



**CONSERVATION ENHANCEMENT ACTIVITY**

**E512C**

**CONSERVATION STEWARDSHIP PROGRAM**

**Cropland conversion to grass for soil organic matter improvement**

**Conservation Practice 512 - Forage and Biomass Planting**

**APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial)**

**RESOURCE CONCERN: Soil**

**ENHANCEMENT LIFE SPAN: 5 years**

**Enhancement Description**

Conversion of cropped land to grass-based agriculture. Mixtures of perennial grasses, forbs, and/or legume species are established on cropland where annually-seeded cash crops have been grown.

**Criteria**

- The current NRCS wind and water erosion prediction technologies must be used to document the average annual soil erosion estimates and soil conditioning index improvements.
- Establish perennial grassland mixture on cropland. Select deep-rooted perennial species that provide adequate kinds and amount of plant materials needed to increase soil organic matter. Mixtures shall be selected based on:
  - Minimum of 50% grass species.
  - Must contain at least one legume.
  - Climatic conditions, such as annual precipitation and its distribution, growing season length, temperature extremes and the USDA Plant Hardiness Zone.
  - Soil condition and landscape position attributes such as; pH, available water holding capacity, aspect, slope, drainage class, fertility level, salinity, depth, flooding and ponding, and levels of phytotoxic elements that may be present.

E512C - Cropland conversion to grass for soil organic matter improvement	July 2019	Page   1
--	-----------	----------



# CONSERVATION STEWARDSHIP PROGRAM

- Resistance to disease and insects common to the site or location.
  - Intended use, level of management, realistic yield estimates, maturity stage, and compatibility with other species. Verify plant adaptation to the area prior to planting.
- Follow state specific recommendations for planting rates, methods and dates. Seeding rates will be calculated on a pure live seed (PLS) basis. Plant at a depth appropriate for the seed size or plant material, while assuring uniform contact with soil.
  - Prepare the site to provide a medium that does not restrict plant emergence.
  - Plant when soil moisture is adequate for germination and establishment.
  - All seed and planting materials must meet state quality standards.
  - Do not plant federal, state, or local noxious species.
  - Apply all plant nutrients and/or soil amendments for establishment purposes according to a current soil test and developed specifications.
  - When planting legumes, use pre-inoculated seed or inoculate with the proper viable strain of Rhizobia immediately before planting.
  - Exclude livestock until the plants are well established.

**Additional criteria when livestock are included in the system:**

- Grazing plan must be developed to keep grazing period(s) sufficiently short to allow for plants to recover before re-grazing occurs.
- No more than 20% of the mixture may be alfalfa. Other legumes (especially non-bloating species) may be used in place of or in addition to alfalfa up to a maximum legume percentage of 50%.
- In areas where animals congregate, establish persistent species than can tolerate close grazing and trampling.

E512C - Cropland conversion to grass for soil organic matter improvement	July 2019	Page   2
--	-----------	----------



# CONSERVATION STEWARDSHIP PROGRAM

## Documentation and Implementation Requirements

Participant will:

- Prior to implementation, select a perennial grassland mixture for establishment. Verify the mixture contains at least one legume. *If livestock are included in the system, no more than 20% of the mixture may be alfalfa. (NRCS will provide technical assistance, as needed.) If livestock are included in the system, in areas where animals congregate, establish persistent species than can tolerate close grazing and trampling.*

Species	Species type (grass, legume, broadleaf)

- Prior to implementation, select planting technique, seeding rates, and timing appropriate for the site and soil conditions. (NRCS will provide technical assistance, as needed.)

Planting Date	
Planting Technique	
Seeding rates	

- If livestock are included in the system, during implementation following establishment, a grazing plan must be developed to keep grazing periods sufficiently short to allow for plants to recover before re-grazing occurs.*
- During implementation, keep the following documentation:
  - Records and photographs of planting preparation and any materials purchased or materials on hand used for the implementation of the enhancement.
  - Documentation of seed (Pure Live Seed) and any fertilizer or soil amendments used for the implementation of the enhancement.
  - If livestock are included in the system, keep documentation and photographs of turn in/turn out grazing records for each field.*
- After implementation, make documentation and records available for review by NRCS to verify implementation of the enhancement.



## CONSERVATION STEWARDSHIP PROGRAM

NRCS will:

- As needed, provide technical assistance to meet the criteria of the enhancement.
- Prior to implementation, use selected mixture and site information to calculate the soil loss and the Soil Condition Index (SCI) values using current NRCS wind and water erosion prediction technologies. **Soil erosion = \_\_\_\_\_ t/ac/year and SCI value = \_\_\_\_\_**
- Prior to implementation, verify the enhancement is planned for cropland.
- Prior to implementation, verify the selected perennial grassland mixture includes a minimum of 50% grass species. *If livestock are included in the system, no more than 20% of the mixture may be alfalfa. If livestock are included in the system, in areas where animals congregate, establish persistent species than can tolerate close grazing and trampling.*
- As needed, prior to implementation, NRCS will provide technical assistance:
  - Planning site preparation and establishment specifications meeting NRCS Conservation Practice Standard Forage and Biomass Planting (512).
  - Preparing specifications for applying this enhancement for each site using approved specification sheets, job sheets, technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
- Prior to implementation, verify the enhancement is planned for cropland.
- During implementation, evaluate any planned changes to verify they meet the enhancement criteria.
- If livestock are included in the system, verify during implementation following establishment, that a grazing plan is developed to keep grazing periods sufficiently short to allow for plants to recover before re-grazing occurs.*
- After implementation, verify the planned perennial grassland mixture was established to specifications developed for the site.



**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.

**CONSERVATION  
STEWARDSHIP  
PROGRAM**

Participant Name \_\_\_\_\_ Contract Number \_\_\_\_\_

Total Amount Applied \_\_\_\_\_ Fiscal Year Completed \_\_\_\_\_

\_\_\_\_\_  
NRCS Technical Adequacy Signature

\_\_\_\_\_  
Date



E512C - Cropland conversion to grass for soil organic matter improvement	July 2019	Page   5
--	-----------	----------



IOWA SUPPLEMENT TO  
CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION  
STEWARDSHIP  
PROGRAM

E512C

Cropland conversion to grass for soil organic matter improvement

**Additional Criteria for Iowa**

- For this enhancement, the following table differentiates deep rooted perennials listed in Iowa Agronomy Tech Note 34.

<b><u>Deep rooted perennials</u></b>	
Alfalfa	Alsike Clover
Kura Clover	Red Clover
Sweet Clover	Canada Wildrye
Intermediate Wheatgrass	Meadow Brome
Meadow Fescue	Perennial Ryegrass
Smooth brome grass	Tall Fescue
Timothy	Big Bluestem
Eastern Gamagrass	Indiangrass
Little Bluestem	Red Top
Sideoats Grama	Switchgrass

<b><u>Not deep rooted</u></b>
Birdsfoot Trefoil
Crown Vetch
White (Ladino) Clover
Kentucky Bluegrass
Orchard grass
Reed Canary grass

**For other considered species, contact Area Livestock Specialist or ARC**

- Plant nutrients and soil amendments for stand establishment will be based on a current soil test and follow Iowa State University Extension Publication [PM1688](#).
- Use Agronomy Tech Note 34 to develop a seeding plan documented on IA-CPA-4 or in the national enhancement participant documentation section.
- Livestock Exclusion is required until plants are well established. Refer to Prescribed Grazing Job Sheet Table 1 Grazing Management and exclude livestock until the seeded species reach the minimum vegetative growth to begin grazing.
- The seed mix for animal congregation areas should include tolerant grasses such as Tall Fescue, Smooth Brome, or Kentucky Bluegrass and tolerant legumes such as White (Ladino) Clover or Red Clover. This will be different than the seed mix for the rest of the enhancement area.