United States Department of Agriculture

CONSERVATION ENHANCEMENT ACTIVITY

E340J

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.

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- 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 STATE 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 (REFER TO STATE SPECIFIC LISTS).
- 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	

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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.

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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IDAHO SUPPLEMENT TO

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Addtional Documentation Requirements

- 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. For an Idaho state specific cover crop list and local establishment/ management details <See Idaho Plant Materials Technical Note #67 and #24>. TN #67 and #24 can be found in section 1 of the Idaho Field Office Technical Guide (eFOTG).

- A cover crop selection tool was developed by the NRCS (West National Technology and Support Center) WNTSC. The cover crop selection tool was developed to assist conservation planners in determining what cover crops will meet the client's resource management objectives, and are adapted and suited to the site. This cover crop selection tool may be used to assist you in choosing appropriate cover crops that will meet the intended use and practice purpose. The cover crop selection tool can be found in NRCS WNTSC Technical Note #2 and can be found at: https://www.nrcs.usda.gov/plant-materials/pacific-northwest-cover-crop-selection-tool

- Implementation of this enhancement must meet all "general criteria" and "additional criteria related to the applicable practice purpose" listed in the NRCS conservation practice standard for the cover crop (340) practice.

- Planning and Certification of this enhancement will be documented using the Idaho Cover Crop Design Worksheet. This worksheet can be found in section IV of the Field Office Technical Guide along with the conservation practice standard for Cover Crop (340).

HIGH RESIDUE CROPS
High residue crops are defined as: All annual cool season small grain and grass crops where residue following harvest is not removed. This includes cool season spring and winter varieties of wheat, triticale, rye, barley, and oats. AND: All annual warm season grass crops where residue following harvest is not removed. This includes millet, sorghum, sudan, teff, field corn, and sweet corn. AND: Any perennial broadleaf or grass (excluding orchard or vineyard crops) where the above ground biomass remains on the field and is not removed. This includes alfalfa seed, bluegrass seed, ryegrass seed, and fescue seed. AND: Any cover crop where the residue has not been removed.