

# COVER CROP

N. C. Practice Job Sheet 340

Prepared for: \_\_\_\_\_

Prepared by: \_\_\_\_\_

Farm: \_\_\_\_\_ Tract: \_\_\_\_\_ Date: \_\_\_\_\_



Thick cover of rye is rolled to terminate growth and to provide more ground cover for a no-till crop to follow.

## DEFINITION

A crop of close-growing grasses, legumes, or small grain grown primarily for seasonal protection and soil improvement.

## PURPOSE

To control erosion; add organic matter; improve infiltration, aeration, and tilth; scavenge and cycle plant nutrients; improve soil quality; improve water quality conserve soil moisture; and sequester carbon.

## CRITERIA

Proper use and management are essential to achieve the purposes of this practice. Diversity of plant types encourage diversity in soil biology, which affects soil physical, chemical, and biological properties. The stage of maturity of the cover crop at termination will also affect these properties.

### A. Seedbed Preparation

1. Seedbed preparation may be done by any suitable implement or method.
2. Seedbed preparation may be eliminated when seeds are flown on; planted by conservation tillage methods; or when a harvesting procedure will cover the seeds, as shown below.



### B. Lime and Fertilization

1. Lime is generally applied for the regular crops. Incorporation is not always needed in long-term no-till. Soil test for recommended rates.
2. Sufficient fertility to insure adequate establishment and plant growth must be present at planting time or applied as a topdressing.

### C. Planting Rates and Dates

1. The rates and dates indicated in the attached Planting Guide are intended as a guide only. Local conditions may justify some variances. The higher rates should be used with broadcast methods.

Cover crops are essential to follow low-residue crops. When left to near-maturity, organic matter can be increased, which has a very beneficial effect on soil biological, chemical, and physical properties. Very little benefit is achieved in early termination.



Compare both top and root growth. Plant at left was not fertilized. Studies have shown that good fertility is essential for small grain to scavenge nitrogen.

2. For maximum effectiveness, cover and green manure crops must be planted with seeding rates and during optimum dates.
3. Successful plantings are possible with surface seedings:
  - Seed broadcast at cotton/soybean defoliation/leaf drop.
  - Broadcast seed just prior to peanut harvest.
  - Overseed after corn harvest, then rotary mow the stubble.
  - Cotton stalk puller can cover seed.

Note: Rye has shown better success than other species with surface seedings. Dry weather at this time will affect results.

#### D. Plant Selection

There will be conditions and interest that will warrant the use of plants not listed. Their use should be evaluated for each site and purpose. Also, mixtures such as crimson clover/small grain or hairy vetch/small grain are desirable.

1. Select a suitable cover crop based upon climate during the period of use, soil capability, and objective for the cover crop.
2. Select cereal rye or triticale for nutrient scavenging during the cool growing season.

#### E. Termination of Growth

Stage of physiological maturity, not calendar dates, is the best guide to achieve optimal benefits. For grasses, leave until at least early boot stage; for legumes, at least until early flower.

#### F. Orchards, Vineyards, and Small Fruit Areas

1. Annual cover crops will be established and managed in accordance with guidelines above.
2. Perennial cover crops will be established and managed in accordance with the provisions of Standard and Specifications for Pasture and Hay Planting (Code 512) and Prescribed Grazing (Code 528A).

### OPERATION AND MAINTENANCE

Plant cover crops as soon as possible after harvest of the preceding crop. Later planting dates usually require later termination and/or reduced benefits.

Leave growing cover crop until 30 days before planting of the succeeding crop, or as stated above, according to need dictated by planting the succeeding crop. Cover crops may be incorporated into the soil by tillage or left on the surface for extended protection against erosion. Cover crops may be killed with a herbicide or with a roller/crimper for use as a component in a conservation tillage system.



### COVER CROP PLANTING GUIDE

Cover Crops	Planting Rates	Planting Dates	BioMass Produced
		1. Coastal Plains 2. Piedmont 3. Mountains	(lbs./ac.)
Annual Lespedezas <sup>1</sup>	20-40 lbs.	1. February 1 – March 15 2. February 1 – April 1 3. March 15 – April 15	2,500
Austrian Winter Pea <sup>4</sup>	30-40 lbs.	1. August 25 – October 25 2. August 25 – October 15 3. N/A	4,000
Barley	2-3 bu.	1. September 1 – October 15 2. August 20 – October 10 3. August 01 – October 10	4,000
Crimson Clover <sup>4</sup>	15-30 lbs.	1. Sept. 15 – November 15 2. Sept. 5 – November 5 3. Sept. 1 – November 1	4,000
Hairy Vetch <sup>5</sup>	30-40 lbs.	1. August 25 – October 25 2. August 25 – October 15 3. July 15 – August 30	5,000
Oats	3 bu.	1. September 1 – October 15 2. August 20 – October 10 4. August 1 – November 1	4,500
Pearl Millet <sup>3</sup>	6-10 lbs. in row; 20-25 lbs. drilled or broadcast	1. May 5 – July 5 2. April 25 – June 30 3. April 15 – June 30	6,000
Rye	2 bu.	1. Sept. 15 – November 1 2. Sept. 5 – November 1 3. August 15 – November 1	7,500
Ryegrass <sup>5</sup>	30-40 lbs.	1. Sept. 15 – November 15 2. Sept. 15 – November 1 3. Sept. 1 – November 1	7,000
Sorghum-Sudan Hybrids <sup>1,2</sup>	15-20 lbs. in row; 35-40 lbs. drilled or broadcast	1. May 5 – July 5 2. April 25 – June 30 3. April 15 – June 20	8,500
Triticale	1 ½ bu.	1. Sept. 15 – Nov. 30 2. Sept. 1 – Nov. 20 3. Aug. 20 – Oct. 20	6,000
Wheat	2-3 bu.	1. Oct. 25 – November 15 2. October 10 – November 1 3. October 1 – November 1	6,000

Other – Contact the Conservation Agronomist or Plant Materials Specialist for guidance.

<sup>1</sup> Tolerates fairly acid soil but performs best when a soil pH of 6.0 to 6.5 is maintained.

<sup>2</sup> Potential danger from prussic acid poison if plants are frosted, stunted or young growth is grazed. Do not allow horses to graze the green plants; apparently the hay may be used if properly cured.

<sup>3</sup> No problem with prussic acid.

<sup>4</sup> Inoculate seed.

<sup>5</sup> May at times become a pest since it volunteers readily. Herbicides can now be used effectively to reduce this problem.

<sup>6</sup> Mid range of production. Amounts will vary ± 50% depending on numerous factors. Top growth only.