative pictures of the implemented enhancement as well as the following information:

Crop	Height of Cover Crop When Planting (inches)	Mechanical Termination Methods Used	Chemical Methods Used	Days Between Cover Crop Termination and Planting of Cash Crop

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NRCS will:

- ☐ Provide technical assistance to meet the criteria of the enhancement, as needed.
- ☐ Provide participant with current NRCS Cover Crop Termination Guidelines.
- ☐ Prior to implementation, evaluate the field condition using the Cropland In-Field Soil Health Assessment.
- ☐ Prior to implementation, use information provided by the participant to calculate the Soil Tillage Intensity Rating (STIR) values using NRCS wind and water erosion prediction technologies. Verify the enrolled field(s) will have a Soil Tillage Intensity Rating value of no greater than 20 for each crop in the planned rotation.

Crop	STIR Value Planned	STIR Value Implemented (if different than planned)

- ☐ Prior to implementation, use information provided from the participant and the approved soil conditioning index (SCI) procedure to verify the SCI is zero or higher and results in a positive trend in the Organic Matter (OM) subfactor value over the life of the rotation. If the crop rotation is changing, the planned rotation must have a higher SCI than the original crop rotation. If the implemented rotation differs from the planned rotation, note the values below.

Planned SCI value = _____ and Planned OM Subfactor Value = _____

Implemented SCI value = _____ and Implemented OM Subfactor Value = _____

- ☐ During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria. After implementation, if the applied

crops, crop rotation, or field operations are different than the planned crops, crop rotation, or field operations, use information provided from the participant to calculate the Soil Tillage Intensity Rating values to document that the applied rotation met the enhancement criteria. STIR values for each crop = _____

- □ After implementation, if the applied crops, crop rotation, or field operations are different than the planned crops, crop rotation, or field operations, use information provided from the participant to calculate soil conditioning index (SCI) and Organic Matter (OM) subfactor values to document that the applied rotation met the enhancement criteria.
- □ Review soil health assessment lab test results and SHAPE interpretation with the participant.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

_____ _____

NRCS Technical Adequacy Signature Date