



CONSERVATION ENHANCEMENT ACTIVITY

E328106R- Colorado

CONSERVATION STEWARDSHIP PROGRAM

Resource conserving crop rotation for soil organic matter improvement

Conservation Practice 328: Conservation Crop Rotation

APPLICABLE LAND USE: Crop (Annual & Mixed)

RESOURCE CONCERN ADDRESSED: Soil Quality Degradation

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description

Establish a Resource Conserving Crop Rotation. Rotation must include AT LEAST one resource conserving crop in a minimum three year crop rotation. The crop rotation will reduce soil erosion (water and wind), improve soil health, improve soil moisture efficiency, and reduce plant pest pressures.

Criteria

- Crops shall be grown in a planned sequence. The crop rotation shall include a minimum of two different crops in a minimum three year crop rotation. Rotation must include AT LEAST one resource conserving crop (refer to State Specific List of Resource Conserving Crops). For purposes of these criteria a cover crop is considered a different crop.
- Crop rotation must produce a positive trend in the Organic Matter (OM) subfactor value, as determined by the Soil Conditioning Index (SCI) calculated using current NRCS wind and water erosion prediction technologies. (management SCI value)
- Design the crop sequence to provide sufficient diversity in plant family and species as well as timing and type of field operations to suppress the pest(s) of concern, which



may include weeds, insects, and pathogens. Use land grant university or industry standards to determine a suitable crop sequence.

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- Select crops, varieties of crops, and the sequences of crops based on local climate patterns, soil conditions, irrigation water availability, and an approved water balance procedure.
- Where applicable, plan suitable crop substitutions when the planned crop cannot be planted due to weather, soil conditions, or other local situations.
- The crop rotation shall include at least one of the following types of resource conserving crops (refer to State Specific List of Resource Conserving Crops):
 - With at least one other crop in the rotation, include a perennial grass, legume or grass/legume mix grown at least 2 years from time of planting or
 - With at least one other crop in the rotation, include a grass-forbs or legume-grass-forbs mixture, where the grass component of the mixture is grown at least 2 years from time of planting, or
 - With at least two other crops in the rotation, include a small grain grown in combination with a legume, forbs or any grass-forbs mixture that is used as a green manure, whether interseeded or planted after small grain harvest. Neither the small grain residue nor the cover crop shall be harvested or grazed.

Colorado Criteria:

Attach RUSLE2 or WEPS outputs that document crop rotation, soil erosion estimates and SCI ratings for both baseline and planned operations. Attach additional sheets as needed.

Complete Cover Crop (340) Implementation requirements when applicable.

Conservation Crop Rotation (328) Implementation Requirements document must be completed for Improved Resource Conserving Crop Rotation per the Plans and Specifications for the planned purpose of reducing compaction.

Consider the following practices to help improve your SCI score: raise crops that produce high amounts of residue that are retained in the field, utilize cover crops when possible to increase organic matter, utilize manure or crop mulch to add organic matter to the soil, limit the number of tillage operations, limit the amount of soil disturbance each operation creates, minimize the amount of wind and water erosion occurring on the field. and/ or use production techniques that will increase crop and residue production.



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Documentation and Implementation Requirements

Participant will:

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

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

| Field | Crop | 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.
- 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 in selecting crop rotations or substitute crops that would meet the criteria of the enhancement.
- Prior to implementation, verify that the crop rotation includes at least two different crops in a minimum three year crop rotation.
- Prior to implementation, verify the crop rotation includes at least one resource conserving crop (refer to State Specific List of Resource Conserving Crops). (show improvements from benchmark erosion prediction outputs to planned outputs).



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- Prior to implementation, use information provided from the participant to calculate the management Soil Conditioning Index (SCI) value using current NRCS wind and water erosion prediction technologies. Crop rotation must produce a positive trend in the Organic Matter (OM) subfactor value.

Management SCI Value = _____ 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 crop rotation is different than the planned crop rotation, use information provided from the participant to calculate SCI value to document that the applied rotation met the enhancement criteria.

Management SCI Value = _____ OM subfactor value = _____

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

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