



PHOTO: RITA BRHEL

Take Cover!

Cover Crops Slow In Popularity, But Does Cut Fertilizer, Herbicide Input

BY RITA BRHEL
P&D Correspondent

Using cover crops has received a lot of attention during the past decade as the next step in no-till crop production, but farmers have been much slower to adopt the practice. While cover crops have immediate environmental benefits in improving soil quality, the economic impact is less clear and producers aren't keen on adding a step into their crop rotation whose money-making potential is still being debated.

Less than 1 percent of all crop acres in the U.S. make use of cover crops, says Ryan Stockwell, agriculture manager for the National Wildlife Federation at Reston, Va. But, he contends that this represents rapid growth for a nearly unheard-of practice before the turn of the century.

"Certainly, before the introduction of no-till, no one would've been convinced to try cover crops. They would've been laughed at for just thinking of it," Stockwell said. "With no-till, cover crops create an opening with how we can change our culture and create new techniques."

Cover crops — crops that are planted into a row crop, such as corn or soybeans, during the off-season as a way to protect the soil during times of non-production during the year — are touted as an important soil conservation tool, especially by governmental incentive programs borne out of an environmental-oriented agenda, as cover crops provide soil coverage and thereby reduce erosion and runoff.

"Cover crops can reduce nitrate leaching at lower costs than other practices," Stockwell added.

As far as the economic impact, what's vague about cover crops is not that there are agricultural benefits — cover crops reduce fertilizer and herbicide applications as well as crop water needs — but rather their monetary value, says Sam Wortman, agronomist with the University of Illinois at Urbana, Ill. But there has been renewed effort in educating producers during this latest drought. Stockwell explains how every one percentage point increase in soil organic matter adds about one inch of water-holding capacity per acre, and each inch of water equals one week of water in a drought.

"Cover crops can increase or at least maintain soil organic matter," Wortman said. "Cover crops increase soil organic matter and improved soil aggregation creates increased water-holding capacity. This can drought-proof your farm."

HOW COVER CROPS WORK

Because cover crops aren't planted to be harvested, they are killed during the growing season before they have used up the available nitrogen, when the terminated crop can then become soil organic matter for the next

crop. The soil organic matter breaks down into nitrogen that can then be available for the next crop. The more cover crops are used — during consecutive years — the more soil organic matter can build up and the nitrogen-boosting benefits can extend well past the next growing season.

"The capacity for replacing synthetic nitrogen on your farm really depends on your climate," Wortman said. "The relationship is between percent nitrogen and dry matter production."

There are two types of cover crops, which sometimes are mixed together for a combined effect:

- * Catch crops, such as oats or rye, are planted at the end of the corn or soybean season to scavenge unused nitrogen from the former crop.

- * Legumes, such as vetch, have biological nitrogen-fixation abilities similar to soybeans that naturally increase soil nitrogen, which can be used to reduce fertilizer needs for the next season of corn or soybeans. Because nitrogen from legumes is used up quickly by crops, many legume cover crops are mixed with grasses to better extend nitrogen availability as grass residue breaks down into nitrogen more slowly.

An example use of cover crops involves a rotation of corn to soybeans to winter wheat to an oat-radish-winter pea mix (cover crop). Another example is a rotation of corn to aerial-seeded rye (cover crop) to soybeans to winter wheat to clover (cover crop). The most common rotation, Wortman describes, is corn to aerial-seeded rye-mustard mix (cover crop) to soybeans to aerial-seeded oat-mustard-vetch mix (cover crop).

There are other benefits to cover crops beyond increased soil nitrogen: Soil organic matter fuels soil microbial communities, which is what breaks plant residue down into usable nitrogen, and an added benefit of these more diverse soil microbes is fewer crop diseases. Cover crops themselves provide habitat for beneficial insects, and studies with cotton show that cover crops can reduce pesticide applications, showing that there is similar potential for other crops. Cover crops can also suppress weeds at germination by physically crowding out, blocking light, reducing soil temperature, and using available soil nitrogen. In addition, some cover crops including rye, sorghum, and sudangrass produce phytotoxins that chemically inhibit weed growth.

"Most weeds are pretty prolific, and I've seen weeds growing through sidewalk, so this isn't going to be the be all, end all, but it'll slow them down early on," Wortman said. "It'll be a way to give crops a competitive edge."

BARRIERS & UNKNOWNNS

Cover crops are one of the more researched areas in crop production lately, and many benefits have been uncovered, but this farming practice is still a work in progress in many ways.

The biggest barrier to more producers considering cover crops is the need for new equipment or access to different equipment. At this time, the best planting techniques for cover crops are using a no-till driller or planter, a highboy, or aerial application. Purchasing new equipment or hiring a pilot can be expensive, and developing new planting techniques is just one area of research for cover crops.

Another research push is finding effective ways to terminate cover crops, which needs to be done at least two weeks prior to planting corn and soybeans to break the cover crop's phytotoxin effect. Mature cover crops can be harvested, mowed, or crimped. Crimping is done with a piece of equipment called a roller-crimper that rolls the crop onto the soil surface and crimps the crop at the base to stop its growth. Immature cover crops can be killed with a herbicide compatible with the upcoming crop. Some producers till cover crops into the soil as green manure, but in a no-till situation, this would negate the soil-building goals.

Another major barrier to adopting cover crops is that it does add more steps in each year of crop production. The cover crop needs to be planned right before or right after fall harvest of the main crop, corn or soybeans, and then terminated in the spring right before spring planting of the main crop. Producers with livestock can use cover crops as winter grazing, and that adds a further step.

"We need cropping system design considerations to meet these goals," Wortman said.

Crop insurance coverage is a concern of most producers wanting to try cover crops. It's important to clarify requirements regarding cover crops with crop insurance agents, Stockwell says. Some mandate evidence that cover crops meet guidelines for food farming practices. For some agencies, cover crops may be inadvertently blamed for low yields or delayed planting due to policy loopholes. From his conversations with producers, Stockwell has learned that crop insurance issues have greatly hindered cover crop adoption.

And while cover crops are helpful in drought situations, they are almost exclusively a no-till farming practice. While they can be used in tillage situations, cover crops are most beneficial in a no-till system. However, transitioning to no-till — the time it takes for the soil profile to repair and for crop yield to recover, which

Stockwell calls the "five-year sweat" — takes years and a drought situation is a poor time to begin.

Finally, adding cover crops to an operation requires a learning curve for producers in how to select a cover crop mix. Cover crop species have different costs, biology, benefits, and ability to meet certain management goals. Some cover crops, like summer annuals, can be planted after small grain harvest. Winter annuals go in after fall harvest of soybeans or corn. There are also perennial cover crops as well as cool-season annuals that can be used before corn and soybeans are planted in the spring. The silver lining is that cover crop mixes are easy to grow, Wortman says.

"Even if someone has no experience with cover crops, it's a good chance some of those cover crops will stick and then the producer can adjust for future years," he added.

DOLLARS & SENSE

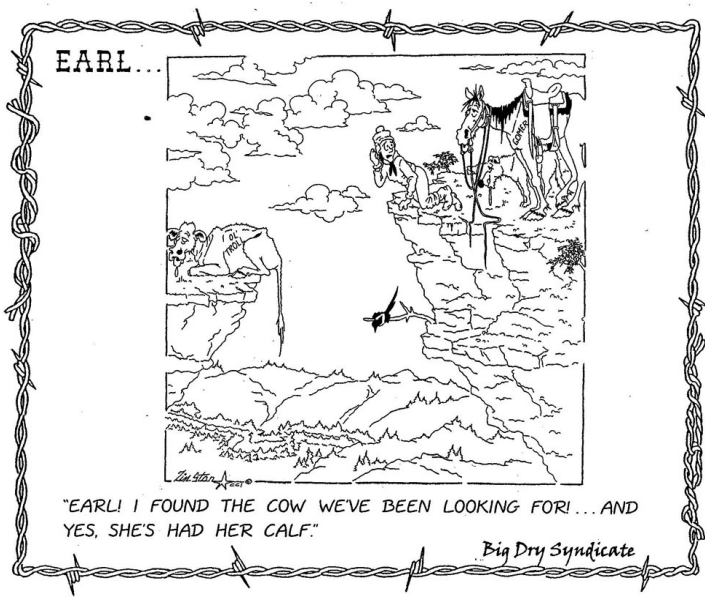
The economic impact of cover crops is not easy to measure, but they're there.

"Many benefits are not immediately available like soil organic matter and weed suppression," Wortman said. "Many benefits are not valued by the markets, like the classic example: soil erosion."

In addition, variables are constantly in fluctuation, from the weather to input costs to grain prices. And while there are incentive and cost-share programs available to encourage producers to try cover crops, their future is uncertain, they're not available in all areas, and not all farmers qualify.

"A question that weighs heavy on the mind of many farmers is, how much help can I get from the federal government if I'm going to take a risk on cover crops?" Wortman said.

This is where research can play an important role on showing just how much risk versus benefit that cover crops carry, Stockwell says. He told of an on-farm study in North Dakota on long-term no-till corn: Cover crops cut herbicide needs in half from four applications, reduced field passes, increased soil organic matter, and as a bonus, increased wildlife biodiversity as purely an aesthetic value. At the end of the season, using cover crops had cost the producers \$4 more per acre, due to the cost of the cover crop seed mix, but bumped corn yield up by eight bushels per acre, which translated to \$52 more income per acre.



Next Drought Risk Webinar Slated May 29

BROOKINGS — The final Managing Drought Risk on the Ranch Webinar will be held May 29 at 9 a.m. MST or 10 a.m. CST at SDSU Extension Regional Centers.

The May 29 webinar is the last in a 5-part webinar series developed as a proactive move to help producers understand those tools that are available. The Livestock staff at SDSU Extension partnered with University of Nebraska-Lincoln Extension to host the series with the focus of helping ranchers across the state prepare for the possibility of the drought continuing in 2013.

This series of meetings is titled "Managing Drought Risk on the Ranch."

During the May 29 webinar, Matt Stockton, Agricultural Economist at the West Central Research and Extension Center in North Platte, Neb., will address Economic Factors to Weigh in Making Decisions during Drought. The session will include a current drought update and forecast. Following the webinar, the regional centers will join together via video conference for a question and answer session, with SDSU Extension State and Field Specialists presenting additional information relevant to South Dakota producers.

The May 29 webinar and the other four previous webinars are sponsored by the National Drought Mitigation Center at the University of Nebraska-Lincoln. The series was developed with support from the Sustainable Agriculture Research and Education (SARE) program, which is funded by the U.S. Department of Agriculture - National Institute of Food and Agriculture (USDA-NIFA).

For more information please visit www.igrow.org, contact your nearest SDSU Extension Regional Center, or call Kalyn Waters, SDSU Cow/Calf Field Specialist at 605-842-1267 or Pete Bauman, SDSU Range Field Specialist at 605-882-5140. Contact information for SDSU Extension Regional Centers is available on iGrow.org.

World Ag. Supply/Demand Estimates Released

BROOKINGS — The projected number of acres planted to corn in the U.S. was increased by 1.3 million acres according to the World Agricultural Supply and Demand Estimates (WASDE) Report released May 10 as compared to the USDA Agricultural Projections to 2022 Report (released in February). Few adjustments were made to the 2012-2013 supply and demand estimates, says Lisa Elliott, SDSU Extension Commodity Marketing Specialist.

Elliott shares a summary of the report with South Dakota producers:

- **CORN** — In the report, U.S. projected 2013 planted corn acreage was increased by 1.3 million acres, as compared to the USDA Agricultural Projections to 2022 Report released in February (to 97.3 million acres). However, the projected yield was lowered by 5.5 bushels per acre to 158 bushels per acre. This is likely due to the delays in corn planting that the U.S. is currently facing.

- The U.S. projected production is 14.1 billion bushels. This would be the largest crop that the U.S. has produced and be one billion bushels larger than the 2009 record crop. This report has the 2013-2014 ending stock level at 2 billion bushels, which was similar to the USDA Projection Report. In addition, the WASDE has \$4.70 as an average corn price for 2013-2014 as compared to the USDA Projection Report that estimated \$5.40 as an average price.

- **SOYBEANS** — In the report, U.S. projected 2013 planted soybean acreage was increased by 1.2 million acres, to 77.1 million acres, as compared to the USDA Agricultural Projections Report released in February.

- However, the U.S. projected yield was 44.5 bushels per acre, which was nearly the same as the February projections. This change is likely due to some producers switching some corn acres to soybeans. The U.S. projected production is 3.4 billion bushels, which is close to the projections of 3.3 billion bushels. This would be slightly larger than the U.S. record production in 2009. This report has the 2013-2014 ending stock level at 265 million bushels, which was slightly higher than the USDA Projection Report's estimate of 185 million bushels.

- In addition, the WASDE has \$10.50 as an average soybean price for 2013-2014 as compared to the USDA Projection Report's estimate of \$11.35 as an average price.

- **WHEAT** — In the report, U.S. projected 2013 planted wheat acreage was decreased by 1.1 million acres, as compared to the USDA Agricultural Projections Report released in February which was at 56.4 million acres.

- The U.S. projected yield also decreased, at 46.7 bushels per acre, which was slightly lower than the February projections of 48.5 bushels per acre.

- The U.S. projected production is 2.1 billion bushels, which is close to the February projections of 2.2 billion bushels. The WASDE has the 2013-2014 ending stock level at 670 million bushels, which was slightly lower than the Projection Report's estimate of 733 million bushels. In addition, the WASDE has \$6.80 as an average wheat price for 2013-2014 as compared to the USDA Projection Report's estimate \$7.20 as an average price.

To learn more, visit iGrow.org.

Hearing Better is a Lifestyle

Lyric by Phonak

- The world's first and only **100% invisible, extended wear hearing device**
- Worn 24/7 for up to 4 months at a time, while sleeping, showering, exercising and talking on the phone
- Delivers clear, natural sound quality – minimizes background noise
- No daily hassles – no batteries to change or daily insertion or removal required



Beth J. Beeman,
Au.D., CCC-A



Todd A. Farnham,
Au.D., CCC-A

Lunch and Learn

Thursday, May 23 • Noon to 1:00pm
Minerva's, 1607 E. Hwy. 50, Yankton, SD



We're H"ear" For You!
EAR, NOSE & THROAT
ASSOCIATES, P.C.

LEWIS & CLARK
Specialty Hospital



Soup & salad luncheon provided by Lewis & Clark Specialty Hospital.
RSVP to Jill Sprakel 664-5300 by May 20th.



30% OFF

Frame & Lenses*

Eye Exams Available

Optical Expressions

605-665-6181

Yankton Mall

We welcome Eyemed, Medicaid and other insurances

*See store for complete details.
Offer expires 5/31/13



Brightway Electric LLC

Yankton

- Can Lights
- Ceiling Fans
- Exterior Lighting

Let us "Brighten" your way!

760-3505 or 661-9594

– www.brightwayelectricyankton.com –

Graduate to gracious living...

Walnut Village

...a refined choice for your golden years..

Senior Apartments



The perfect blend of privacy and community

24 hour staff for your safety and security

Many other features included such as church services, activities, exercise class and elevator and gathering/party rooms.

Additional ala carte services such as respite care, garage, and heated/AC workshop available.

Independent Apartments:

- Breakfast and lunch
- Kitchen with custom cabinets and appliances
- 1 or 2 bedroom apartments available

Assisted Living:

- Assistance with personal tasks
- 3 meals daily plus snacks
- Medication management

613 Walnut, Yankton, SD • WalnutVillageCare.com • 605-664-4220



YHS Historic District

...a refined choice for your golden years...