

Conservation Corner for August 30, 2016

Keeping It Green

Jim Williams
Wexford Conservation District

Soils are more than just a collection of mineral particles – they are an amalgamation of many forms of life – worms, bacteria, fungi, insects, and roots. Especially roots. Compounds exuded by the roots of living plants are crucial to keeping the biological cycles in the soil healthy and functioning. In turn, these cycles help produce the healthy plants that feed humans, livestock, and wildlife. Cover crops are a great way to keep roots actively growing in the soil long after cash crops have been harvested. They can also provide forage for livestock, habitat for wildlife, nitrogen for next year's crops, protect the soil from erosion, and break up soil compaction.

Two weeks ago, the "Conservation Corner" focused on the establishment of cover crops for wildlife food plots. This week's article focuses on the range of plants suitable for cover crops, when to plant them, and the benefits that each one of them can provide.

Cereal Grains

Plants in this category are annual grasses. Some are adapted to planting in the fall, where others are more suitable for spring planting.

Grain Rye: This plant is adapted to fall seeding, and can be planted as late as mid-October. Because it continues to grow late in the fall, it can capture any nitrogen in the soil that would otherwise leach down out of the root zone during the winter. It tolerates very cold temperatures and has aggressive growth in the spring, two qualities which make it a very good soil builder. Additionally, it can be grazed. Because of its strong growth, it is important to till it under or spray it with herbicides at least two weeks before planting a crop in the spring.

Oats: Oats are a spring or summer seeded cover crop that has good growth, can build soil organic matter, and makes an excellent component of a multi-species cover crop mix. It may also be grazed. When planted in late summer (before Sept. 1st), it can be used to control weeds over the winter. Oats are not hardy, and winter temperatures will kill the plants. This can be an advantage as no tillage or herbicides are required in the spring prior to planting crops.

Wheat: This plant is fall seeded, tolerates cold temperatures, and will grow well in the spring. Wheat is a good soil builder which can also be grazed. Wheat is not as aggressive as grain rye. It should be planted by October 15.

Legumes

Legumes are plants that can gather nitrogen from the atmosphere, and then slowly release nitrogen back to the soil so that it can be used by the next crop. This makes them an excellent choice if you want to build the soil. They can also be used as feed for livestock.

Alfalfa: As a deep-rooted, productive perennial plant, it can provide up to 100 pounds of nitrogen per acre for crops that follow it. It requires a higher pH than most plants for optimum growth. It can be hard to kill, and may require an herbicide to get under control. Alfalfa can be planted in the spring or summer, but no later than August 10th. Oats are often planted with alfalfa as a “nurse” crop to help the alfalfa get established. It is usually allowed to grow for a minimum of two seasons.

Red Clover: This common clover is a short-lived perennial lasting up to three years, and is mainly planted in the spring. Because of its strong growth, it makes an excellent soil builder. It is commonly seen in a multi-species cover crop mix. Red clover can be seeded in the early spring using the frost seeding method. One caution is that it should not be used as a primary species for grazing, as it can cause some health issues with livestock.

White Dutch Clover: A low-growing perennial that can be seeded in the spring or summer up to August 1st. Because of its low-growing habit, it is an excellent choice for use in garden paths, and in between rows of perennial crops such as blueberries, apple trees, and Christmas trees.

Field Peas: Pease are a moderate nitrogen fixer, and can be planted from early spring through late summer. They are one of the few legumes that will reliably winter-kill, making it easy to establish a cash crop the following spring. Because they establish themselves more quickly than the other legumes listed, they are better at smothering weeds.

Hairy Vetch: This plant works well as a soil builder and makes an excellent component of a multi-species cover crop mix. It should be seeded in spring or early summer. It is an annual that is semi hardy – in winters that are mild or have good snow cover, it will survive. In harsh, low-snow winters, it will die. If allowed to go to seed, it can become a weed in next year’s crop.

Broadleaf Plants

Oil Seed Radish: A summer planted cover crop that should be planted by August 15th. The oil seed radish has root that can go as deep as 10 inches into the soil. The long tap root breaks up soil compaction, allowing the next crop to root deeper and thus be able to get at nutrients and water that are below the previously compacted soil layer.

Buckwheat: This rapidly-growing cover crop is typically planted in June or July, and can reach heights of three to four feet in a month. It is an excellent soil builder and component of a multi-species cover crop mix. If you need a cover crop for a two month period this is an excellent choice. It has even been known to out-compete quackgrass. Frost will kill it, but if seeds are allowed to mature they will germinate the next spring and may become a weed issue.

Cover Crop Mixes

Many growers have found that by planting a mixture of cover crops – at least one from each of the three categories listed above – they reap benefits that are greater than those from planting just one species. According to Paul Salon, a USDA-NRCS Plant Materials Specialist working in New York, diverse cover crop mixes increase soil microbial diversity, which in turn increases the health of the soil. They are also better at suppressing weeds due to their varied growth habits.

Many seed companies sell seed mixtures adapted to planting either in the spring / early summer or late summer early fall. Some companies will even customize mixtures for growers based on their soil types, and commercial crops that will be grown.

Selecting the Right Cover Crop

The Midwest Cover Crop Council has an on-line tool available that will make recommendations for planting cover crops based on location, cash crops, objectives for the cover crop(s), and the soil type. Simply enter their name in a search engine, and you will be able to access it. Additionally, our staff is available to work one-on-one with farmers to find the bright techniques and species for their unique conditions and crop rotations.

Jim Williams is the USDA- Natural Resources District Conservationist serving Wexford and Missaukee Counties. You can reach him by calling (231) 775-7681, ext. 3, by email at jim.williams@mi.usda.gov, or by stopping in at the USDA Service Center located at 7192 E. 34 (Boon) Rd. in Cadillac. The USDA-NRCS is an equal opportunity employer, provider, and lender.



Cattle grazing oil seed radish cover crop in Wexford County. Photo Courtesy of Jerry Lindquist, MSU Extension



Cover crop mixes such as the one shown here that includes oats, buckwheat and alfalfa, provide a multitude of benefits to the soil and the succeeding crops



The roots of the cover crop do as much good for the soil as the top of the cover crop – they provide food for many of the microorganisms that play an important role in soil health.



The tender leaves of clovers and young grasses are a treat for grazing chickens.