



*Photo: Wheat cover crop planted to reduce soil erosion and nutrient leaching.*

**Introduction** Cover crops are considered the backbone of any annual cropping system. Cover crops capture and recycle nutrients, improve soil organic matter, reduce soil erosion from wind and water, help manage soil moisture, suppress weeds, improve infiltration, provide supplemental forage, reduce soil compaction, promote biological nitrogen fixation, reduce particulate matter, and increase biodiversity.

**Benefits of Winter Cover Crops** In Delaware, an important purpose of a winter annual cover crop planted in the late summer or early fall is to scavenge and recycle nutrients. For example, corn is inefficient at utilizing nitrogen fertilizer, so it is important to plan to scavenge the nitrogen that remains in the soil profile. In late August, the corn plant slows its uptake of nutrients, but the soil is still warm and the microbes are actively mineralizing nutrients. A cover crop planted immediately following corn harvest will capture a significant portion of the surplus nutrients, reducing the potential leaching to groundwater during the late fall and winter when evapo-transpiration (ET) rate has slowed.

In addition to nutrient uptake, winter cover crops also provide cover for the soil surface. This cover helps to protect the soil from the erosive effects of rainfall. It also slows surface runoff and allows for improved infiltration, resulting in reduced soil erosion.

Often a legume is added to a winter cover crop for the added benefit of nitrogen fixation. Hairy vetch and clovers can be mixed with a complementary winter grain such as cereal rye, barley, or wheat. In the spring when the cover is killed, the legume will supply nitrogen to the following crop.

The terminated cover crop will also help retain soil moisture due to its mulching and shading effect. This can help the summer crop to survive a short-term drought without severe moisture stress.

**Cover Crop Planted for Water Quality** When managing for nutrient uptake, consider winter hardy species like cereal rye, wheat, barley, and annual ryegrass. Plant as early as possible to maximize plant growth and nutrient uptake before the dormant season. Cereal rye planted before October 1<sup>st</sup> is the most beneficial species for nutrient uptake. Application of commercial fertilizers or animal manure is not allowed before planting. If the crop is to be terminated, delay termination until March 15<sup>th</sup>. Commercial fertilizer or animal manure applications may be applied according to a nutrient management plan after March 15<sup>th</sup> if the cover crop is to be harvested. Cover crops planted for EQIP cost share are not eligible to be harvested. If spring peas are to be planted, termination date and fertilization date is March 1<sup>st</sup>.

**Benefits of Summer Cover Crops** Summer annual cover crops like sorghum, sudangrass, and sorghum sudangrass (sorghum X sudangrass) hybrids have the ability to improve the soil tilth. Their above ground and root growth adds organic matter to the soil and helps to suppress weeds. If feed is needed for cattle, cut the forage sorghum X sudangrass hybrids between 24 inches of plant height and boot stage. In addition, they can provide wildlife food benefits for doves, turkey, and deer.

**Cover Crop Species, Seeding Rates, and Dates**

Refer to the Table 1 and 2 of the Delaware Conservation Practice Standard Cover Crop Code 340 for a list of acceptable species and recommended planting dates. Check with your dealer regarding actual seeding rates for broadcast or drilling the variety you purchase.

To determine how much seed to buy, divide the seeding rate by the percent germination on the seed tag. For example, a 40 lb. seeding rate divided by a 92%

germination rate  $(40 \div 0.92) = 43$  lbs. of seed needed per acre. Remember to inoculate legumes with the recommended Rhizobium bacteria.

When broadcast seeding without cultipacking, planting later than the ideal period, or planting in a rough seedbed, use the high end of the recommended seeding rate. If aerial seeding, increase the seeding rate by 30%.

*Note: Specific cost-sharing programs or other funding sources may dictate criteria in addition to, or more restrictive than, those specified in this job sheet.*

**Producer Purpose**

Capture and recycle nutrients  
  Increase soil organic matter  
  Reduce erosion  
  Minimize soil compaction  
  Biological nitrogen fixation  
  Provide supplemental forage  
  Suppress weeds  
  Increase biodiversity  
  Provide supplemental forage  
  Reduce particulate matter  
  manage soil moisture

**Implementation of the Plan: Record Keeping Required**

The following is the information that needs to be provided to NRCS to receive cost share:

1. Tract number

The following to be recorded by field:

2. Species or species of plants planted

3. Field number/s and acres planted

4. Seeding dates

5. Establishment method  
(conventional drill, no-till, broadcast with light incorporation, aerial)

6. Date and method cover crop was destroyed

**Certification**

Producer/Landowner Signature: \_\_\_\_\_ Date: \_\_\_\_\_

I certify that that this practice has been completed according to NRCS plans and specifications.

NRCS/District employee: \_\_\_\_\_ Date: \_\_\_\_\_