

October 2012



Wheat cover crop planted to reduce soil erosion and nutrient leaching, and to protect water quality.

Introduction. Cover crops are often considered to be the backbone of any annual cropping system. Cover crops capture and recycle nutrients, maintain or improve soil organic matter, reduce soil erosion from wind and water, conserve soil moisture in no-till systems, improve infiltration (thus reducing surface runoff), help to reduce insect and disease pressure, and help to repair soil compaction.

Benefits of Winter Cover Crops. In Maryland, an important purpose of a winter annual cover crop planted in the late summer or fall is to capture and recycle nutrients. For example, consider when a cover crop is planted following corn. In late August, the corn plant slows its uptake of nutrients. The soil is still warm and the microbes are still 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 the evapo-transpiration rate has slowed.

When managing for nutrient uptake, consider winter hardy species such as cereal rye, wheat, barley and annual ryegrass, and plant as early as possible to maximize plant growth and nutrient uptake before the dormant season. Apply no nitrogen or phosphorus fertilizer in the fall when planting. If the crop is to be terminated, delay termination until March 15.

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.

Benefits of Summer Cover Crops. Summer annual cover crops such as forage sorghums, sudangrasses, and sorghum-sudan hybrids have the ability to improve soil tilth. They have deep root systems that aid in breaking up hardpans. Their top and root growth adds organic matter to the soil, and they also help to suppress weeds. If feed is needed for cattle, cut the forage sorghums just prior to the seed head showing at the top of the plant. Grain sorghum and sunflowers are also deep-rooted summer annuals that can help break up hardpans. In addition, they can provide wildlife food benefits for doves, turkey, and deer.

Cover Crop Species, Seeding Rates and Dates. Refer to Table 1 of the Maryland NRCS Conservation Practice Standard 340 - Cover Crop for a list of acceptable species and recommended ranges of seeding rates and dates. Check with your seed dealer regarding actual seeding rates for broadcasting 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, or 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 50%.

Cover Crop – Practice Certification

Complete the following information to certify practice implementation OR complete the Maryland Department of Agriculture Winter Cover Crop Program Fall/Spring Certification sheet.

Producer: _____

Producer's Purpose(s)

- Reduce erosion (wind/water) Increase soil organic matter Capture/recycle nutrients in soil profile
 Promote biological nitrogen fixation and reduce energy Increase biodiversity Suppress weeds
 Manage soil moisture Minimize and reduce soil compaction Provide Supplemental Forage

Practice Specifications (Indicate product information below)

- Species to be planted: _____
- Tract number: _____ Field number (s): _____ Acreage: _____
 Tract number: _____ Field number (s): _____ Acreage: _____
 Tract number: _____ Field number (s): _____ Acreage: _____
 Tract number: _____ Field number (s): _____ Acreage: _____
- Seeding rates: _____
- Manure application, if any (tons or gallons/ac): _____
- Lime and/or other nutrients recommended by soil test to be applied at planting: _____

- Establishment method: (check box)
 conventional seedbed prep & drill no-till drill broadcast with light incorporation aerial
- Proposed termination date: _____
- Proposed method of termination: (check box)
 chemical tillage winter kill other: _____

Planner Certification

Planner certifies that he/she reviewed Maryland NRCS Practice Code 340 Cover Crop - Table 1 (plant choices) and recommended seeding dates/rates with the producer.

Planner: _____ Date: _____

Certification of Practice Completion

I certify that that this practice has been completed according to NRCS plans and specifications. (Note above in Practice Specifications if there were any changes to the planned practice and acreage.)

NRCS, MDA, or SCD employee: _____ Date: _____