

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**COVER CROP**

(Ac.)

**CODE 340**

**DEFINITION**

Crops including grasses, legumes, and forbs, for seasonal cover and other conservation purposes.

**PURPOSE**

- Reduce erosion from wind and water.
- Increase soil organic matter content.
- Capture and recycle or redistribute nutrients in the soil profile.
- Promote biological nitrogen fixation.
- Increase biodiversity.
- Weed suppression.
- Soil moisture management.
- Reduce particulate emissions into the atmosphere.
- Provide improved wildlife habitat
- Minimize and reduce soil compaction.

**CONDITIONS WHERE PRACTICE APPLIES**

On all lands requiring vegetative cover for natural resource protection, improvement, and/or other purposes as listed above.

**CRITERIA**

**General Criteria Applicable to All Purposes**

Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, and planting methods will be consistent with approved local criteria and site conditions.

The species selected will be compatible with

the nutrient management (590) and pest management (595) provisions of the plan.

Cover crops will be terminated by harvest, frost, mowing, tillage, crimping, and/or herbicides in preparation for the following crop.

Herbicides used with cover crops will be compatible with the following crop

Cover crop residue will not be burned

**Additional Criteria to Reduce Erosion from Wind and Water**

Cover crop establishment, in conjunction with other practices, will be timed so that the soil will be adequately protected during the critical erosion period(s).

Plants selected for cover crops will have the physical characteristics necessary to provide adequate protection.

The amount of surface and/or canopy cover needed from the cover crop shall be determined using current erosion prediction technology.

**Additional Criteria to Increase Soil Organic Matter Content**

Cover crop species will be selected on the basis of producing high volumes of organic material and/or root mass to maintain or improve soil organic matter. Cover crops are used in conjunction with residue management (329, 345, and 346) or long-term no-till (778) to produce adequate amounts of residue to increase soil organic matter.

The NRCS Soil Conditioning Index (SCI) procedure will be used to determine the amount of biomass required to have a positive trend.

The cover crop will be terminated as late as feasible to maximize plant biomass production, considering the time needed to prepare the field for planting the next crop.

**Additional Criteria to Capture and Recycle Excess Nutrients in the Soil Profile**

Cover crops will be established and be actively growing before expected periods of high precipitation that can cause nutrient leaching.

Cover crop species will be selected for their ability to absorb large amounts of nutrients from the rooting profile of the soil.

Cover crop will be killed prior to reaching the reproductive stage when used to redistribute nutrients from the surface to deeper in the profile.

**Additional Criteria to Promote Biological Nitrogen Fixation**

Only legumes or legume grass mixtures will be established as cover crops.

The specific Rhizobium bacteria for the selected legume will either be present in the soil or the seed will be inoculated at the time of planting.

**Additional Criteria to Increase Biodiversity**

Cover crop species shall be selected that have different maturity dates, attract beneficial insects, increase soil biological diversity, serve as a trap crop for damaging insects, and/or provide food and cover for wildlife habitat management.

**Additional Criteria for Weed Suppression**

Species for the cover crop will be selected for their chemical or physical characteristics to suppress or compete with weeds.

Cover crops residues will be left on the soil surface to maximize allelopathic (chemical) and mulching (physical) effects.

For long-term weed suppression, perennials and/or biennial species can be used.

**Additional Criteria for Soil Moisture Management**

Terminate growth of the cover crop sufficiently early to conserve soil moisture for the subsequent crop. Cover crops established for

moisture conservation shall be left on the soil surface.

In areas of potential excess soil moisture, allow the cover crop to grow as long as possible to optimize soil moisture removal.

**Additional Criteria to Reduce Particulate Emissions into the Atmosphere**

Manage Cover crops and their residues so that at least 80% ground cover is maintained during planting operations for the following crop.

**Additional Criteria to Provide Improved Wildlife Habitat**

Select cover crop species that provide suitable food and cover conditions.

Timing of management activities should minimize adverse impacts on feeding and nesting needs.

**Additional Criteria to Minimize and Reduce Soil Compaction**

Select and manage cover crop species that will produce deep roots and large amounts of surface or root biomass to increase soil organic matter, improve soil structure, and increase soil moisture through better infiltration thus decreasing soil strength.

**CONSIDERATIONS**

Plant cover crop in a timely matter to establish a good stand.

Maintain an actively growing cover crop as late as feasible to maximize plant growth, allowing time to prepare the field for the next crop. Use deep-rooted species to maximize nutrient recovery.

Consider that grasses utilize more soil nitrogen, and legumes utilize both nitrogen and phosphorus.

Avoid cover crop species that attract potentially damaging insects.

Avoid using invasive species.

For most purposes for which cover crops are established, the combined canopy and surface cover is at nearly 90 percent or greater, and

the above ground (dry weight) biomass production is at least 4,000 lbs/acre.

Cover crops may be used to improve site conditions for establishment of perennial species.

Consider using plant species that enhance biomass collection opportunities.

### **PLANS AND SPECIFICATIONS**

Plans and specifications will be prepared for the practice site. Plans for the establishment of cover crops shall include:

- Specie or species of plants to be established.
- Seeding rates.
- Recommended seeding dates.
- Establishment procedure.

- Planned rates and timing of nutrient application.
- Planned dates for destroying cover crop.
- Other information pertinent to establishing and managing the cover crop.

Plans and specifications for the establishment and management of cover crops may be recorded in narrative form, on job sheets, or on other forms.

### **OPERATION AND MAINTENANCE**

Achieve vigorous growth of the cover crop to reduce competition from volunteer plants and shading.

Control weeds in cover crops by mowing or by using other pest management techniques.