

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

COVER CROP
 (acre)
CODE 340

DEFINITION

Grasses, legumes, forbs, or other herbaceous plants established for seasonal cover and conservation purposes.

PURPOSES

- Reduce erosion from wind and water
- Increase soil organic matter
- Manage excess nutrients in the soil profile
- Promote biological nitrogen fixation
- Increase biodiversity
- Weed suppression
- Provide supplemental forage
- Soil moisture management

CONDITIONS WHERE PRACTICE APPLIES

On all lands requiring vegetative cover for natural resource protection.

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 and pest management provisions of the plan.

Cover crops will be terminated by harvest, mowing, tillage, 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 Promote Biological Nitrogen Fixation

The specific Rhizobia bacteria will either be present in the soil or the seed will be inoculated at the time of planting legumes.

Nitrogen credits from legume cover crops will be accounted for in the nutrient management plan.

Additional Criteria to Manage Excess Nutrients in the Soil Profile

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

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

The aboveground biomass will be removed from the field for maximum nutrient removal efficiency.

Additional Criteria to Increase Soil Organic Matter

Cover crop species will be selected on the basis of producing high volumes of organic material to maintain or improve soil organic matter.

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

The cover crop will be terminated as late as feasible to maximize plant biomass and still prepare the seedbed for the subsequent crop.

Additional Criteria to Increase Biodiversity

Cover crop species shall be selected that, have different maturity dates, attract beneficial insects, 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 competition 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 to Provide Supplemental Forage

Species selected will have desired forage traits, be palatable to livestock, and not interfere with the production of the subsequent crop.

Forage provided by the cover crop may be hayed or grazed as long as sufficient biomass is left for resource protection.

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 until the subsequent crop is planted.

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

CONSIDERATIONS

The cover crop should be terminated as late as feasible to maximize plant growth and still prepare the seedbed for the subsequent crop.

Deep-rooted species provide maximum 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.

Acceptable benefits, for most purposes, are usually accomplished when the plant density is at least 25 stems per feet, the combined canopy and surface cover is at least 60 percent, and the above ground (dry weight) biomass production is at least 2700 lb/acre.

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

PLANS AND SPECIFICATIONS

Site-specific specifications which document the requirements for installing, operating and maintaining this practice on a particular site to achieve its intended purpose shall be prepared in accordance with this standard and the practice specification.

The site-specific specifications shall be documented on the NRCS Hawaii Jobsheet for this practice and given to the client. Other documents such as practice worksheets, maps, drawings, and narrative statements in the conservation plan may be used to plan or design the practice and to prepare the site-specific specifications.

Site-specific specifications shall include, but are not limited to, recommended species, seeding rates and dates, establishment methods, nutrients needed, and other establishment information.

OPERATION AND MAINTENANCE

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

Control weeds in the cover crop by mowing or herbicide application.