USDA United States Department of Agriculture

CONSERVATION ENHANCEMENT ACTIVITY E340J (With Montana Supplement)

CONSERVATION STEWARDSHIP PROGRAM

Cover crop to improve moisture use efficiency and reduce salts

Conservation Practice 340: Cover Crop

APPLICABLE LAND USE: Crop (Annual and Mixed)

RESOURCE CONCERN: Soil

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Saline soil parent material is accumulating salts in the soil rooting zone due to excessive naturally available soil water, poorly drained soils, and limited transpiration. For the purpose of this enhancement, establish a cover crop to improve soil moisture use efficiency and reduce damaging levels of salts. Salt affected zones in the field may be delineated and managed to prevent spread of salt affected areas.

Criteria

- Within an individual field there may be different levels of salinity. Delineate the salt affected zones, testing for electrical conductance (EC) in addition to geospatial maps, yield data, etc.

- Select cover crop species that will tolerate the highest salt concentrations in the field or delineate salt affected zones within the field to be managed separate from the rest of the field.

- If salt affected areas are managed separate from the rest of the field, the salt tolerant cover crop will be seeded in the affected area plus within a 30-foot buffer zone or the width of one pass of the producer's planter.

- Maximize cover crop biomass throughout the growing season and maintain cover as long as possible to maximize the transpiration of water.
- Utilize the USDA PLANTS database PLANTS Characteristics salt tolerance ratings or other state approved method to determine crop and/or cover crop species suitable for the site.
- Monitor salinity changes in the field utilizing soil tests that include EC by:
  - Year 1, establish EC benchmark condition,
  - Year 3, a follow up assessment will be completed to determine if management activities are achieving the desired objective.
- Crop rotation shall include at least 60% high residue crops. For the purpose of this enhancement, cover crop is considered a different crop. **(See MT Agronomy Tech Note 94, Conservation Crop Rotation, for a list of high residue crops).**
- Cover crop and crop residue shall not be burned, harvested, or removed in the enhancement acres.
- No full-width tillage or summer fallow allowed in the enhancement acres.
- Where the soil salinity limits or prohibits commodity crop growth, fertilizer applications should be reduced accordingly.
- Select species that are compatible with other components of the cropping system.
- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/ site conditions. **(See MT Cover Crop 340 Implementation Requirement and Plant Materials Technical Note 26, Plants for Saline to Sodic Conditions in Montana and Wyoming for specific plant species and seeding rates. Note that seeding rates are 1.5x normal in a saline seep discharge area.)**
- Determine the method and timing of termination to meet the grower's objective and the current NRCS Cover Crop Termination Guidelines.
- Ensure herbicides used with crops are compatible with cover crop selections.

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Documentation and Implementation Requirements:

Participant will:

- □ Prior to implementation, identify salt affected fields and provide field specific information to aid in delineation of salt affected areas if desired.
- □ During implementation, notify NRCS of any planned changes to verify the planned system meets the enhancement criteria.
- □ After implementation, make documentation and records available for review by NRCS to verify implementation of the enhancement including:
  - Soil sample results,
  - Crop rotation planted, and
  - Cover crop species planted.

Planned Management Rotation Including Cover Crop

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date

Cover Crop Mix and Seeding Rate

Species	Variety	Seed Size	Typical Seeding Depth	Seeding Rate (PLS lbs/acre)	Percent of Mix (%)

Salinity Assessment

Field	Year 1 EC Assessment (Value)	Year 3 EC Assessment (Value)

Establishment and Management Considerations:

Task	Provide information and details
Seedbed Preparation	
Seeding Date	
Seeding Depth	
Seeding Method	
Fertilizer, as needed	
Weed Management, as needed	
Termination Date (window)	
Termination Method	

- **Refer to 610 Saline and Sodic Soil Management, Conservation Practice Standard and Implementation Requirement for MT, and Engineering Technical Note MT-19, Saline and Sodic Soil Management, for further guidance.**
- **Refer to "Final Study Report, Pheasants Forever Upland Gamebird Cover Crop Mixes for Salt-Affected Sites and Custom Warm Season Cover Crop Mixes for Salt-Affected Sites" (usda.gov) for a study report on using cover crop mixes in saline soil. Note that selection of saline-tolerant species is more important than a diverse mixture for cover crop success in saline sites.**

NRCS will:

- □ As needed, provide technical assistance to meet the criteria of the enhancement.
- □ After implementation, review documentation and records to verify implementation of the enhancement.

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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.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

_____ _____

NRCS Technical Adequacy Signature Date

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