



CONSERVATION ENHANCEMENT ACTIVITY

E345144Z - Colorado

CONSERVATION STEWARDSHIP PROGRAM

Reduced tillage to reduce energy use

Conservation Practice 345: Residue and Tillage Management, Reduced Till

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN ADDRESSED: Inefficient Energy Use

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description:

Establish a reduced tillage system which reduces total energy consumption associated with field operations by at least 25% compared to conventional tillage systems (benchmark). Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 80. The current NRCS wind and water erosion prediction technologies must be used to document STIR calculations and energy consumption.

Criteria:

- Uniformly distribute residues over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- Do not burn crop residues.
- The Soil Tillage Intensity Rating (STIR) value shall include all field operations that are performed during the crop interval between harvest of the previous cash crop and harvest or termination of the current cash crop (includes fallow periods). The crop STIR value rating shall be no greater than 80, and no primary inversion tillage implements (e.g. moldboard plow) shall be used.. [Refer to NRCS Tillage Guide for guidance on primary vs. secondary tillage equipment.](#)
- Reduce the total energy consumption associated with field operations by at least 25% compared to the benchmark condition. The current NRCS wind and water

erosion

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prediction technologies must be used for determining energy use to document energy use reductions.

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Additional Colorado Documentation Requirements:

- Residue and Tillage Management, Reduced till, 345, Implementation Requirements document must be completed per the Plans and Specifications for the planned purpose of reducing tillage to reduce energy use.
- The current NRCS wind and water erosion prediction technologies must be used to calculate soil loss and STIR.



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Documentation and Implementation Requirements

Participant will:

- Prior to implementation, provide NRCS with the current (benchmark) and planned crop rotation and tillage operation(s) used for each crop.

| Field | Acres | Current (Benchmark) Crops (in sequence) | Length of Crop Rotation (years) |
|-------|-------|---|---------------------------------|
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| Field | Crop | Current (Benchmark) Field Operation | Timing of Field Operation (month/year) |
|-------|------|-------------------------------------|--|
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| Field | Acres | Planned Crops (in sequence) | Length of Crop Rotation (years) |
|-------|-------|-----------------------------|---------------------------------|
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| | | | |
| | | | |

| Field | Crop | Planned Field Operation | Timing of Field Operation (month/year) |
|-------|------|-------------------------|--|
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- During implementation, notify NRCS of any planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- During implementation, no residue will be burned.
- During implementation, all residues will be uniformly distributed over the entire field. Removing residue from the row area prior to or as part of the planting operation is acceptable.
- During implementation, no primary inversion tillage implements (e.g. moldboard plow) will be used.
- During implementation, reduce the total energy consumption associated with field operations by at least 25% compared to the current benchmark tillage system.
- After implementation, if changes to the rotation were made, complete the tables above to document the applied Conservation Crop Rotation for the contract period and provide to NRCS.

NRCS will:

- As needed, provide technical assistance to meet the criteria of the enhancement.
- Prior to implementation, use information provided from the participant to calculate the Soil Tillage Intensity Rating values and energy consumption for both the current system and the planned system using the approved NRCS wind and water erosion prediction technologies. Verify the Soil Tillage Intensity Rating value is no greater than 80 for each crop in the planned rotation and total energy consumption is reduced by at least 25%.
Current STIR values = _____ and Energy Consumption = _____
Planned STIR values = _____ and Energy Consumption = _____
- During implementation, evaluate planned changes in crops, crop rotation, or field operations to verify the planned system meets the enhancement criteria.
- After implementation, if changes were made to the planned crops, crop rotation, or field operations, use information provided from the participant to calculate the Soil Tillage Intensity Rating values and total energy consumption to document that the applied rotation met the enhancement criteria.
Applied STIR values = _____ and Energy Consumption = _____

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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.

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Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



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