

AERIAL-SEEDED COVER CROPS COULD SAVE TIME, LABOR

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Which cover crops will work well in Wisconsin's short growing season after fall crop harvest? Farmers in the Yahara Watershed in Dane County, with University of Wisconsin-Extension, researched that question as well as cover crop planting rates and methods by growing on-farm plots from 2013 to 2016.

This year, they tried aerial broadcasting cover crop seed on a total of 1,000 acres of farmland using Natural Resource Conservation Service (NRCS) cost-sharing funds. Heidi Johnson, the Dane County UW-Extension Crops and Soils Educator who helped coordinate the seeding, says using an airplane to seed cover crops can save on labor and get the deed done more quickly than if fields are drilled.

"Putting the cover crop into standing growth gives us a little extra time, and if labor is in shortage, the airplane takes that off the table. The pilot was able to do 1,000 acres in four hours," Johnson says. "If you try to do all that acreage by drill, by the time you get to the last of the acreage, you've lost a week or two."

The aerially seeded spring barley didn't produce the fall growth Johnson had hoped for, because the weather didn't cooperate. The hurricanes that hit the Southern U.S. created a weather system that left parts of Wisconsin, including Dane County, dry for the month of September. "Everything was seeded by plane the morning of Sept. 12, and we didn't get an appreciable rain event until Oct. 3. That is a killer for cover crops that are broadcast-seeded because they are just sitting on the soil surface and need to get very wet to be able to germinate. I was hoping that we would have an extended warm period with the (October) rain so the cover crop would take off. We didn't get that."

"That was disappointing, but that's how it goes. From year to year, you're going to have different results depending on the weather. But it really saves on labor, and that's why I'm not walking away from using the airplane. There are going to be limitations and challenges, but, if we're going to want to look at large-scale adoption (of cover crops), things like airplanes are going to make it a lot easier," she says.

More densely populated areas could use helicopters to seed cover crops. Oconomowoc County, WI, farmers seeded more than 1,000 acres by that means, Johnson says. Seeding by airplane is less labor-intensive, however, because planes hold more seed, she adds.

Farmers are becoming used to using cover crops as part of their whole-farm management systems, the educator points out. "Cover crops are starting to catch on. Farmers who have dedicated themselves to using them – I couldn't get them to stop using them. They say their soil is really mellow in the spring, and it's nice to plant back into."

The first year of the Dane County three-year cover-crop project, they looked at which species worked well in their region and with their crop systems. Legumes such as clovers or brassicas such as radishes and turnips, which worked well in other areas of the U.S., didn't work for this Wisconsin area after corn silage harvest. "They probably work in Illinois or Indiana, but we just don't have enough growing season to get growth on those types of cover crops," Johnson says.

"We're using small grains like spring barley or oats or the king of all cover crops, winter rye," she adds. Johnson tells farmers, if their corn silage is harvested by Sept. 15-20, spring barley or oats can put on enough growth to cover soil assuming there will be enough rain to spur germination. "My choice between the two of them is barley. Barley puts on a little more growth than oats, and that's our whole goal in fall with cover crops that are going to die out over the winter: to put on as much growth as possible."

If silage corn harvest runs into late September or early October, Johnson suggests using winter rye. "Winter rye is a very, very cool-season grass, so it

Wisconsin Cover Crop Conference Is Feb. 27

An all-day conference on using cover crops in Wisconsin will be held Feb. 27 at the Holiday Inn at Stevens Point.

The [Wisconsin Cover Crop Conference](#) is geared toward helping Wisconsin farmers use cover crops effectively.

"We're going to have a lot of farmer-presenters, so it will be a good time for farmers to network and talk with other farmers about what they're doing," says Heidi Johnson, the Dane County UW-Extension Crops and Soils Educator who helped coordinate the event.

Agenda and registration information is available [here](#).

can germinate and grow down to 34 degrees.” Farmers have successfully established winter rye even if it’s seeded as late as Thanksgiving. The downside to this cover crop is that farmers have to be aggressive in killing it the next spring or its massive root systems and tendency to use nitrogen will hinder the crop that follows it.

“My farmers don’t want to use it,” she says of winter rye. “Sometimes we have issues with corn after rye. We have trouble getting it planted well, problems with nitrogen deficiencies, and some general stunting problems with corn after rye.” Those who grow winter rye as a cover crop and want to terminate it with herbicide should burn it down on the first March day that reaches above 50 degrees, she advises.

Rye has worked as a low-quality heifer feed for dairy farmers who let it grow into May and then chop it. “But it has to work with everything else the farmers are doing; whatever they plant after it will just get pushed back for later planting. The harvest also usually comes around the same time as first-crop (alfalfa). So when the farmer is deciding where to send the chopper, haylage is always going to come first because it is for lactating animals. That can create issues as to how to manage that rye so it doesn’t get away from them.”

Triticale, a hybrid of wheat and rye, is another cover crop option for farmers who like to take their cover crops off as spring forage. It has some of the same drawbacks as rye, but it’s not quite as vigorous and can be harvested later, avoiding interfering with first-cut alfalfa harvest and maintaining quality. It’s not a good candidate if a farmer wants to plant those acres back into corn; consider soybeans instead, Johnson advises. “But if it’s a dairy farm that doesn’t grow beans and is tight on acreage, triticale might not be an option.”

Cover crop seeding rates don’t have to be as high as was originally thought, Johnson says. Winter rye planted as a forage is usually seeded at about 100 lbs/acre; as a cover crop, only 30 lbs/acre are needed.

Farmers who want a cover crop after corn silage should stick to grasses like the small grains mentioned earlier; it’s not worth the money to seed clovers or radishes, she says. If seeding after winter wheat in early August, however, “the world is your oyster. That’s when people can use any cover crop they want. If the plan is to go into corn the next year, I always say, why not use clover? Our research in Wisconsin has shown you can get a 20- to 40-lb nitrogen credit if you use some of the annual clovers after winter wheat and then go back into corn.”

“It’s a way to make those cover crops pay for themselves.” With the extra month of growth available, radishes and turnips are also good options. Small grains will grow longer and provide added cover as well. “There’s great opportunity for farmers to use some different crops. We don’t know a lot of how cover crops affect the soil microbiology, but one thing we know is that the more diverse types of cover crops we use, the more we’re helping to diversify our soil microbes.” Seeding a combination of legumes, brassicas, and grasses, she suggests, may help microbes build disease immunities for the next crop.

Johnson, who has studied cover crops the past eight to nine years, says their use may be challenged in coming years. “Where we’re at now with commodity prices, cover crops are an expense that’s going to be a difficult decision for some farms to take on and get through those first years” of integrating them into their management systems.

“I am heartened, because, even though margins are really tight, farmers see the benefits of cover crops. They’re still dedicating part of their crop budgets to them.”

Her cautious message to farmers considering adding cover crops to their crop systems: “Start slow.” Plant small areas to cover crops and talk with crop specialists like Johnson or with other farmers who have been using them. “I really preach small successes and go from there rather than starting big and having things possibly go wrong.”