

Cover crop demonstration grants aim to improve soil health



Cover crops are implemented on a Brown County farm. New grant funding from BWSR will allow five SWCDs to pursue new cover crop initiatives or expand existing programs. **Photo Credit:** Minnesota Soil Health Coalition



Grant funding from the Minnesota Board of Water and Soil Resources (BWSR) will help five soil and water conservation districts increase the use of cover crops and related tillage practices in the counties they serve.

In December, BWSR awarded \$1 million in Cover Crop Demonstration Grants to East Otter Tail, Traverse, Stearns, Faribault and Root River SWCDs. Root River SWCD is in Houston County. Awardees will work with landowners to provide options such as per-acre financial incentives and technical assistance to increase use of cover crops in key areas.

The board initiated the grants in response to record-breaking rainfall and resulting flooding across much of Minnesota in 2019. According to USDA data, almost 1.2 million acres — roughly 5% of the state's cropland — were prevented from being planted last year. Prevented planting results when an insured crop cannot be planted with the proper equipment by the final planting date

established by the Farm Service Agency (FSA).

"Producers play an essential role in implementing sustainable agriculture practices that enrich soil health and improve water quality," said Minnesota Corn Growers Association Executive Director Adam Birr. "These cover crop demonstration grants will enable these key players to determine what works best on their farm operations, and how to replicate successful practices across the landscape."

While crop insurance compensates growers for some costs, those payments don't address other problems often created by leaving fields unplanted. In addition to the loss of a crop, heavy rainfall and long-term field saturation can result in a loss of organic matter in the soil. Fields left unplanted are vulnerable to soil erosion and to "fallow syndrome", which can include loss of beneficial soil organisms, soil compaction and crusting, and weed management problems.



Examples of cover crops from left to right: Kale, Purple top turnips, and winter radishes. **Photo credit:** Mary Juhl, BWSR

Cover crops are known to increase soil health. By keeping a living plant aboveground and roots belowground for much of the year, they can greatly reduce erosion and runoff while increasing infiltration. This plant material increases soil organic matter, which can improve soil health and increase water retention. Farmers who use cover crops can often observe that runoff from their fields during high-intensity rainfalls is noticeably less than that from bare soil.

Cover crops can scavenge excess nitrogen and phosphorus, reducing how much can infiltrate into groundwater and potentially increasing the nutrients available for the next cash crop. Certain cover crops can reduce the amount of nitrogen fertilizer needed, potentially lowering costs of production. In addition, cover crops can provide more forage for livestock and food sources for beneficial insects and pollinators.

While cover crops offer soil health benefits, barriers exist for new adopters. Minnesota's short growing season leaves little time to plant cover crops after row crops such as corn and soybeans are harvested. Because of this, cover crops are often seeded aerially in early fall or inter-seeded between rows of standing corn and soybeans in summer. Successful establishment depends on many variables: sufficient rain after planting, adequate seed-to-soil contact, and interaction with the standing crop.

Unpredictable weather can hinder crop establishment. For example, the heavy spring rains that kept farmers out of their fields in 2019 were followed

by heavy late summer and fall rains and an early freeze-up, hindering both the harvest of fall crops and the establishment of cover crops.

Cost of establishment can also be a significant hurdle. Combined costs of seed and application, whether seeded aerially or inter-seeded, are typically \$30 to \$50 per acre. Federal programs such as the USDA Natural Resources Conservation Service's (NRCS) Environmental Quality Incentives Program (EQIP) and Conservation Stewardship Program (CSP) offer assistance for cover crops, generally in the range of \$35 an acre in Minnesota — but demand often exceeds available funding. Several SWCDs have developed their own incentive programs to encourage establishment of cover crops, with per-acre payments ranging from \$25 to \$40 per acre. Despite these incentives, the rate of cover crop adoption remains low in Minnesota. The 2017 Census of Agriculture showed that cover crop acreage increased by 40% from 2012, but still only comprised 2.6% of all cropland in the state.

With awards ranging from \$125,000 to \$250,000, the five SWCDs plan to use the grant funding in the following ways:

- East Otter Tail SWCD plans to establish three cover crop demonstration sites, with the goal of establishing 1,000 acres of cover crops annually for three years. Informational meetings and farmer field days are planned to further engage new adopters.
- Traverse SWCD plans to work with producers who farm cropland in Drinking Water Supply Management

Areas (DWSMAs), setting a goal of installing cover crops on 200 acres within delineated DWSMAs each year for three years.

- Stearns County SWCD aims to add 1,000 new acres of cover crops within a targeted area in central Stearns County with the goal of protecting drinking water in an area of highly vulnerable soils. The SWCD plans to develop a robust farmer recruitment effort.

- Faribault SWCD plans to strengthen its existing cover crop program by developing educational opportunities, working one on one with new adopters, and providing a per-acre financial incentive to eligible farmers to offset costs.

- Root River SWCD will offer both technical and financial assistance to new adopters, with a goal of adding 400 new acres of cover crops annually for three years. Crop producers with land located within 2 miles of municipal drinking water supplies will be the primary focus.

Contracts under the new initiative will remain in place for at least three years, giving producers an opportunity to experiment with cover crop practices that work for them. Information gained under the program will help BWSR, participating SWCDs and local partners better understand the barriers to cover crop adoption. Education and technical assistance offered through the grants will help each SWCD develop new relationships with farmers, local co-ops, commodity groups, and other influencers, increasing the likelihood of cover crop success.