

THE FARMER'S REPORT

Renewable diesel poised to power growth in soybean demand

By DANIEL GRANT **FarmWeek**

Soybean growers could see demand growth from the biofuels sector in the next decade, reminiscent of the ethanol boom that shifted

into high gear in the early 2000s and pushed corn use to new heights.

The key product set to take off is renewable diesel, not to be confused with biodiesel.

Both fuels use any oil or fat, mostly soybean oil, as feedstock. But the processing for each product differs, with renewable diesel generated from more high free fatty acid feedstocks,

which produce better carbon intensity scores.

"Renewable diesel has emerged. It's all about reducing the carbon intensity of fuel blends," James Fry, founder and chairman of LMC International, said during a webinar hosted by the U.S. Soybean Export Council (USSEC).

Mac Marshall, vice president of market intelligence for USSEC and the United Soybean Board, reported current production totals about 2.4 billion gallons of biodiesel and nearly 1 billion gallons of renewable diesel nationwide each year.

But, with proposed plants all over the U.S., particularly along the Southern coast and Pacific Northwest, potential new capacity for renewable diesel production could skyrocket to 5.97 billion gallons by 2024.

"What makes it exciting is the partnerships forming (between soy crushers and the petroleum industry)," Marshall said. "When you see the private sector investments coming in, it makes this seem more tangible."

One partnership to accelerate renewable diesel production announced in the fall involves a 50/50 joint venture between Chevron U.S.A. and Bunge North America.

The venture aims to establish a reliable supply chain from farmer to fueling station for both companies. Bunge is expected to contribute its soybean-processing facilities in Cairo on the southern tip of Illinois and in Destrehan, La., while Chevron contributes \$600 million. The two companies anticipate doubling the combined capacity at the two facilities by 2024.

"By 2030, soy oil will be significantly ahead of palm wide)." "As the world's largest oilseed processor, we

as the leading oil (world-With soybean produc-

partnership with an ener-

gy leader to increase our

participation in the devel-

opment of next generation,

renewable fuels," said Greg

Heckman, Bunge CEO.

"We share a commitment to

sustainability and reducing

carbon in the energy value

is expected to grow world-

wide, but production of

Indonesian and Malaysian

palm oil could fall due in

part to declining production area and environmental con-

straints, Fry noted. That puts

soybean oil in the driver's

seat as the key feedstock to

vegetable oil production

could increase 2% annually,

but growth of soy output

could reach 3.5% a year

while sunflower and canola

oil production increase just

1.5% and palm oil produc-

to meet this demand growth

is soybean oil," Fry said.

"The one oil that's going

tion possibly stagnates.

LMC projects global

fuel renewable diesel.

Demand for vegetable oil

chain."

America and the U.S., Scott Gerlt, economist with the American Soybean Association, believes there will be plenty of supply to meet expanding soybean demand for renewable diesel production. He does not expect the new market to resurrect the food-versus-fuel debate sparked by the introduction of the Renewable Fuels Standard in 2005.

"There's plenty of supply. We're seeing increased crush capacity," Gerlt said. "And, we have to remember that for every pound of soy oil, we get 4 pounds of meal.'

As for the near future, Gerlt doesn't anticipate a large increase in U.S. soybean plantings in 2022.

"In the U.S., a lot of planting decisions are driven by rotation, so we don't usually see wholesale changes in acreage," he added. "I'm not expecting a wide swing on acres at this point."

(This story was distributed through a cooperative project between Illinois Farm Bureau and the Illinois Press Association. For more food and farming news, visit FarmWeekNow. com.)





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Illinois AgrAbility celebrates 30 years of helping farmers, families

URBANA – Illinois AgrAbility proudly acknowledges 30 years of service to Illinois agricultural producers. The program provides assistance to Illinois farmers with physical limitations and disabilities so they can maintain their independence and continue farming.

"The goal of Illinois AgrAbility is to ensure agricultural producers, workers, and their family members can remain actively involved in farming, despite their circumstances. Illinois AgrAbility provides one-onone consultation with a client service manager, who spends time understanding the farmer and their situation and identifying opportunities to assist. In addition, we strive to serve the agricultural community through service and education," says Illinois AgrAbility Director Josie Rudolphi, Extension specialist and assistant professor in the Department of Agricultural and Biological Engineering (ABE) at the University of Illinois.

Since 1990, Illinois AgrAbility has directly assisted 800 farmers and provided education about assistive technologies and referrals to another 1200 producers. It is a program of Illinois Extension and hosted in the College of Agricultural, Consumer and Environmental Sciences (ACES) at U of I. Illinois AgrAbility is funded through USDA's National Institute of FoodandAgriculture(NIFA) as well as generous donations from individuals and organi-

"We could not accomplish what we do without our current partners and collaborators including Illinois Assistive Technology, Community Health Partnership of Illinois, and the Farm Service Agency in Illinois, and the many AgrAbility Ambassadors who promote and support the program in their communities," Rudolphi says.

Agriculture ranks as one of the most hazardous professions, according to the Centers for Disease Control and Prevention. As a leading agricultural state, Illinois holds a proportionate health risk to farmers and farm workers. An estimated 200 farm workers in Illinois sustain serious injuries each year. In addition, health-related impairments and illnesses also affect individuals in agricultural occupations.

"Illinois AgrAbility has been an important partner for University of Illinois Extension, because the program assists our agricultural producers by providing them with adaptive and assistive equipment to keep them in the workforce," says Shelly Nickols-Richardson, associate dean and director of Illinois Extension.

Illinois Agr Ability hosted

a virtual celebration on Sept. 29, 2020, to acknowledge the anniversary. At the event, special recognition was given to individuals and organizations who have been central to the success of the program. Robert Aherin, professor emeritus in ABE, was recognized for his outstanding leadership. Aherin was director of Illinois AgrAbility from its inception until his retirement in 2019, and he was instrumental in developing partnerships and securing federal funding for the program. Aherin also established the Illinois AgrAbility Unlimited project to provide educational services and assistance in order to help people in agriculture who have disabilities become as productive as they possibly can.

To support Illinois AgrAbility, please visit www. giving.illinois.edu. Include the AgrAbility Farm Safety Fund (336120)) in the other field of the giving form. Questions can be directed to Angie Barnard at abarnard@illinois.edu or 217-333-9355.

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Online Conservation Cropping Seminar set

CHAMPAIGN—Attention Illinois farmers. Find ways to improve soil health, learn about cover crops, remain profitable—and even more marketable—by using sustainable techniques that build up natural resilience to weather extremes, pests, and weeds.

State Conservationist Ivan Dozier encourages farmers to learn from conservationists, partners, and other Illinois farmers by participating in this Conservation Cropping Seminar online event. There will be a Question & Answer session as well as helpful resources to access. For the eighth year in a row, conservation partners offer helpful information, data, and farmer testimonials in a one day, 3-hour online virtual conference session on Thursday, Feb. 3 from 9 a.m. to noon.

"While it's not like the normal full-day, in-person get-together held at three different Illinois locations, it's still critical that we keep the conservation conversation going – COVID-19 or not. The planning committee has gathered a great keynote speaker, helpful information, and a powerful IL Farmer Panel to tell their story and offer advice and ideas other Illinois farmers can use on their farms," Dozier explained. We can't feed you lunch virtually, so for 2022, participation at the event is free – and lunch is on your own."

Scheduled speakers include:

- Welcome message, Ivan Dozier, IL State Conservationist
- Russell Hedrick, First Generation Farmer, North Carolina
- Cade Bushnell, Ogle County, IL Farmer
- Jerry Seidel, Jefferson County, IL Farmer
- Rick Kaesebier, Logan County, IL Farmer
- Carbon Markets Jean Brokish and Dr.
 Emily Bruner, American Farmland Trust
- Agroforestry Topics, Katie Adams, Savanna Institute

Don't miss the 2022 event. Register online at the Champaign County SWCD website at www.ccswcd.com, and reserve your spot today. The Conservation Cropping Seminars, held for the last seven years, are organized and made possible with the involvement and support of Illinois Department of Agriculture, US-DA's Natural Resources Conservation Service, American Farmland Trust, the Illinois Stewardship Alliance, Illinois Environmental Protection Agency, Illinois Sustainable Ag Partnership, University of Illinois Extension, and local Soil and Water Conservation Districts in Champaign, Jefferson, Logan, and Ogle counties.



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FARMER'S REPORT

USDA offers expanded conservation program options for climate-smart agriculture in 2022

CHAMPAIGN - The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) is announcing several new and expanded opportunities for climate-smart agriculture in 2022. Updates include nationwide availability of the Environmental Quality Incentives Program (EQIP) Conservation Incentive Contracts option and added

flexibilities for producers to easily re-enroll in the Conservation Stewardship Program (CSP). These improvements to NRCS' working lands conservation programs, combined with continued program opportunities in Illinois, are part of the Biden-Harris Administration's broader effort to support climate-smart agriculture.

"Climate and weather

issues are real, and America's agricultural communities are on the frontlines," NRCS State Conservationist Ivan Dozier said. "We have to continue to support and expand the adoption of conservation approaches to support producers in their work to address the extreme weather conditions and build more resilient operations. We are continuously working to improve our



Conservation Incentive Contracts address priority resource concerns, including sequestering carbon and improving soil health in Illinois.

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concerns, including sequestering carbon and improving soil health in Illinois. Through these contracts, NRCS works with producers to strengthen the quality and condition of natural resources on their operations using three management practices: cover crops, nutrient management, and residue and tillage management/

programs to ensure we're

giving Illinois farmers the

best tools to conserve nat-

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vation Incentive Contracts

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tive Contracts are five years

long and offer producers

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EQIP Conservation In-

ural resources."

to implement management practices.

CSP Re-Enrollment Option – NRCS updated CSP to allow an agricultural producer to immediately re-enroll in the program following an unfunded application to renew an existing contract. Previously, if a CSP participant did not re-enroll the year their contract expired, they were ineligible for the program for two years. This ineligibility was imposed on CSP participants even if their failure to sign a renewal contract was due to the unavailability of funds, which is beyond their control. USDA is now waiving this two-year ineligibility restriction for all CSP applications.

Applicants with unfunded fiscal 2022 CSP renewals will receive letters this month, notifying them they are automatically eligible to apply for future CSP funding opportunities, rather than needing to wait two years to reapply.

How to Apply – NRCS accepts applications for conservation programs yearround-including EQIP and CSP - however producers and landowners should apply by the application deadline to be considered for each year's funding. The deadline is March 4, 2022 for Conservation Incentive Contracts and Feb. 4, 2022 for CSP. To apply, producers should contact their local USDA Service Center.



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FARMER'S REPORT

Resolute scientific work could eliminate wheat disease within 40 years

URBANA - Wheat and barley growers know the devastating effects of Fusarium head blight, or scab. The widespread fungal disease contaminates grain with toxins that cause illness in livestock and humans, and can render worthless an entire harvest. As Fusarium epidemics began to worsen across the eastern U.S. in the 1990s and beyond, fewer and fewer farmers were willing to risk planting wheat.

But the battle to eliminate Fusarium head blight never went away. Public breeding programs, with support from the USDA-supported Wheat and Barley Scab Initiative, have been doggedly tweaking soft red winter wheat lines in hopes of achieving greater resistance to the disease.

In a new analysis, University of Illinois researchers say those efforts have paid off. Over the past 20 years, critical resistance metrics have improved significantly. And, they say, if breeding efforts continue, vulnerability to Fusarium head blight could be eliminated within 40 years.

"I don't think anybody realizes it's possible we could eliminate Fusarium head blight as a problem. Forty years sounds like a long time, but by the time I'm retired, the threat of disease could be gone. That would make a huge difference," says Jessica Rutkoski, assistant professor in the Department of Crop Sciences at Illinois and co-author on the new paper.

Rutkoski and her colleagues examined 20 years of data from nine university breeding programs spanning 40 locations in the eastern U.S. That's a whopping 1,068 wheat genotypes.

In each year and each location, researchers inoculated wheat plants with

Fusarium spores. They evaluated both test entries (novel wheat lines) and check cultivars (standard across all locations and years) for various resistance traits. The long-term check cultivars act as a kind of barometer, accounting for agronomic practices and environmental factors.

The researchers looked at disease incidence, severity, Fusarium-damaged kernels, and deoxynivalenol (also known as Vomitoxin) content – the main toxin of concern in Fusarium-contaminated grain. And over 20 years and 1,068 lines, all the resistance traits improved.

"The genetic gain in disease resistance was significant for each of those four traits. Most importantly, we saw a 0.11 parts-per-million decrease in deoxynivalenol per year. Just to see any significant favorable trend is really good," Rutkoski says. "It basically shows that everyone's making progress, and that the investment in public breeding programs is paying off."

Rutkoski says breeders have thrown nearly every technique at wheat to try to improve resistance to Fusarium head blight. It's a tough nut to crack because resistance is controlled by multiple interacting genes.

"It's quantitative resistance. There isn't just one gene that's going to solve it. On the breeding side, people have looked at exotic sources of resistance, such as Chinese lines that have high resistance. Then they'll map the genes and introgress them," Rutkoski says. "That's been successful to some degree, but those genes tend to be associated with unfavorable traits, like lower yield. So, there have been issues."

When Rutkoski analyzed

the impact of germplasm introductions from Chinese wheat lines, they weren't responsible for boosting resistance. In other words, progress over the past 20 years was mostly due to breeders exploiting native resistance - the locally adapted wheat's inherent genetic capacity to resist disease - rather than introducing resistance from exotic sources.

That's not to say novel genetic sources of resistance don't have their place. Rutkoski notes it's important to try to identify major-effect genes because often they can help breeders achieve their goals faster.

Ultimately, Rutkoski hopes her results justify and encourage investments in public breeding programs.

"Nobody really notices the progress that's being made. I think there's some skepticism and suspicion

that breeding isn't that important. Or people think we need to focus more on genome editing or finding more exotic sources of resistance," she says. "A lot of public breeding programs are getting shut down, and we risk losing all that progress. So, I was gratified to show that the improvement is very consistent over time.

And if you just stick to this kind of strategy, you will have guaranteed results. It's not risky."

The article, "Genetic trends in Fusarium head blight resistance due to 20 years of winter wheat breeding and cooperative testing in the Northern U.S.," is published in Plant Disease [DOI: 10.1094/PDIS-0421-0891-SR]. Funding for the work comes from the USDA. The research is a cooperative project with the U.S. Wheat and Barley Scab Initiative.

(The Department of Crop Sciences is in the College of Agricultural, Consumer and Environmental Sciences at the University of Illinois at *Urbana-Champaign.*)





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Agriculture navigates 'stagflation' as Federal Reserve weighs options

By DANIEL GRANT

FarmWeek

Higher interest rates could be in the cards as the Federal Reserve considers options to deal with the highest inflation in the U.S. in 30 years.

In fact, inflation combined with economic stagnation — known as "stagflation" — likely will continue. However, the current situation is much different than the last major period of stagflation in the 1970s, according to Jason Henderson, senior associate dean and director of Extension at Purdue University.

Henderson, who previously served as vice president and Omaha branch executive for the Federal Reserve Bank of Kansas City, discussed the situation during the Agricultural Bankers Conference in Cincinnati hosted by the American Bankers Association.

"I don't think it's 1970s stagflation. It's a different demand scenario, different demographics," Henderson said. "Demographics will drive slower growth. But, the key is how do we spur productivity?"

In the 1970s, the coming of age of the baby-boom generation added about 2-3 million more people into the working age classification. But, the past three years, the amount of people in the working age classification has declined as boomers retire and fewer young people enter the workforce.

With a limited workforce, Henderson looks for U.S. gross domestic product to rise slowly, in the 1.7 to 2% range.

"Inflation is just too much money chasing too few goods," with both supply constraints (cost-push) and increased competition (demand-pull) occurring, he said. "Supply constraints can be remedied, but demand inflation tends to be persistent."

"There's a lot of money flowing into the U.S (to the tune of \$15 trillion in foreign investments) and we wonder why stock prices are historically high and asset values are rising," he continued. "What will be the target of monetary and fiscal policy?"

Henderson believes the Federal Reserve will slowly raise interest rates and trim its balance sheet, which jumped from \$4.5 trillion in treasury purchases from 2016 to 2018 to \$8 trillion.

If realized, higher interest rates could pressure farmland values, but likely not to the point of a major decline.

"We've seen a surge in farmland values," Henderson said. "Farmland is expensive, but priced reasonably given where interest rates are."

U.S. farmers generally benefitted from the low interest rate environment and initially from the wave of inflation, which pushed commodity prices higher.

"Initially it's good for farmers, until

input costs go up," the economist noted. "And, this is what we're seeing today. Input costs are surging."

Ag producer sentiment in the Purdue/CME Group ag economy barometer subsequently weakened for several months in a row at the end of last year as farmers dealt with the prospect of tighter margins ahead.

"I think in 2022 there'll be some profit opportunities, but it might not be as bountiful as 2021," said Henderson, who looks for commodity prices to remain fairly strong.

Looking ahead, agriculture has the opportunity and challenge of serving two different markets — bulk commodities and growing demand for value-added, specialty foods.

"We've got to figure out how to meet consumers' needs of the future," he said. "We've got to think about diversifying our markets. We've been talking about it a long time."

Henderson said ag bankers should work with farmer customers to determine their market focus of the future and incorporate new technology into their businesses while managing risk in a potential rising interest rate environment.

(This story was distributed through a cooperative project between Illinois Farm Bureau and the Illinois Press Association. For more food and farming news, visit Farm Week Now.com.)

GROWMARK Foundation announces 2022 student Ag Scholarship program

BLOOMINGTON

- The GROWMARK
Foundation is once again offering a \$1,500 scholarship program for students in the United States pursuing two- or four-year degrees or trade school certification in an agriculture-related field.

"As our business has grown and evolved, we saw a need to provide a scholarship to students throughout the United States, in addition to the scholarship programs already established in our core geography," said Amy Bradford, GROW-MARK corporate communications manager and GROWMARK Foundation manager. "GROWMARK and the FS member cooperatives are strong supporters of youth leadership education and this is one more way we can contribute to the future of agriculture."

Applicants must complete an online application, which includes academic information, community service and leadership activities, and essay questions regarding agriculture and cooperatives. Applications will be judged by a panel of agribusiness professionals.

High school seniors or students at any level of higher education may complete the application, which can be found at https://www.growmark.com/about-us/corporate-commitments.

Applications are due

by midnight Central Time on April 14, 2022 and recipients will be notified by July 1, 2022.

About the GROW-MARK Foundation

The GROWMARK Foundation was formally incorporated in 2005 and supports 501(c)(3)not-for-profit charitable organizations. The Foundation is focused on programs and activities that support the vitality of the industry of agriculture; agriculture education and consumer understanding of agriculture's contributions to society and the economy; agricultural leadership development; and education about the benefits of the cooperative way of doing business. The GROWMARK System has been involved in a variety of philanthropic efforts, including youth and young leader education and development and scholarships, for decades.

About GROWMARK

GROWMARK is an agricultural cooperative serving almost 400,000 customers across North America, providing agronomy, energy, facility engineering and construction, and logistics products and services, as well as grain marketing and risk management services. Headquartered in Bloomington, Ill., GROWMARK owns the FS trademarks, which are used by licensed member cooperatives. More information is available at growmark.com.

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THE FARMER'S REPORT

Proposed pipeline to offset biorefinery carbon emissions could sequester in Illinois

By TIMOTHY EGGERT FarmWeek

The same Midwest land that grows corn for ethanol could also serve as a storage site for carbon emitted by biorefineries.

That production and sequestration cycle is at the heart of a pipeline project proposed across 13 Illinois counties and parts of four other states.

Texas-based Navigator CO2 Ventures has put forward a plan to capture and transport 10 to 15 million metric tons of liquified carbon dioxide per year through a 1,300-mile pipeline across Nebraska, South Dakota, Minnesota, Iowa and Illinois to a pair of permanent sequestration sites in central Illinois.

The liquified carbon emissions would enter the system from industrial customers like ethanol plants, move through the pipeline and be injected more than a mile below the ground for permanent storage.

At full capacity, the system could capture and store enough carbon dioxide equivalent to removing approximately 3.2 million cars from the road per year, according to Navigator.

Navigator in early 2021 partnered with BlackRock Global Energy and Power Infrastructure Fund III to develop the project, with Valero Energy Corp. as the anchor customer.

Preliminary designs show the pipeline, known as the "Heartland Greenway," entering Illinois near western Hancock County then traveling north and east through Adams, Brown, Christian, Fulton,

Henry, Knox, McDonough, Morgan, Pike, Sangamon, Schuyler and Scott counties to two sequestration sites in the east central part of the state.

Pipe would be laid at least 5 feet below ground and emerge in some spots via well heads. The proposed Illinois sequestration sites have been selected because of underground geologic formations best suited for safely storing liquid carbon dioxide.

Bill Bodine, Illinois Farm Bureau director of business and regulatory affairs, said the project will hopefully minimize the surface impact for farmers and landowners who host sections of the pipeline on their property.

Bodine said farmers and landowners need to be involved in the process, ask questions and work to ensure they have good terms in easements or land-use agreements.

"I encourage landowners to seek out education and the advice of an experienced attorney before agreeing to anything," Bodine said. "These are long-term agreements that can have long-term impacts."

Bodine said IFB plans to host information and education sessions for members interested in the project. And IFB will track the permitting and construction phases of the pipeline.

The former is expected to continue through 2022. Construction of the Illinois portions of the pipeline likely won't start until 2025, after approval from state and federal regulators.



Some farmers are apprehensive of trying cover crops in their operation, with one of their concerns being potential insect issues.

Rye cover crops attract good insects with minimal impact from pests: study

URBANA – Cover crops are an effective tool for reducing soil erosion, nutrient losses, and leaching, and remain a key piece of the Illinois Nutrient Loss Reduction Strategy. However, farming practices over the past several decades decreased the quantity of cover crops, causing low water infiltration and runoff into waterways, according to the Midwest Cover Crops Council.

A two-year study by Nick Seiter, University of Illinois Extension crops specialist, finds cereal rye cover crops have a minor impact on pests and insect populations in Illinois.

To inform farmers on pest management recommendations for cover crop systems, Seiter studies a combination of cereal rye on commercial fields, existing NREC-funded research sites, and new field experiments.

Several Illinois Extension personnel were collaborators in this field research from start to finish. In addition to helping design the study and recruit cooperators, they set up different types of insect traps in the field, bagging the captured insects at weekly intervals, and transporting the insect samples back to the Illinois campus for identification.

Traps were set in both cover crop and non-cover crop fields to look at potential differences in insect populations.

Some farmers are apprehensive of trying cover crops in their operation, with one of their concerns being potential insect issues, said Duane Friend, Extension educator and collaborator on the project.

"By examining what insects are present in a cover crop setting, both harmful and beneficial, would provide vital information for producers to determine if cover crops would be viable for their operations," said Friend.

Project personnel examined 73 commercial soybean fields over two years (half of which had a winter rye cover crop), and none of these fields reached an economic threshold for insect control. One field was impacted by slugs and had to be replanted; another was sprayed for armyworms. The additional risk of insect pest problems due to a winter rye cover crop appear to be relatively low in Illinois.

"Not only did we not see any economic damage from insects in Illinois fields, but there was no economic damage in soybean fields in the five other states," Seiter said, referring to an additional, regional study examining rye termination timing in relation to soybean planting. "This is good news for farmers who are looking to adopt these systems to mitigate erosion, nutrient loss, waste control, and weed controls."

This summer, Brodie Dunn, graduate student in crop sciences at the University of Illinois, submitted and defended his thesis based on the impact of cereal rye cover crops and pests on the use of agricultural fields by various bird species.

Together, Seiter and Dunn will contribute to a national study evaluating the impacts of rye termination timing on insect, disease, and weed management and conduct future research regarding residue management practices for slugs.

"Farmers and crop advisors are most concerned about slugs, which can be an issue in no-till, heavy residue systems with cereal rye," said Seiter. "Cover crops could certainly qualify for this problem."

Seiter hopes the new research will help farmers save money and explore new prevention strategies due to minimal chemical treatments.

"This research and collaboration between Extension educators and researchers on campus is exactly what the Extension model is meant to do," Friend said. "Following the research, we are providing the information to farmers to use in their management decisions."

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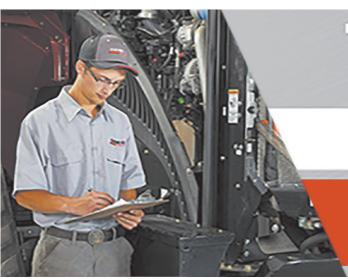
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