

Editor's note: *This is the third in a series of op-ed articles that will be sent to newspapers across Iowa on a monthly basis. Subsequent articles in this series will discuss in detail various nutrient reduction methods outlined in the Iowa Nutrient Reduction Strategy and the costs and benefits of each potential method.*

Cover crops are a conservation bargain

By Jacqueline Comito, PhD

Cover crops have come to the forefront of the state's efforts to reduce nutrient loads in Iowa waterways. Cover crops are included in the Iowa Nutrient Reduction Strategy (NRS) as an important practice that farmers can use to reduce nonpoint source pollution. As part of the NRS implementation, Iowa Secretary of Agriculture Bill Northey announced that cost share funds are available for cover crops and all the funds were spoken for quickly.

Historically, producers have been reluctant to plant cover crops because of the time and money involved. Considering the current support for cover crops and the many benefits they provide, the time has never been better to start planting cover crops.

Producers typically grow cover crops to provide living cover on farm fields during times when cash crops are not grown, usually during late fall and early spring. While farmers usually do not harvest cover crops for profit, they provide many economic and environmental benefits.

First, cover crops recycle nutrients and help prevent them from entering Iowa waterways. They help water infiltrate soil, preventing nutrient-heavy runoff from entering waterways. This increased soil infiltration also provides some flood mitigation. Additionally, cover crops absorb excess nitrogen, reducing nitrogen leaching into the groundwater or drainage systems. In one Iowa field study, a cereal rye cover crop reduced nitrate concentration in drainage water by 48 percent, and oats reduced nitrate concentration by 25 percent. Although results will vary depending how much the cover grows, this means that widespread use of cover crops can significantly improve Iowa water quality and recycle valuable nutrients back to our soil.

Second, cover crops help to retain topsoil. Topsoil is Iowa's most precious resource and the base of our agricultural economy. Retaining topsoil is essential to the state's long-term economic health. Unfortunately, when farmland is left without any living cover from harvest to planting or during any time of the year topsoil is lost through erosion. An Iowa study found that using rye cover crop following no-tillage soybeans reduced sheet erosion by 54 percent and rill erosion by 90 percent compared to no-tillage fields without cover crops. An oat cover crop produced about one-half the benefit of a rye cover crop. In addition to providing soil cover, the cover crops also helped to anchor residues and prevented them from moving with flowing water. This is especially important now because Iowa has been experiencing frequent high intensity rainfall events. These findings show that cover crops are an important tool in retaining Iowa's most important natural resource.

Not only do cover crops help retain soil, but they also improve soil health. Cover crops recycle nutrients that would otherwise end up in Iowa waters and redeposit those nutrients into the soil where they will eventually be available for future crops. Legume cover crops can also fix atmospheric nitrogen and deposit it into the soil. Cover crops can also improve soil health by increasing soil organic matter and increasing earthworm populations. They can help to control weeds and increase plant diversity by improving habitat for beneficial microbes, insects, and wildlife.

While cover crops require additional financial input, labor, and crop management, they are an important long-term investment for securing the future success of Iowa farms. Importantly, recent farmer surveys have reported that effectively managed cover crops do not significantly affect cash crop yields. In fact, the *Iowa Farmer Today* recently reported that cover crops increase cash crop yields during periods of weather volatility. In drought-stricken areas, farmers reported that corn yields were 11 percent higher and soybean yields were 14 percent higher than yields for corn and soybeans not planted after cover crops.

Not only will cover crops help achieve the Iowa NRS goals, but producers will also retain healthy, fertile topsoil for generations to come.

Comito, an anthropologist, is the program manager for Iowa Learning Farms.

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