

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE GENERAL SPECIFICATIONS**

COVER CROP

(Acre)
CODE 340

DEFINITION

A crop of close-grown grasses, legumes, or small grain grown primarily for seasonal protection and soil improvement. This crop is usually grown for one year or less except where there is a need for continual cover as in orchards.

When possible, apply the inoculum within 24 hours prior to seeding.

Seed must be clean and relatively free of weed seed and other contaminants. Seed that has become set, moldy, or otherwise damaged in transit or storage is not acceptable.

PURPOSES

This practice may be applied as part of a conservation management system to accomplish one or more of the following purposes:

- * Control soil erosion by wind or water during periods when crops or residue cover do not furnish adequate protection.
- * Add organic material to the soil.
- * Improve infiltration, aeration, and soil tilth.
- * Provide food and cover for wildlife.

Plant cover crops seeds at proper depth for fast emergence. The proper depth is 1/4 to 1/2 inches deep for legumes and grasses such as annual ryegrass and up to 1 and 1/2 inches for cereal grains. If the seed is applied by a broadcast method, the area will be rolled or culti-packed immediately after seeding on a prepared seedbed only. If the seed is broadcast into heavy residue or a growing crop, the seeding rate will be increased by 50 percent and rolling or culti-packing are not required.

Herbicide carryover may restrict the use of some plant species for the intended use. Refer to Crop Replant and Rotation Guides in UMC Publication MP-575, "Weed Control Guide for Missouri Field Crops" to identify problem herbicides and select a cover and green manure crop species accordingly.

CONDITIONS WHERE PRACTICE APPLIES

On cropland and associated land uses where temporary cover is desired; certain recreational and wildlife areas; and orchard, vineyard, and small fruit areas.

Do not incorporate the cover and green manure crop prior to one month before planting the next crop. If the next crop is to be planted with no-till operations, control the cover and green manure crop with herbicides to eliminate competition while maintaining the benefits of surface residue for erosion control.

CRITERIA

General Criteria Applicable to All Purposes

Legume seed will be inoculated with the proper, viable Rhizobium bacteria prior to planting. Rhizobium strains are specific to a group of legumes or a specific legume species such as birdsfoot trefoil and crownvetch. Select and use the proper inoculum for the species to be planted.

Winter Cover and/or Green Manure following Row Crop Production

If seeding the cover crop prior to harvest of the primary crop, select an appropriate plant species and seeding rate from Table I. Broadcast the seed by a method that allows for good coverage of the

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area and does the least amount of crop damage to the standing crop. Seeding dates should be from August 15 to September 15 or prior to leaf drop of the primary crop. No seedbed preparation is necessary.

If seeding the cover crop after harvest of the primary crop, select plant species, seeding rate, seeding dates, and planting method from Table I. Seed may be planted either no-till or broadcast into existing residue cover.

Summer Cover and/or Green Manure Crops

Select seeding mixture, seeding rates and planting dates from Table II of this standard. Select species that provide desired benefits as a nurse crop, temporary cover, and/or green manure crop.

Prepare the seedbed for planting the cover crop. If the site is currently producing crops, site preparation may not be necessary. If the site is to be seeded to temporary cover to stabilize the soil resource, site preparation, seedbed preparation, and seeding shall meet the requirements of the CRITICAL AREA PLANTING(342) standard.

Seed may be planted at the proper depth either no-till or following light tillage operations.

Cover Crops for Orchards, Vineyards, and Nurseries

Apply fertilizer and lime according to a current soil test to meet needs of the cover crop. Incorporate the soil amendments to a depth of three inches while preparing a suitable seedbed.

Plant either winter rye, winter triticale, or winter wheat. Planting dates will be from August 1 through October 15 in northern Missouri and August 15 through November 1 in southern Missouri.

Additional Criteria to Control Erosion during Periods when Crops or Vegetative Cover do not Furnish Adequate Protection

Temporary protection of critical eroding sites may be obtained by planting a cover crop. Grass or grain crops such as spring oats, winter wheat, winter rye, winter triticale, Sudan grass, and annual ryegrass provide excellent canopy and ground cover for erosion reduction.

If the site is to be seeded to a permanent cover, select a temporary cover crop that can be managed to improve site conditions for the planned cover.

Winter rye, winter triticale, and winter wheat are vigorous, competitive cover. These species overwinter and require herbicides or tillage to kill them prior to seed set.

Spring oats, Sudan grass, and annual ryegrass will winterkill. Time the planting of these cover crops to reduce the need for mowing or clipping.

CONSIDERATIONS

Cover crops decrease runoff and increase infiltration. The increase in organic matter will normally increase water holding capacity.

Cover crops may affect the available soil moisture. Growing cover crops may be used to remove excess soil moisture in the spring. Cover crops allowed to grow too long in the spring may deplete soil moisture needed for establishing the primary crop. Cover crops should be killed two or more weeks prior to planting the primary crop.

Grasses including the cereal grains are more winter-hardy than legume crops and should be used for fall plantings. Grasses are competitive and generally require a higher level of management.

Legumes although less winter-hardy provide benefits over grasses. The carbon-nitrogen ratio of legume residue is less than grasses and breaks down faster. Since legumes are capable of nitrogen fixation, some benefit of "free" nitrogen may occur.

The maximum benefit of legumes is obtained if seeded early enough to grow prior to the on-set of cold weather. Legumes are ideal to plant after the harvest of winter wheat.

Allelopathy effects have been documented with certain cereal grains. These crops produce chemical substances that inhibit the growth or establishment of following crops. Light tillage is often used to reduce allelopathy.

Incorporation of the cover crop is not necessary. Incorporation will speed-up the recovery of nitrogen,

offer weed control options, or improve stand establishment. Incorporation also removes or reduces surface residue and increases the potential for soil erosion. Tillage will also stimulate emergence of weed seedlings.

Grazing is a management tool that may be used to improve nutrient cycling particularly with cereal grains. Grazing may also be used to manage residue prior to planting the next crop.

PLANS AND SPECIFICATIONS

Site specifications for establishment and maintenance of this practice shall be prepared for each field or treatment unit according to the Criteria, Considerations, and Operation and Maintenance described in this standard.

Site specifications shall be recorded using approved specification sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

Prevent the cover crop from producing viable seed by mowing, cutting for hay or silage, grazing, or applying selective herbicides. Do not harvest below an 8 inch stubble height.

Delayed planting of spring crops is not recommended. The cover crop should be controlled at least two weeks prior to the normal planting date of the next crop.