

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION GUIDE SHEET**

COVER CROP

**(ac.)
CODE 340**

Guidelines Applicable for All Purposes

The selected plant species must be adapted to the climatic region, the soil resource and compatible with the intended purpose as well as other land user objectives. Adapted crops and varieties listed in appropriate South Dakota State University (SDSU) publications or South Dakota Range Technical Note No. 4 shall be selected. Refer to locally accepted University or extension agronomy guides, or other accepted technical references for criteria to establish herbaceous vegetation.

Plant species, seeding rates, seeding dates, and planting depth are listed in Table 1 (see page 3 of this standard). The seeding rates in Table 1 represent the minimum seeding rates for proper seed placement with good soil to seed contact. If broadcasting seed increase seeding rates by multiplying the listed PLS seeding rate by 2.5.

The selected plant species should have a minimal potential to act as a host in pest cycles for adjacent crops as well as for the next crop in the rotation.

No plants listed on the statewide or local noxious weed list shall be allowed to establish. The land user shall take reasonable measures to control or eradicate any noxious weeds in the field.

Additional Guidelines To Reduce Erosion From Wind And Water

Cover crops shall be selected that produce biomass in amounts adequate, and at the appropriate time, to control erosion to within the soil loss tolerance (T) or other planned soil loss objective.

The amount of biomass needed shall be determined using current approved wind erosion prediction technology. Calculations shall account for the effects of other practices in the conservation management system.

Additional Criteria to Sequester Carbon in Plant Biomass, in the Soil, and to Increase Soil Organic Matter Content.

Crops shall be selected that produce the amount of plant biomass needed to maintain or improve soil organic matter content, as determined using the current approved NRCS Soil Conditioning Index Procedure (SCI), or determined by approved research.

The seeding rates in Table 1 represent the minimum seeding rates for proper seed placement with good soil to seed contact. For the production of maximum biomass increase seeding rates in Table 1 by multiplying the listed PLS seeding rate by 2.5. Do not increase this seeding rate for broadcast seeding.

If partial removal of the cover crop by means such as baling or grazing occurs, enough residue shall be maintained to achieve a positive SCI value.

Eliminate or substantially reduce the number of tillage operations to reduce organic matter oxidation.

CONSIDERATIONS

Consider herbicide tolerance in plant species selection. Herbicide tolerance considerations include carryover concerns as well as tolerance to in crop applications. (An example of proper species selection would be to select atrazine tolerant species if atrazine has been applied to the field.)

When cover crops are used in combination with residue management practices, selection of high residue producing crops and varieties, and adjustment of plant population and row spacing can enhance production of the kind, amount, color, and distribution of residue needed.

Where maintaining or improving soil organic matter content is an objective, the effects of this practice can be enhanced by managing crop residues, tillage practices, utilizing animal wastes, or applying mulches to supplement the biomass produced by crops in the rotation.

Where excess plant nutrients or soil contaminants are a concern, utilizing deep rooted crops or cover crops in the rotation can help recover or remove the nutrient or contaminant from the soil profile.

Legumes cover crops may produce sufficient nitrogen to be credited for subsequent crops.

Where precipitation is limited, seasonal or erratic moisture can be conserved for crop use by terminating the cover crop. Maintaining crop residues on the soil surface will increase infiltration, as well as, reduce runoff and evaporation.

Where winter precipitation occurs as snow, additional moisture can be obtained for crop use by trapping snow with standing cover crop residue.

Where improving water use efficiency on deep soils is a concern, rotating or combining deep-rooted crops with shallow rooted crops can help utilize all available water in the soil profile.

Crop damage by wind erosion can be reduced by this practice by intercropping selected cover crops that are tolerant to abrasion from wind blown soil or tolerant to high wind velocity (See South Dakota Technical Guide, Section 1, Erosion Prediction, Wind Erosion). If crops sensitive to wind erosion damage are grown, the potential for plant damage can be reduced by additional practices such as crop residue management, field windbreaks, herbaceous wind barriers, trap strips, or other methods of wind erosion control.

The cover crop should be terminated with tillage or herbicides when the maximum biomass has been accumulated or when the planned purpose has been accomplished.

OPERATIONS AND MAINTENANCE

Haying or grazing should be managed so that if partial removal of the cover crop by means such as baling or grazing occurs, enough residue shall be maintained to achieve the desired purpose.

Fertility management should be accomplished according to SDSU recommendations.

Acceptable substitute cover crops are those having similar properties that meet the criteria for all the resource concerns identified for the field or treatment unit.

In areas where summer fallow is practiced, the decision to plant a crop or fallow shall be made annually based on soil moisture at planting time. Fields shall be fallowed only when soil moisture is not adequate to produce a crop. If moisture supply is adequate but limited, short-season shallow rooted crops or cover crops shall be selected and grown. Deep-rooted crops shall follow shallow rooted crops in subsequent years, if needed, to utilize all plant available water in the root zone.

TABLE 1 – SEEDING COMPOSITION RATES

All Technical Guide Areas

COOL SEASON - GRASSES	MIN. PLS LBS./AC ^{1/}
Barley	60
Oats	70
Spring Wheat or Spring Rye	100
Winter Wheat or Rye	100
Triticale	100
Tall Wheatgrass	13
Annual Oregon ryegrass	15
 WARM SEASON - GRASSES	
grain and forage sorghum	10
Millet (all)	30
Sudangrass and sorghum-sudan hybrids	25*
Teff grass	5
Corn	same as spring planting rate for the area
 COOL SEASON - Broadleaves	
Alfalfa	6.5
Red Clover	5
Sweet Clover	4
Alsike Clover	3
White Clover	1.5
Hairy Vetch	15
Field Peas	90
Winter Canola or Winter Rape	5
Lentils	30
Buckwheat	50
Radish (Fodder)	10
Turnip	4
Sugar Beet	4
Crambe	15
Chickling vetch	70
Tame Yellow Mustard	12
Tame Brown/Oriental Mustard	6
Flax	20
 WARM SEASON - Broadleaves	
Cowpeas	30
Soybean	40
Sunflower	7

^{1/} **Seeding Rates**

Mixtures of one or more species is highly recommended for improved stand vigor. Mixture should include not less than 10 percent of any one individual species. When broadcasting seed increase seeding rates by multiplying the listed PLS seeding rate by 2.5

*Variable depending on seed size and row spacing.