NATURAL RESOURCES CONSERVATION SERVICE
MONTANA CONSERVATION PRACTICE SPECIFICATION

COVER CROP (ACRE)

CODE 340

PRODUCER	TRACT / FIELD NUMBER / CTU	ACRES

SCOPE: Cover Crops are grown to protect and improve the soil. Cover crops can improve soil tilth, control erosion and weeds, as a secondary benefit provide supplemental forage, and maintain or improve organic matter. They can reduce compaction and increase water infiltration which decreases leaching of nutrients. Cover crops retain and recycle plant nutrients, provide habitat for beneficial microorganisms, and increase plant diversity. This specification provides guidelines for establishment and maintenance of cover crops.

Cover crops are annually seeded primarily to protect and improve the soil resource, not to harvest except as a secondary forage resource when abundant vegetation allows for a small amount of grazing or haying. Cover crops also retain and recycle plant nutrients, especially nitrogen, provide habitat beneficial to microorganisms and wildlife, and increase plant diversity.

There are many ways to use cover crops in a production cycle including

- As a companion crop or living mulch. The cover is planted between rows of a cash crop.
- As a “catch” crop for nutrients, planted after harvest of the main crop or between the rows of the cash crop to reduce leaching of nutrients.
- As an off-season crop grown to protect the soil during critical erosion periods.
- As an off-season crop grown to add soil nutrients and organic matter to the soil for subsequent crops

Cover crops must be correctly selected and managed. There are many possible cover crops, each differing in potential benefits and in adaptability to particular climates and rotational schemes. The most commonly used cover crops are **annual** grasses and legumes. Perennial species may be seeded, but are required to be utilized as an annual, i.e. green manure crop, or plow down after critical erosion period.

When managing for soil nutrient additions, the best time to incorporate leguminous cover crops is the period just before or at full bloom. This ensures decomposition and nutrient release over a longer period of time (versus termination prior to bloom). To eliminate potential insect of disease infestations associated with growing green tissue (the green bridge) cover crops should be terminated at least two-three weeks prior to planting the next crop.

Weeds are suppressed with cover crops during germination and establishment, while the cover is growing, and following desiccation and termination. Cover such as small grains that germinate and emerge quickly before weeds grow will suppress the greatest percentage of weeds. Mixtures of cereals and legumes will reduce weed growth and potential infestations more effectively compared to legumes alone.

The time of planting somewhat defines the choice of cover crops. For example, buckwheat is killed by light frosts and can only be planted in the summer. Brassicas and spring grains are all killed during winter. Grains and grasses can all be planted in late summer to early fall (if adequate moisture is available). This will allow enough time to grow and take up nutrients, but not enough time to set seed. Fall rye can be planted into the autumn.

The following is a list of effective cover crops and their associated seeding rates.

TABLE 1. **Cover Crop Seeding Rates**[1]

SPECIES	DRILLED SEEDING RATES (LBS/AC PLS) DRYLAND	IRRIGATED
SMALL GRAINS		
Barley	15	20
Oats	20	30
Winter Wheat	20	30
Rye	10	15
ANNUAL GRASSES		
Sudangrass	10	15
Foxtail millet	7	12
Sorghum	10	20
Annual Ryegrass	20	25
Fall Cereal Rye	25	35
LEGUMES		
Alfalfa[2]	5	6
Lentils	15	20
Austrian Winter Peas	20	30
Sweet Clover	5	8
Faba beans	25	35
Red Clover	4	6
Hairy Vetch	30	40
OTHERS		
Buckwheat	15	20

[1] Cover crop species can have a wide range of seeding dates ranging from spring to fall depending on specific use and climatic conditions. Generally soil moisture must be apparent within the top 2 inches of soil to ensure planting success. (See FOTG Standard 512–Pasture/Hayland Planting).

[2] **Alfalfa species designed for annual growth only.**

PLANTING METHODS:

Plant grass and/or legume cover crops no more than 3/8 inch deep uniformly over entire area. Crops should be planted at depths appropriate for the specific species. Establish stand of vegetation according to recommended seeding rates (see Table 1). Control pests according to 595 Pest Management (595) Standard.

OPERATION & MAINTENANCE:

Perform all seedbed preparation and planting operations in a manner that will minimize erosion until cover establishment. Control weeds in the cover crop by mowing or herbicide application. Annually terminate cover crop as late as possible in summer or fall to maximize plant growth while retaining adequate soil moisture for the subsequent crop. To avoid potential insect or disease infestations associated with green tissue, terminate cover crop at least two to three weeks prior to planting the next crop.

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