PRACTICAL FARMERS OF IOWA

COOPERATORS' PROGRAM

FARMER-LED RESEARCH

2024 Cooperators' Program Report

PRACTICALFARMERS.ORG/RESEARCH

Cover photo: A tray of Chinese cabbage seedlings in which seeds were either covered (left) or not covered (right) at Roxane Mitten's on May 12, 2024. Learn how germination percentage was affected at Roxane's and four other farms on page 16.

This page, above: Signs protect an overwintering spinach trial from hungry harvesters at Scattergood Farm near West Branch, Iowa, in mid-April 2024. Read more about the project results on page 17.

This page, right: The before-and-after of Landon Brown's strip-till versus no-till trial on his farm near New Providence, Iowa. (Top) A hole shows the depth of soil and cereal rye root disturbance caused by a strip-till pass. (Bottom) At harvest, corn ear size appeared more variable in the no-till (left) versus strip-till (right) treatments. Photos taken April 2024 and Oct. 1, 2024. Read more about the project results on page 8.

Paying Attention With Intention

At the annual Cooperators' Meeting in December 2024, we presented seven farmers from five farms with the Master Researcher Award. PFI gives this award to farmers who have conducted at least 20 on-farm research trials and presented at or hosted at least five PFI events. One of the awardees was Jill Beebout, who raises fruits, vegetables and livestock near Chariton, Iowa. When accepting the award, Jill shared, "Other than our family and the weather, PFI has been the single largest influence on our farm."

Since the late 1980s, more than 300 PFI cooperators, like Jill, have conducted 1,700 trials, generating their own data and influencing their farms. Before any relevant data can be created, though, cooperators first drill down on their research objectives while also considering the time and resources at their disposal. These objectives often take the form of questions like, "Can I try a new practice and increase productivity?" "What is this practice costing me?" "How is this practice benefiting me or my farm?"

In the pages that follow, you'll see many practices that cooperators inserted into those kinds of questions in 2024, as well as some answers. For instance:

- Kathy Dice, Alice McGary, Roxane Mitten and Mark Quee learned what onion varieties work (and which did not work) on their farms.

- Landon Brown and Keaton Krueger studied the impacts of no-till and strip-till on crop yields and financial returns in fields they planted to cover crops.

- Several corn farmers wary of marketing claims put various biostumulants and biochar seed treatments to the test.

Apart from the specific objectives of on-farm research trials, another reason cooperators cite for taking part in a trial is personal growth and learning. Some cooperators, like Robert Harvey, refer to this as "exercising my brain." The very act of participating in a trial is prized by Carmen Black, Emily Fagan and Adam Ledvina for helping them better organize their thoughts and keep good records. "It's so useful to keep good track of all the details," Emily says. "If I wasn't doing a PFI trial, I would likely be less organized and not keep good-enough track of things to come to a real conclusion."

In other words, paying attention with intention is a valuable skill cooperators learn while doing on-farm research.

Dave and Meg Schmidt agree. They raise grass-fed cattle near Exira, Iowa, and were among the farmers who received the Master Researcher Award in December 2024. In his acceptance remarks, Dave shared how having their own data helps them make informed decisions and instills confidence in their farming practices. "There's great comfort in being in the mainstream," Dave said. "But once you step out of that mainstream, having data helps."

Carly and Ethan Zierke, who completed their first trials in 2024, echo Dave's sentiments. "As a beginning farmer, there are countless things we do on a daily basis because we think we need to," Ethan says. "It's always a good feeling to implement a practice that is supported by experience and data."

To dive deeper into the experiences and data summarized on the pages that follow, we encourage you to explore the full research reports on our website at **practicalfarmers.org/research**. We've also listed at the top of each summary the PFI staff scientist who oversaw the project. Feel free to reach out to any of them if you want more information. Here's to the curious and creative farmers who take a scientific approach to improving their farms year in and year out.

In cooperation and curiosity,

Stefan Gailans

SENIOR RESEARCH MANAGER

PRACTICAL FARMERS OF IOWA
COOPERATORS' PROGRAM

Mission

To empower farmers to generate and share knowledge through timely and relevant farmer-led research.

Vision

A community of curious and creative farmers taking a scientific approach to improving their farms. These farmers are leaders among their farming peers whose work contributes to the field of agricultural research, resulting in more profitable, diverse and environmentally sound farms.

Guiding Principles

Practical Farmers and the Cooperators' Program are always seeking to grow our network and our members' impact. We proactively and passionately seek out creative ideas and flexible funding to support farmer-led research. These guiding principles define common characteristics of the Cooperators' Program and, in an effort to make the most of finite resources, serve as a filter for our work.

The Cooperators' Program is

- **Farmer-Led.** We believe that farmers should lead both the creation and exchange of knowledge. Farmers set our research goals and priorities. We also help farmers inform academic agricultural research that affects their farms by connecting researchers and farmers in meaningful dialogue and promoting the exchange of ideas.
- **On-Farm.** We believe that real-world, applied research on farms is critical for building a better agriculture in Iowa and beyond. We prioritize research conducted on-farm by farmers, but recognize the limitations and understand not all topics can sufficiently be addressed with this approach.
- **Collaborative.** We believe in working together. Research that is collaborative facilitates the sharing of knowledge and, ultimately, builds community. We prioritize multifarm projects as well as single-farm trials that have broad support within the cooperator community or could yield important insights for other farmers. We occasionally collaborate with university researchers and other partners who have gained the trust and confidence of farmers through their work, research and extension activities.
- **Relevant.** We believe that research should answer questions individual farmers have about their farms. This often involves supporting proof-of-concept investigation, ground-truthing new ideas and products and helping farmers design research that can satisfy their curiosity about their farms. Our farmer-researchers and partners are on the cutting edge of innovation in agriculture, and the Cooperators' Program supports their efforts.
- **Accessible.** We believe the knowledge, experience and findings generated by the Cooperators' Program should be available to the public. Farmers are our primary audience; we present results using farmer voices while also adhering to standards of scientific reporting. The products of the Cooperators' Program are used by farmers to make more informed decisions.
- **Empowering.** We believe that farmers are capable of conducting experiments on their own farms and carrying out the process from beginning to end. As the experts on their farming systems, we believe the role of PFI staff is to support farmers' inherent curiosity. Being at the helm of the on-farm research process builds on this curiosity by boosting farmers' scientific skills and confidence while generating powerful questions and advancing farmer-ownership of research conclusions and created knowledge.
- **Science-Based.** We believe the scientific method and good experimental design are necessary tools for farmers. The work of PFI farmers who conduct on-farm research is highly valued and trusted by both the broader PFI membership and non-members, including farmers, academic researchers and the general public.
- **Committed.** We believe in following through. Cooperators and PFI staff are eager to participate in, engage with and complete on-farm projects. We reward cooperator efforts and commitments to on-farm research by providing modest honoraria and showcasing their contributions.

On-farm research is a useful tool for learning and making informed decisions. Trial reflection surveys tell us that:

96% of cooperators increased their knowledge

75% of cooperators identified techniques for increasing their farm's financial viability

69% of cooperators are likely to implement changes to their farm based on their trial findings

73% of cooperators have new ideas to explore on their farm after conducting a trial

Kevin Prevo has been evaluating nitrogen application rates for corn in fields with histories of cover crops, no-till, grazing and manure on his family's farm near Bloomfield, Iowa. Kevin says the most valuable aspect of performing an on-farm trial is that the trial is ***on his farm.*** Read more about this project on pages 14-15.

2024 FARMER-LED

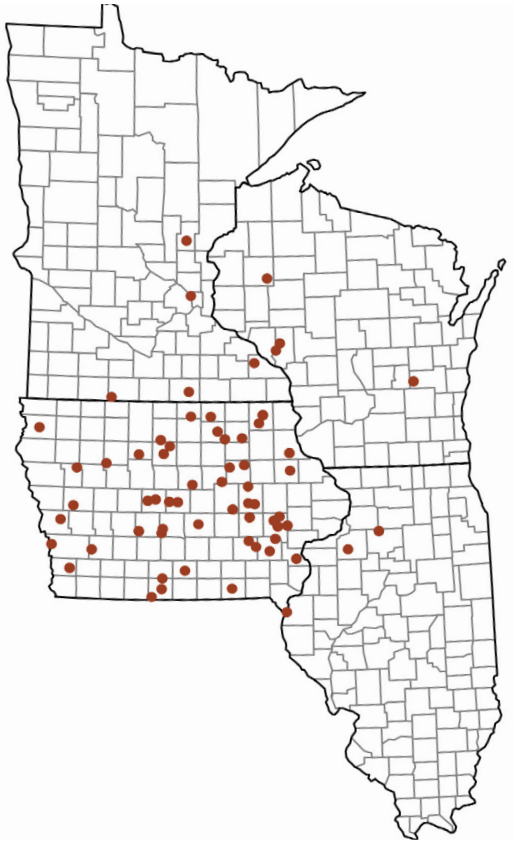
Research Trial Locations

IN 2024,

67 COOPERATORS

PARTICIPATED IN

100 RESEARCH TRIALS



FREQUENTLY ASKED QUESTIONS

About the Cooperators' Program

Since 1987, PFI's Cooperators' Program has empowered curious farmers to conduct on-farm experiments that answer their questions and guide their decision-making. Our program is unique in that farmers have always been at the helm – they are the ones brainstorming projects, setting on-farm research priorities and gathering the data on their farms.

While PFI staff guide farmers through the process of setting up an on-farm trial (and no prior research experience is necessary), farmers are very much partners and leaders in the process. Most on-farm research takes place on the farms of participating farmers, and the Cooperators' Program research agenda is developed and carried out by farmers.

What's a "cooperator?"

We refer to our farmer-researchers as cooperators because the first experiments in the program were done in cooperation with agricultural researchers. Nowadays, on-farm research trials are collaborative efforts between farmers and PFI staff scientists who guide the design of experiments based on questions posed by the participating farmers. On-farm research projects are also often collaborative endeavors among several farmers. So "cooperator" applies on many levels!

Do I have to be a "scientist" to participate?

Not at all! You do not need a research or science background to participate. All you need is an idea you want to test on your farm and PFI's staff scientists help with the rest. That said, just like scientists, you are making observations about your farm – and decisions based on available data – on a regular basis. So you're arguably a scientist already! What we do in the Cooperators' Program is empower you to answer your pressing farm questions using the simple yet rigorous tools of scientific research.

How exactly does it work?

Each year, farmers who have conducted on-farm research – and those who've told us they aspire to – are invited to our annual Cooperators' Meeting. Held in December, this gathering is about connecting as a community of on-farm researchers. Participants share results and observations from the past year's farmer-led research trials and plan future ones.

During the meeting, cooperators are encouraged to describe what they did, why they did it and what they found. They also generate ideas and make plans for future projects based on previous results and new questions. Before the onset of spring, cooperators and PFI staff mutually agree on project plans and commitments.

When the time comes to conduct the trials, farmers are ultimately responsible for planting seeds, tending to animals and taking measurements throughout a trial.

What will I gain from participating?

- Useful, reliable research that helps you understand what does and doesn't work on your farm
- Connection with a community of curious farmers with whom you can exchange ideas and experiences, and who can help you expand your knowledge of what's possible with on-farm research
- The chance to become a leader who inspires improvements to our agricultural landscape

Okay, you've got me hooked. I have something I'd like to investigate on my farm. What should I do now?

We'd love to hear about it! Contact Stefan Gailans, senior research manager, to learn more and get started.

I can't be a farmer-researcher but would like to see the results. How can I do that?

The results of our Cooperators' Program research provide relevant, unbiased and science-based information farmers can trust about new practices. You'll see summaries of our latest research in the following pages. For more in-depth results (as well as reports from previous years' trials), visit us online at **practicalfarmers.org/research.**

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TO LEARN MORE ABOUT THE COOPERATORS' PROGRAM, VISIT

practicalfarmers.org/research

HAVE QUESTIONS OR WANT TO GET INVOLVED?

CONTACT US AT **(515) 232-5661** OR **stefan.gailans@practicalfarmers.org.**

Strip-Till vs. No-Till Following Cover Crop

COOPERATORS | **Landon Brown,** *NEW PROVIDENCE, IOWA;* **Keaton Krueger,** *OGDEN, IOWA*

Many farmers use strip-till or no-till methods to plant corn and soybeans because they want to reduce soil disturbance, minimize planting costs, plant green into standing cover crops for weed control – or all three. One drawback of no-till management is that in some conditions, it can cause modest yield declines (about 3% on average) compared to conventional tillage. Strip-till requires an extra equipment pass compared to no-till, but many expect it to result in higher yields.

However, four out of five past PFI research trials directly comparing the two practices have shown no difference in corn and soybean yields between strip-till and no-till planting. This year, farmers Landon Brown and Keaton Krueger investigated how planting corn (Brown) and soybeans (Krueger) by strip-till versus no-till affected their crop yields and enterprise budgets.

"I THINK MY DEFAULT WILL BE STRIP-TILL FOR 2025. IF I DECIDE TO DO THE TRIAL ONE MORE TIME, THAT WILL HELP ME BE REALLY CONFIDENT."

-KEATON KRUEGER

LANDON BROWN PRESENTING THE RESULTS OF HIS STRIP-TILL VS. NO-TILL TRIAL AT THE 2024 COOPERATORS' MEETING.

AT HARVEST, LANDON BROWN REPORTED THAT HE COULD NOT VISUALLY TELL WHERE HIS NO-TILL AND STRIP-TILL TREATMENTS STARTED AND STOPPED.

FINDINGS

Landon found that his strip-till corn resulted in no significant yield increase and decreased net profits compared to his no-till corn in 2024. He says that in the future, he will stick to no-till planting on his farm. As farmers often report, Landon observed some erosion in his tilled strips early in the season. His strip-till corn looked a bit better than his no-till corn prior to maturity. However, there were no visible differences in the corn plants at harvest.

Statistical analysis revealed strip-till increased yield and returns at Keaton's farm. At Landon's farm, however, strip-till did not increase yield and it decreased his net returns.

COOPERATOR	DID STRIP-TILL INCREASE YIELD?	STRIP-TILL COST ($/ac)	STRIP-TILL NET RETURNS
Landon Brown	No	$22	-$22/ac
Keaton Krueger	Yes; +3 bu/ac	$20	+$14/ac

Keaton found that his strip-till soybeans yielded higher than his no-till soybeans. He plans to continue using strip-till to plant his soybeans. Landon's and Keaton's differing results and conclusions highlight the fact that strip-till may be an economically valuable reduced-tillage method for some farms but likely not for every farm every year.

Soybean Maturities in Delayed-Termination Cereal Rye Cover Crop

COOPERATOR	**Tracy Skaar,** *HAYWARD, MINNESOTA*

Planting green is a practice in which farmers plant soybeans into a living cereal rye cover crop and kill the rye at a later date. Because the practice leaves rye to grow for longer, it can boost the soil health and weed suppression benefits of the cover crop. But it can also be associated with a soybean yield decline, especially if rye termination is delayed until several weeks or more after soybean planting.

2024 was the second year that Tracy Skaar looked at whether using later-maturity soybeans when planting green can offset soybean yield decline caused by delayed rye termination. Last year, Tracy and other farmers found that later-maturity soybeans did not generally offset yield decline caused by delayed termination. This year, in addition to measuring yields, Tracy was interested in observing "weed control efficacy of early- versus late-terminated rye."

"I DIDN'T THINK THERE WOULD BE AS BIG A YIELD DIFFERENCE [DUE TO RYE TERMINATION TIMING] IN A WET YEAR LIKE 2024."

-TRACY SKAAR

TRACY SKAAR SPEAKING AT HIS PFI FIELD DAY IN SEPTEMBER 2023 WHERE HE SHARED HIS INITIAL IMPRESSIONS FROM HIS FIRST "SOYBEAN MATURITIES IN DELAYED-TERMINATION RYE" TRIAL.

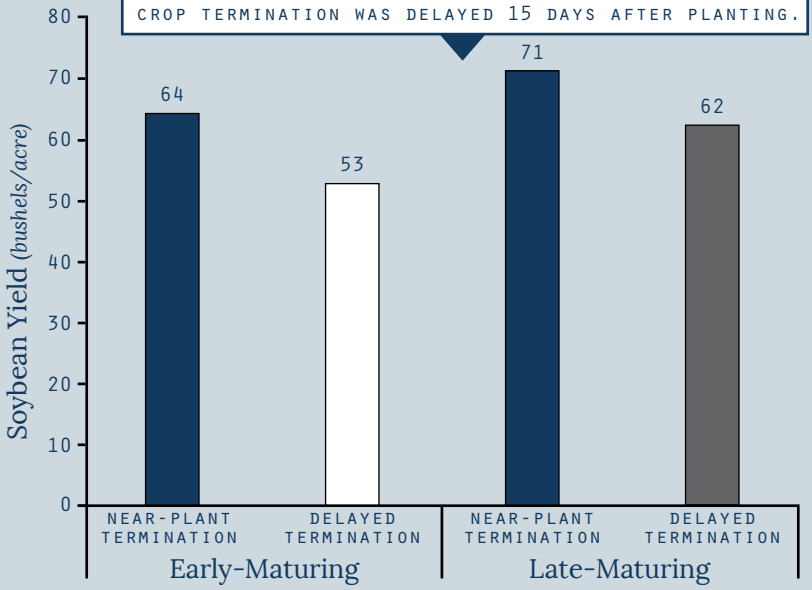
TRACY SKAAR TERMINATING RYE IN HIS LATE-TERMINATION TREATMENT, 15 DAYS AFTER SOYBEAN PLANTING. DEAD RYE FROM THE EARLY-TERMINATION TREATMENT (TWO DAYS AFTER PLANTING) IS VISIBLE IN STRIPS. PHOTO TAKEN MAY 30, 2024.

FINDINGS

Despite very wet weather, Tracy was able to establish his rye cover crop termination treatments at two days (Near-Plant) and 15 days (Delayed) after soybean planting. He also planted soybean varieties that differed by 0.8 relative maturity units. Tracy's later-maturity soybeans yielded higher than his earlier-maturity soybeans at both termination times. However, he found that delaying rye termination caused a yield decline for both soybean maturities.

Tracy says he saw no discernable difference in weediness between termination-timing treatments at harvest, but that weediness was overall much lower than it is when he does not plant green on his farm. The results, he adds, tell him he should kill his cover crop shortly after planting soybeans to maximize both yield and weed suppression.

STATISTICAL ANALYSIS REVEALED THAT BOTH SOYBEAN MATURITIES TRACY PLANTED YIELDED LESS WHEN COVER CROP TERMINATION WAS DELAYED 15 DAYS AFTER PLANTING.



Onion Variety Trial

COOPERATORS	**Kathy Dice,** *RED FERN FARM, WAPELLO, IOWA;* **Alice McGary,** *MUSTARD SEED COMMUNITY FARM, AMES, IOWA;* **Roxane Mitten,** *IOWA CITY, IOWA;* **Mark Quee,** *SCATTERGOOD FRIENDS SCHOOL FARM, WEST BRANCH, IOWA*

When choosing from the many onion varieties available, farmers need to consider a range of factors that can influence crop growth and marketability – such as growth rate, yield, taste and resistance to pests like thrips, which can lower yield and how long onions will keep in storage. In this trial, Kathy Dice, Alice McGary, Roxane Mitten and Mark Quee collectively compared the performance of six onion varieties. They also examined the varieties' storage stability and resistance to thrips damage.

The varieties chosen spanned yellow, white, pink and red onion types, and ranged from industry-standard hybrids to heritage open-pollinated varieties. The farmers hypothesized that varieties that were either more resistant or less attractive to thrips might have yield or storage benefits. To assess thrips' potential impact, cooperators counted thrips on plants in the field. They also counted signs of thrips damage – which shows up as whitish streaks or blotches on leaves. After harvesting and weighing the fresh onions, the cooperators stored them for months in the conditions they would normally use for their operations. After storage, they sampled the onions for storage quality, cutting samples open to look for mushy layers inside.

ROXANE MITTEN HARVESTING HER ONIONS NEAR IOWA CITY, IOWA. PHOTO TAKEN JULY 21, 2024.

"I HAD NEVER GROWN BLUSH BEFORE AND WAS PLEASANTLY SURPRISED BY HOW WELL IT GREW. IT PRODUCED BEAUTIFUL, PINK ONIONS."

-MARK QUEE

FINDINGS

All cooperators grew the Patterson variety as a touchpoint across locations. The variety serves as a standard for onion storage performance across the industry, which is one reason cooperators selected it for this trial. Interestingly, Patterson performed quite poorly: It had the lowest average bulb sizes and yields at all trial locations. A couple of the varieties stood out to cooperators:

- Blush, a pink variety, performed and stored well for Alice and Mark – who said he was especially pleased with Blush as he had not grown it before.
- Ailsa Craig yielded well, but stored poorly for Kathy and Roxane. This was not a surprise, however, as it is known and marketed as a fresh-eating onion.
- The experiment found no relationship between observed thrips and yield or storage outcomes.

The varieties highlighted as "Best-Producing" were those that statistical analysis showed to have yielded significantly more than the others. The "Takeaways" were informed by the results of all measurements and cooperators' comments.

COOPERATOR	VARIETIES	BEST-PRODUCING VARIETIES	TAKEAWAYS
Kathy Dice	Ailsa Craig, Patterson, Redwing	Ailsa Craig	Ailsa Craig had the highest fresh weight, but stored badly
Alice McGary	Blush, Patterson, Rosa di Milano, Talon	Blush and Talon	Blush and Talon produced well; Rosa di Milano stored well
Roxane Mitten	Ailsa Craig, Patterson, Redwing	No significant differences in harvest	Ailsa Craig stored significantly worse
Mark Quee	Blush, Patterson, Talon	Blush and Talon	Blush was a surprise success

Sweet Pepper Variety Trial

COOPERATORS	**Hannah Breckbill & Emily Fagan,** *HUMBLE HANDS HARVEST, DECORAH, IOWA;* **Marla Looper,** *BOUNTIFUL HARVEST FARM, NORTH LIBERTY, IOWA;* **Michael Pipho,** *ROOSTER'S CROW FARM, DUNKERTON, IOWA*

The Carmen F1 variety of sweet pepper is an excellent pepper, known for its sweet taste, adaptability and ease of growing. But because it's a hybrid, seed is expensive and farmers must buy new seeds each year. To save money and have the option of saving seeds, the cooperators in this project wanted to identify an open-pollinated line that could match or come close to Carmen in quality and production. They tested three alternative varieties: Bridge to Paris, Corno di Torro and Italia.

> *"I SAW A VERY CLEAR DIFFERENCE BETWEEN THE PEPPER VARIETIES TESTED, WHICH WILL HELP ME MAKE BETTER PLANTING DECISIONS GOING FORWARD. I WILL BE PLANTING APPROXIMATELY EQUAL NUMBERS OF THE CARMEN AND CORNO DI TORRO PEPPERS....BASED ON THE RESULTS, I WILL NOT BE PLANTING ITALIA PLANTS."*
>
> -MICHAEL PIPHO

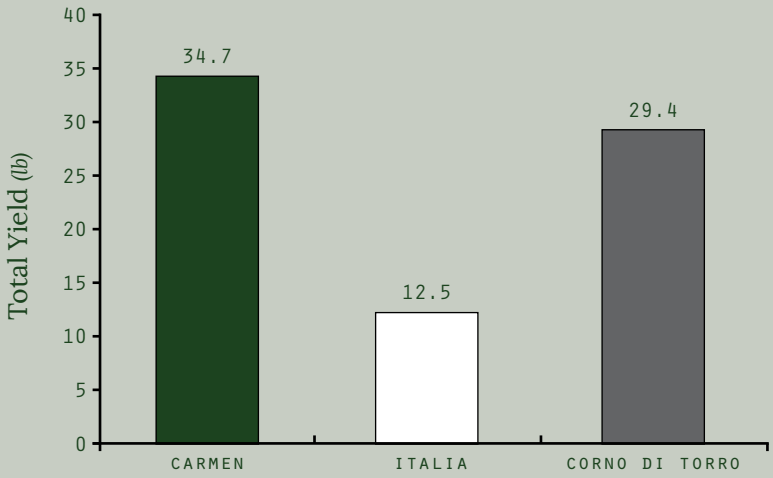
PEPPERS GROWING AT MICHAEL'S FARM NEAR DUNKERTON, IOWA. PHOTO TAKEN SEPT. 4, 2024.

FINDINGS

Carmen produced the highest total yields and the largest peppers at all sites. Across the sites, cooperators rated Carmen peppers as sweeter than the other varieties in taste tests. Michael's farm was the only site with a replicated experiment that had a successful harvest, so it was the only farm in the trial whose data could be statistically analyzed (see graph).

At Michael's farm, Italia underperformed Carmen and finished producing earlier in the season. Carmen production peaked in mid-September. Corno di Torro started slower and never reached the same weekly peak yields as Carmen. But it lasted longer and was still producing into October. Corno di Torro also produced more individual peppers, over a longer period, than Carmen. Farmers are trialing more pepper varieties in 2025.

AT MICHAEL PIPHO'S FARM, STATISTICAL ANALYSIS REVEALED CARMEN YIELDED BEST, FOLLOWED BY CORNO DI TORRO; ITALIA PRODUCED THE LEAST.



PFI STAFF: GRAHAM GIESTING

The Effect of Bale Grazing on Soil Properties and Biodiversity in Pasture

COOPERATOR	**Adam Ledvina,** *IOWA KIKO GOATS, CHELSEA, IOWA*

Bale grazing is a way of feeding livestock in the winter by providing bales of hay to animals out on the land, instead of indoors. What this looks like varies from farm to farm depending on climate, geography, and herd size and makeup. By spreading bales around, farmers can distribute fertilizer and hoof traffic across the pasture, or target problem areas like hillsides. Bale grazing changes soil conditions by creating protected, high-nutrient, mulched areas for seeds to grow.

Adam Ledvina bale-grazes goats on pasture using baled prairie grasses that he unspools to create long strips of hay (which he refers to as the bale tracks). In this trial, he was curious to learn how animal traffic near the unspooled bales affected soil properties like compaction and nutrient content. He also wondered if that traffic would affect diversity of plants in the pasture.

GOATS RUSH IN TO EAT THE HAY LEFT IN THE TRACK AS THE BALE UNROLLS DOWN THE HILL NEAR CHELSEA, IOWA.

FINDINGS

Adam observed that the tracks the prairie bales made as they were unspooled across the pasture were still visible the following summer as taller, greener, denser stands of grass. Areas covered by these bale tracks also had higher plant species diversity. The seeds came from the prairie Adam hayed to make the bales, and the bale mulch helped shelter the seeds as they established. The goats also helped these prairie plants grow: their hooves pressed the seeds into the soil, and their waste fertilized them.

The effects of that waste were measurable. The soil under the unspooled bale areas had higher phosphorus, potassium and micronutrients than non-bale-grazed areas. Bale-grazed areas also had deeper soil penetrability, a sign of better soil structure and less compaction. Adam saw clear local advantages to bale grazing, compared with non-bale areas in the same pasture. This project is continuing in 2025 with more farms, more livestock species and more experimental designs.

"THE AMOUNT OF PHOSPHORUS, POTASSIUM AND ORGANIC MATTER INCREASED MORE THAN WE EXPECTED. WITH THIS DATA, WE INTEND TO USE BALE GRAZING AS A TOOL TO BOOST NUTRIENTS ACROSS OUR FARM AND CUT OUR CHEMICAL FERTILIZERS."

-ADAM LEDVINA

For these measurements, Adam compared sampling areas within the swaths of bales to paired areas outside the swath.

MEASUREMENT	RESULTS
Compaction	Soil was penetrated 1.2 inches deeper within the bale area than the area outside bale area.
Soil sample analysis	Soil nutrients in bale area increased; K 350%, P 600%, SOM 150% of area outside bale area.
Species survey	Counted, on average, 8 more species within bale area.
Observations	Thicker, denser stands. The bale tracks were visible the following summer.

Sprouted Grain Feed Supplementation for Lactating Goats

COOPERATORS

Adam Ledvina, *IOWA KIKO GOATS, CHELSEA, IOWA;* **Margaret Chamas,** *STORM DANCER FARM, SMITHVILLE, MISSOURI*

When goat does produce milk, whether for dairy production or feeding kids, they're under high metabolic load. Supplementing their diets during this stressful period could improve the mothers' health. It could also potentially increase how much milk they produce, the quality of the milk or both. To find out, Adam Ledvina and Margaret Chamas fed sprouted grain as a supplemental fodder to does in the treatment group; all animals had access to the same base diet. Margaret would have measured dairy milk yield and quality, but her trial did not run to conclusion. Adam measured nursing kid weights at birth and at the end of a 30-day treatment period.

> *"HAND-FEEDING SPROUTED GRAINS DOES NOT MAKE SENSE AT MY SCALE OF OPERATION, BUT LARGE-SCALE SPROUTED COVER CROPS IS MORE OF MY INTEREST."* -ADAM LEDVINA,
>
> *reflecting on the 2024 trial and hinting at the direction he's taking in the 2025 trial.*

A MOTHER DOE WITH HER MALE TWINS AT ADAM LEDVINA'S FARM NEAR CHELSEA, IOWA. PHOTO TAKEN SPRING 2024.

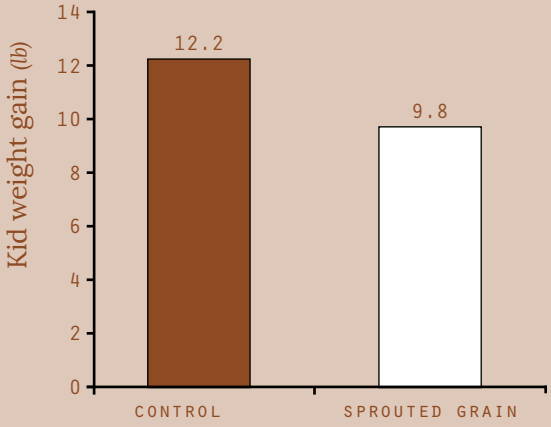
FINDINGS

The results were bad for sprouted grain, at least as it was prepared and dispensed in this project. Margaret's does refused the sprouted grain. The goat kids from the treatment does in Adam's herd significantly underperformed the control kids after 30 days. It's not clear what caused this, but three possibilities seem most likely, perhaps in combination with each another:

- Something about the process may have inadvertently affected another aspect of the goats' lives. For instance, the process in this trial may have reduced the time mothers had to eat the base diet, or reduced how long the kids could nurse while the does were being gathered and hand-fed the sprouted grains.
- The properties of the sprouted grain may have been a bad match for the nutrition requirements of the does (Margaret, a trained ruminant nutritionist, speculates that the nutrients may have been too available and "shot right through them [the does]").
- Something detrimental, such as mycotoxin, could have been introduced to the sprouts by the sprouting process. This could have deterred Margaret's does and negatively affected Adam's nursing does.

Both Adam and Margaret are doing diet trials involving supplemental feeds again in 2025. They're making changes based on what they learned in this trial but hoping for more positive results.

AT ADAM LEDVINA'S, STATISTICAL ANALYSIS REVEALED THAT SUPPLEMENTING THE MOTHER DOES' DIETS WITH SPROUTED GRAIN REDUCED KID WEIGHT GAIN IN THEIR FIRST 30 DAYS BY 2.4 POUNDS.



Can We Reduce N Rates to Corn and Improve ROI?

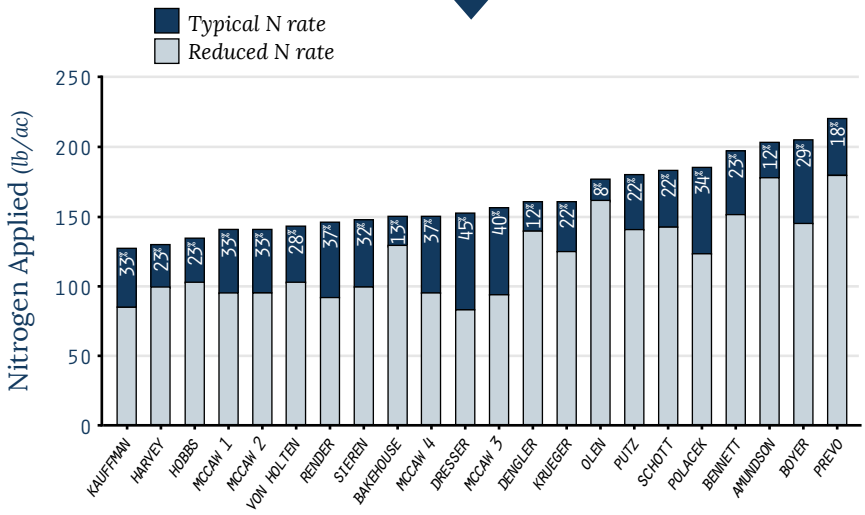
COOPERATORS

Alec & Rachel Amundson, *OSAGE, IOWA;* **Jon Bakehouse,** *HASTINGS, IOWA;* **Sam Bennett,** *GALVA, IOWA;* **Jack Boyer,** *REINBECK, IOWA;* **Sean Dengler,** *TRAER, IOWA;* **Brent Dresser,** *KEOKUK, IOWA;* **Robert Harvey,** *REDFIELD, IOWA;* **Arlyn Kauffman,** *WELDON, IOWA;* **Keaton Krueger,** *OGDEN, IOWA;* **Ross McCaw,** *MARENGO, IOWA;* **Lucas Olen,** *MORA, MINNESOTA;* **Tom Polacek,** *NEW BRIGHTON, IOWA;* **Kevin Prevo,** *BLOOMFIELD, IOWA;* **Don Putz,** *CEDAR FALLS, IOWA;* **Justin Render,** *SOUTH ENGLISH, IOWA;* **Larry Schott,** *RIVERSIDE, IOWA;* **Bailey Scott Hobbs,** *DUNNELL, MINNESOTA;* **Tim Sieren,** *KEOTA, IOWA;* **Chris Von Holten,** *WALNUT, ILLINOIS*

In the most recent round of nitrogen rate trials, 19 farmers across Iowa, Minnesota and Illinois took part in a total of 22 replicated strip trials to test whether they could reduce their nitrogen fertilizer rates while still maintaining strong yields and profitability. Many of these farmers have been using soil-health-promoting practices like cover crops, diversified rotations and no-till for at least five years. All cooperators chose their own nitrogen rate reductions, ranging from 8% to 45% of their typical rates. Four of the farmers went a step further and included strips with no applied nitrogen to investigate the nitrogen supply already in their soils.

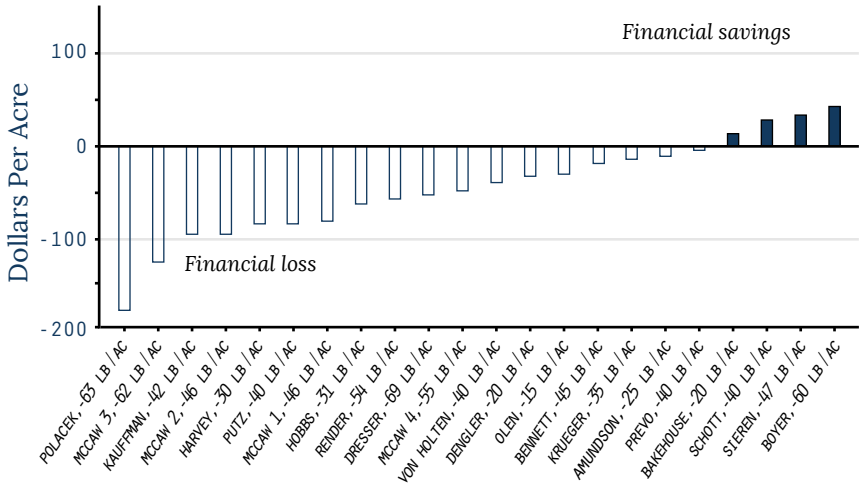
If farmers can maintain corn yields and save money at the reduced rate, it will boost confidence in trying more sustainable approaches. And even if the reduced rate lowers corn yields and loses money, the trials still provide valuable learning by giving farmers better insights into what works best for their farm and how additional long-term practices could help reduce their nitrogen rates in the future.

TYPICAL N RATES RANGED FROM 127-220 LB N/AC
On average, rates were reduced by 26% (15-69 lb N/ac lower than typical rate)



TWENTY-TWO TRIALS TESTED TWO NITROGEN APPLICATION TREATMENTS IN THE 2024 GROWING SEASON. A COOPERATOR'S TYPICAL N RATE IS SHOWN IN THE DARK BLUE BAR; THEIR CHOSEN REDUCED N RATE IS IN THE LIGHT BLUE BAR; AND THEIR REDUCTION RELATIVE TO THEIR TYPICAL RATE IS IN WHITE TEXT. FOUR OF THESE TRIALS ALSO INCLUDED TREATMENT STRIPS IN WHICH NO N WAS APPLIED (NOT PICTURED).

YIELD REDUCTIONS ARE NOT INDICATIVE OF FINANCIAL OUTCOMES *Four farmers saw savings when reducing N*



CHANGE IN FINANCIAL OUTCOMES (COLUMNS) AND CORN YIELD (SOLID, OPEN) WITH THE REDUCED N RATE. THE X-AXIS LISTS EACH FARMER AND THE AMOUNT BY WHICH THEY REDUCED THEIR TYPICAL N RATE TO ACHIEVE THE REDUCED N TREATMENT, ORDERED BY THEIR CHANGE IN FINANCIAL OUTCOMES WHEN REDUCING N RATES. THE Y-AXIS PRESENTS THE FINANCIAL OUTCOME IN THE REDUCED N TREATMENT RELATIVE TO THE TYPICAL N TREATMENT. SOLID COLUMNS INDICATE NO SIGNIFICANT CORN YIELD RESPONSE TO REDUCING N RATE. OPEN COLUMNS INDICATE A SIGNIFICANT NEGATIVE CORN YIELD RESPONSE TO REDUCING N RATE.

FINDINGS

Eighteen of the 22 replicated strip trials saw statistically significant reductions in corn yields at the reduced nitrogen rate. However, it's important to note that statistical significance in yield declines is not related to financial outcomes. After all, reducing the nitrogen rate also reduces costs, and this must be factored into net financial returns. The addition of a zero-nitrogen treatment this year provided valuable insights into the baseline productivity of these fields in the absence of synthetic nitrogen inputs.

> *"[THE MOST VALUABLE ASPECT OF CONDUCTING THIS TRIAL IS] BEING PART OF A GROUP RUNNING THE SAME TRIAL. IT HELPS CORROBORATE THE FINDINGS."*
>
> – TOM POLACEK

Using an average fertilizer cost ($0.72/lb N) and average corn price ($4.37/bu), four trials saved money in the reduced nitrogen treatment. Jon Bakehouse was one of the farmers. He saw similar corn yields (209 bu/ac) between two nitrogen rates that differed by 20 lb N/ac. The reduced rate, combined with no loss in revenue, improved Jon's financial returns by $14/ac.

All farms decreased greenhouse gas emissions by reducing nitrogen fertilizer. A metric referred to as the carbon dioxide equivalent, expressed as CO_2e, is used to standardize measurement of these emissions. The metric makes it possible to compare the global warming potential of different gases, which have different heat-trapping abilities and lifespans in the atmosphere, and to assess the overall climate impact of various activities and products. In this trial, farmers' greenhouse gas reductions ranged from 120-540 lb CO_2e/ac. Overall, farmers would have to apply their reduced nitrogen rate to 19-86 acres on their farms to offset the average annual emissions of a single vehicle.

Jon Bakehouse

Hastings, Iowa

Farm overview: No-till corn and soybeans, cereal rye cover crop, grazing

Typical N rate: 150 lb N/ac with chemical fertilizer, preplant and sidedress
Reduced N rate: 130 lb N/ac with chemical fertilizer, preplant and sidedress (-20 lb N/ac)

Corn yield, typical N rate: 211 bu/ac
Corn yield, reduced N rate: 207 bu/ac *(not statistically different than typical)*

Cost savings from reduced rate: $14/ac
Area to apply reduced rate to offset GHG of one car: 65 acres

"We've been running this kind of trial for many years, so we've already learned a lot. It is amazing that we are still gleaning useful information after all these years." – Jon Bakehouse

Want to put your soil health to the test?

We're looking for corn farmers in Illinois, Iowa, Minnesota, Missouri, Nebraska and Wisconsin to join this multiyear project. Eligible fields will have at least a five-year history of soil health practices (cover crops, diverse rotation, integrated grazing, reduced tillage, etc.). The trial involves eight treatment strips. Four strips will receive your typical fertilizer rate, and four strips will receive a reduced rate of your choosing.

Reach out to PFI's cropping systems research coordinator, Roberta Bianchin Rebesquini, at roberta.rebesquini@practicalfarmers.org to sign up or learn more.

Effect of Covering Brassicas Seeded for Transplant

COOPERATORS	**Jill Beebout,** *BLUE GATE FARM, CHARITON, IOWA;* **Hannah Breckbill & Emily Fagan,** *HUMBLE HANDS HARVEST, DECORAH, IOWA;* **Natasha Hegmann & Pete Kerns,** *TURKEY RIVER FARM, ELKPORT, IOWA;* **Roxane Mitten,** *IOWA CITY, IOWA;* **Carly & Ethan Zierke,** *SWEET SEASON FARM, CALMAR, IOWA*

Turning on the grow lights or the heater in the greenhouse is an exciting harbinger of spring for many vegetable farmers. Because starting seedlings is a repetitive chore that takes a lot of time, energy and materials, it's also an ideal practice to experiment with as small changes could lead to big efficiency improvements. In a seed-starting trial conducted last spring, Jill Beebout, Hannah Breckbill and Emily Fagan, Natasha Hegmann and Pete Kerns, Roxane Mitten, and Carly and Ethan Zierke tested whether covering their brassica seeds with soil when starting them in trays affects germination rates and transplant viability.

Carly Zierke seeding kohlrabi into soil blocks in March 2024 for her trial near Calmar, Iowa.

Left photo: In these trays from Roxane Mitten's trial near Iowa City, Iowa, seeds that were left uncovered are on the left side of the tray and seeds that were covered are on the right. Many of the uncovered seedlings did not germinate.

Right photo: Roxane observed that uncovered seedlings were also a bit smaller and had less robust root systems.

> *"SEED-STARTING IS A FOUNDATIONALLY IMPORTANT PART OF OUR OPERATION. WE GROW 99% OF THE TRANSPLANTS WE USE, SO IMPROVING THAT PROCESS MAKES A LOT OF SENSE."*
>
> -JILL BEEBOUT

FINDINGS

Three out of the five farms found that covering brassica seeds resulted in higher germination rates (15% on average), and one farm found that covering resulted in 15% more plants that were healthy enough to be transplanted. Farmers concluded that they would continue covering their brassica seeds, though some said they might skip it if they were pressed for time.

This was beginning farmer Ethan Zierke's first trial with the Cooperators' Program, and he is excited to continue using trials to fine-tune his practices. He reflected that "there are countless things we do daily because we think we need to. It's always a good feeling to implement a practice that is supported by experience and data."

Planting Date and Method for Overwintering Spinach

COOPERATORS

Hannah Breckbill & Emily Fagan, *HUMBLE HANDS HARVEST, DECORAH, IOWA;* **Natasha Hegmann & Pete Kerns,** *TURKEY RIVER FARM, ELKPORT, IOWA;* **Mark Quee,** *SCATTERGOOD FRIENDS SCHOOL FARM, WEST BRANCH, IOWA*

Overwintering spinach is the practice of insulating a fall-planted spinach crop through the winter. This practice produces an early-spring crop of sweet, delicious spinach. However, farmers routinely have questions about when and how to plant and manage spinach for overwintering, especially in increasingly volatile shoulder-season weather. In 2023, a group of PFI farmer-researchers wanted to continue their previous research investigating the best time to plant spinach for overwintering and test whether direct-seeding versus transplanting performed better. They direct-seeded and transplanted spinach between Sept. 1 and Sept. 14, 2023, and again between Sept. 21 and Oct. 5.

"I'M GLAD I DID BOTH TRANSPLANTING AND DIRECT-SEEDING. IN THE FUTURE, I'LL DEFINITELY DIRECT-SOW OVERWINTERED SPINACH, BUT I STILL NEED TO WORK OUT SOME OF THE DETAILS."

-MARK QUEE

PETE KERNS SEEDING HIS OVERWINTERING SPINACH TRIAL ON SEPT. 8, 2023.

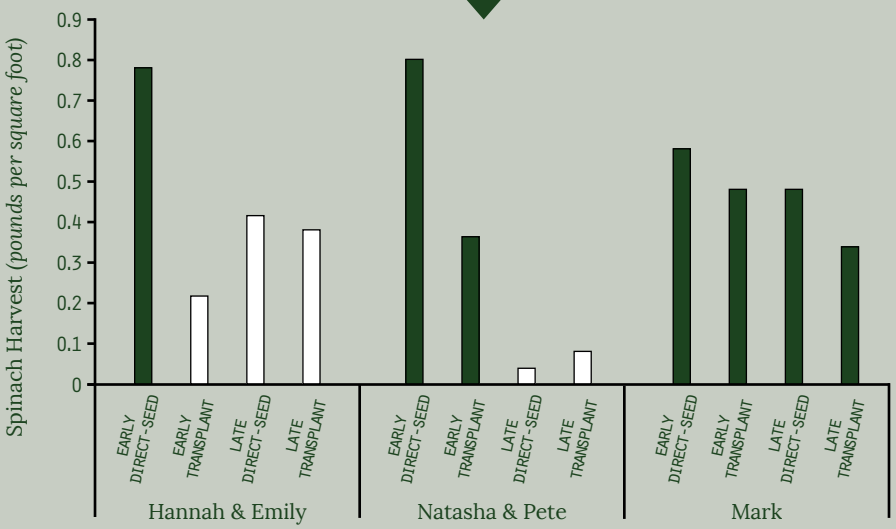
NATASHA AND PETE'S SPINACH TRIAL UNCOVERED IN SPRING 2024. THE PLOTS WITH LITTLE SPINACH ARE LATER-TRANSPLANT TREATMENTS.

FINDINGS

At Pete and Natasha's and Emily and Hannah's trial locations, early-September plantings outyielded late-September plantings of spinach. At Mark's, yield was not affected by planting date, but the number of harvestable plants was greatest in the late-September direct-seeded treatment. Pete and Natasha noted that yield was not the only important criteria they paid attention to, and that their later spinach plantings produced a sweeter and higher-quality product the following spring.

Pete reflects: "I think I could use two different methods of late-fall/early-spring spinach production. If I am not interested in a fall harvest and getting the most production, I will do a later transplant. If I just want high production and I want to harvest in the fall and the spring, I think that early planting is the way to go."

STATISTICAL ANALYSIS REVEALED THAT AT HANNAH AND EMILY'S FARM NEAR DECORAH, IOWA, EARLY DIRECT-SEEDED SPINACH PERFORMED BEST. AT NATASHA AND PETE'S FARM NEAR ELKPORT, IOWA, EARLY-SEEDED OR EARLY-PLANTED SPINACH PERFORMED BEST. THERE WERE NO SIGNIFICANT DIFFERENCES IN YIELD AT MARK'S FARM NEAR WEST BRANCH, IOWA.



Biochar Seed Treatment for Corn

COOPERATORS	**Jack Boyer,** *REINBECK, IOWA;* **Robert Harvey,** *REDFIELD, IOWA;* **Rob Stout,** *WASHINGTON, IOWA*

Biochar is a fine-grain charcoal material produced by heating organic materials such as wood or straw to a very high temperature in the absence of oxygen. Biochar contains a high proportion of organic carbon (at least 10%). It physically and chemically holds onto nutrients and water quite well, and breaks down very slowly in soil conditions. Because of these qualities, farmers have been hearing a lot about using biochar either as a seed coating or as a more substantial soil amendment to enhance seedling establishment, plant growth and yields.

In 2024, Jack Boyer, Robert Harvey and Rob Stout decided to test whether one biochar plus compost tea product, EarthBrew, affected their corn yield when used as a seed coating at the manufacturer's recommended rate. All three farmers cited the potential to increase yields and improve profitability as the reason why they were interested in the trial.

"THIS YEAR, I SAW DIFFERENT RESULTS FROM LAST YEAR, WHEN THERE WAS POSITIVE YIELD IMPROVEMENT IN MY BIOCHAR TRIAL. SEEING THE VARIABILITY FROM YEAR TO YEAR WAS VALUABLE."

-JACK BOYER

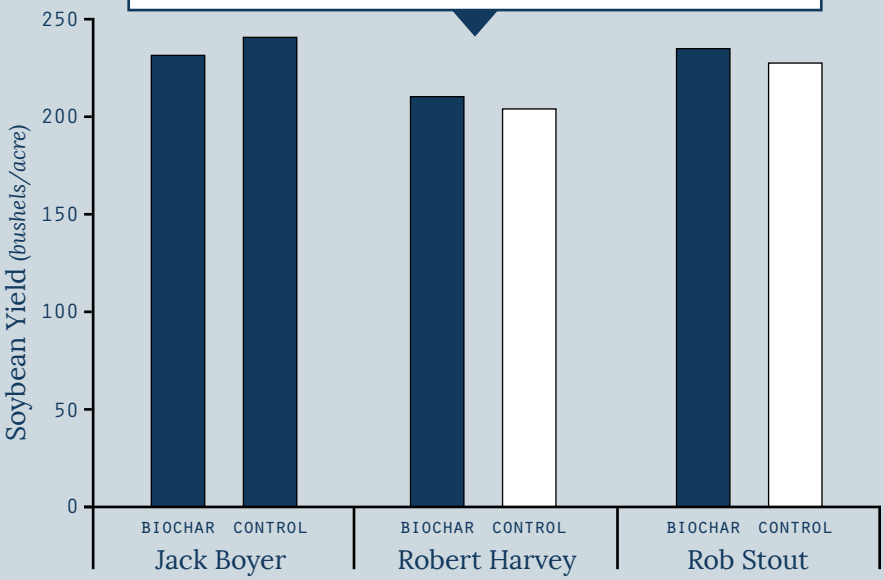
ROB STOUT (LEFT) AT HIS FIELD DAY IN JUNE 2024 THAT SHOWCASED THE TRIAL; ROBERT HARVEY (CENTER) AND JACK BOYER (RIGHT) AT THE COOPERATORS' MEETING IN DECEMBER 2024. ROBERT PRESENTED THE RESULTS OF HIS BIOCHAR TRIAL AT THE MEETING, AND JACK RECEIVED PFI'S MASTER RESEARCHER AWARD FOR COMPLETING MORE THAN 20 ON-FARM TRIALS AND HOSTING AT LEAST FIVE PFI EVENTS.

FINDINGS

Both Robert and Rob found that using EarthBrew biochar as a seed coating modestly increased their corn yield by 6 bu/ac and 10 bu/ac, respectively. Jack, however, found no difference in yield between his corn treated with EarthBrew and his corn that was not treated.

Robert, who found that biochar increased his corn yields this year, nevertheless says that, based on past observations and Jack's results, this may not be the outcome in every year or field in which he uses biochar as seed treatment. He says that in the future, "hopefully more farmers will participate" so they can get an even better idea of how biochar affects corn yields in different situations.

STATISTICAL ANALYSIS REVEALED THAT EARTHBREW BIOCHAR INCREASED CORN YIELD FOR ROBERT AND ROB, WHILE THERE WAS NO SIGNIFICANT YIELD EFFECT AT JACK'S FARM.



Biostimulant Products' Effects on Corn Yield

COOPERATORS	**Jack Boyer,** *REINBECK, IOWA;* **Robert Harvey,** *REDFIELD, IOWA;* **Joshua Hiemstra,** *BRANDON, WISCONSIN*

Biostimulants are a category of input separate from fertilizers and pesticides that are marketed as improving plant performance. A range of biostimulant products is available, including various microbial cultures, coal extracts and plant and algae extracts. The biostimulants trialed in this project were products intended to introduce beneficial microbes to crops. The idea is that plants can harness the microbes' biological processes to boost plant performance.

Cooperators involved with this trial wanted to find out if biostimulant products improve corn yield, are cost-effective and let them potentially reduce their nitrogen fertilizer rate. The trial focused on three products: EnSoil Algae on Jack Boyer's farm; Utrisha N on Robert Harvey's farm; and Biolife Liquilife+ on Josh Hiemstra's farm.

"I've tried this product in the past with better results. [The results] give me questions about weather and yield, and we need more years to determine if the product is giving ROI [return on investment] in poor-weather years or just good ones."

-JOSH HIEMSTRA

Harvesting Josh's trial near Brandon, Wisconsin, on Oct. 15, 2024.

FINDINGS

Biostimulants showed mixed results in trials this year. Jack saw a significant 49% increase in yield with EnSoil Algae in one field, to which he had also applied 136 pounds of nitrogen per acre. In another field, where he used only 119 pounds of nitrogen per acre and had more standing water, Jack saw no significant difference in yield. Robert saw no significant yield differences between Utrisha and control treatments.

Josh, on the other hand, saw a significant 4% yield decrease with his combined treatment of Liquilife+ and reduced nitrogen fertilization rate compared to the control. He wanted to see whether the biostimulant could make up for the lower nitrogen rate, which it might have only partially done. In three of the four trials, financial returns were less with the biostimulant. The success of Jack's first trial, and his observations that all algae-treated plants seemed greener than their respective controls, raised interest in the EnSoil Algae product. Several trials in 2025 are investigating the product on different farms and crops.

Statistical analysis found that a biostimulant led to a positive corn yield and financial return in only one of the trials (Boyer 1).

	BIOSTIMULANT	N-RATE(S) (lb N/ac)	DID BIOSTIMULANT INCREASE YIELD?	NET RETURNS ($/ac)
Jack Boyer 1	EnSoil Algae	136	Yes, +95 bu/ac	+$341.36
Jack Boyer 2	EnSoil Algae	119	No	-$18.00
Rob Harvey	Utrisha	130	No	-$26.12
Josh Hiemstra	Liquilife+	115, 88	No, -5 bu/ac	-$28.66

Two Types of Tarping To Suppress Weeds

COOPERATORS

Hannah Breckbill & Emily Fagan, *HUMBLE HANDS HARVEST, DECORAH, IOWA;* **Marlon Mormann,** *WEST DES MOINES, IOWA*

Tarping is an increasingly common no-till method for preparing beds on vegetable farms. Farmers place and secure clear or black plastic tarps on a bed and leave them out for at least a few weeks. Both types of tarp trap heat and moisture, allowing any seeds in the top layer of soil to germinate. With black "occultation," or light-blocking tarps, heat and lack of light for photosynthesis kills cover crops and any germinating or existing weeds. With clear "solarization" tarps, direct sunlight heats the ground up enough to kill the plants and potentially sterilize ungerminated seeds.

In 2024, Hannah Breckbill and Emily Fagan conducted a trial exploring how long they should leave a black tarp on to terminate annual weeds in late-May through June. Marlon Mormann conducted a trial comparing ground cover in plots where a clear tarp was used from mid-April through May with plots where no tarp was used.

EXAMPLE OF A CLEAR TARP ON MARLON MORMANN'S FARM NEAR WEST DES MOINES, IOWA.

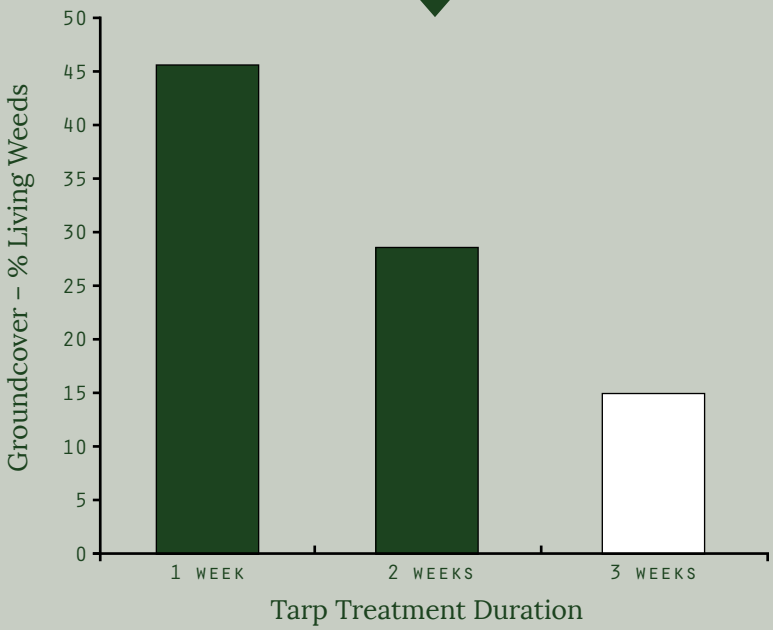
WEED COVERAGE 19 DAYS AFTER TARP REMOVAL IN TARPED PLOTS (LEFT) AND NON-TARPED PLOTS (RIGHT) AT MARLON MORMANN'S. MARLON OBSERVED THAT MANY OF THE WEEDS REGROWING IN TARPED PLOTS WERE GRASSES. PHOTOS TAKEN JUNE 16, 2024.

FINDINGS

Hannah and Emily found that three weeks of tarping with black tarps reduced the coverage of living annual weeds and resulted in more bare ground at tarp removal compared to one week of tarping. However, one week after removing the tarp, there was no difference in weed coverage between the three tarping treatment lengths. The weather in mid-June was particularly warm and wet, which could have contributed to increased annual weed germination.

Marlon's clear tarps successfully reduced the number of living perennial weeds on his plots compared to not tarping, but there were still some living perennial weeds after clear-tarping for 46 days. Marlon also began to see weed regrowth several weeks after removing the clear tarp. Overall, Marlon was pleased that the clear tarps let him plant his sweet corn into largely weed-free plots without additional herbicide. He plans to continue using and experimenting with tarps in production areas with particularly bad weed issues.

HANNAH AND EMILY OBSERVED FEWER LIVING WEEDS AFTER THREE WEEKS OF TARPING THAN AFTER ONE OR TWO WEEKS OF TARPING ON THEIR FARM NEAR DECORAH, IOWA.



Growing Tomatoes for Sale vs. Seed

COOPERATORS

Hannah Breckbill & Emily Fagan, *HUMBLE HANDS HARVEST, DECORAH, IOWA*

Horticulture farmers sometimes grow seed for regional seed companies to diversify their enterprises or just to try something new. But for farmers who have not grown seed before, it can be hard to tell if the payment they receive is worth the labor and time required. This is especially true for a plant like tomato that needs post-harvest processing to harvest the seeds.

This year, Hannah Breckbill and Emily Fagan signed a contract to grow a half-pound of KC 146 tomato seed for $225. They decided to compare the enterprise budgets of growing tomatoes for sale versus growing tomatoes for seed. Through the trial, they tracked the time, labor and materials required for both enterprises over the course of the growing season.

HANNAH AND EMILY

HANNAH AND EMILY GREW SEVERAL VARIETIES OF TOMATOES FOR MARKET, BUT JUST ONE FOR SEED PRODUCTION ON THEIR FARM NEAR DECORAH, IOWA.

> *"[THE MOST USEFUL ASPECT OF THE TRIAL WAS] THE ACCOUNTABILITY TO KEEP GOOD TRACK OF THE DETAILS. IF I WASN'T DOING THIS FOR A PFI TRIAL, I WOULD BE LESS ORGANIZED AND NOT KEEP GOOD-ENOUGH TRACK OF THINGS TO COME TO A REAL CONCLUSION."*
>
> -EMILY FAGAN

FINDINGS

After accounting for all supplies, labor and infrastructure, tomatoes for sale had a net income of $1,263 while tomatoes for seed had a negative net income of -$59 (see table). Both tomato plantings also produced more fruit than Hannah and Emily needed for sale or for seed production, and they left a lot unharvested in the field.

Despite finding that the enterprise was not profitable this year, they don't feel ready to stop growing tomatoes for seed just yet. If Hannah and Emily get another tomato seed contract, they say they'll make the enterprise more profitable by planting fewer tomato plants overall and selling some of the excess fruit from the seed tomatoes.

By the numbers, Hannah and Emily lost money on their tomato seed enterprise and made money on their tomato sale enterprise, despite higher total costs associated with the sale enterprise.

	SEED	SALE
Supply, land, machinery and irrigation costs	$52	$148
Building and structure supply costs	$79	$223
Labor cost (owner and hired labor combined)	$153	$338
Total costs	$284	$709
Seed contract amount or market sales	$225	$1,972
Net income	-$59	$1,263

On The Horizon

In December 2024, about 90 current and would-be Cooperators' Program participants gathered in Ames, Iowa, to share their results from 2024 and make plans for future research projects. The work currently underway includes both extensions of projects featured in previous pages as well as entirely new efforts. Beyond the specific objectives of the projects listed below, cooperators tell us that personal growth and interest in learning are largely what motivates them.

Field Crops

- Alternative Cover Crops to Cereal Rye
- Bioguard Seed Treatment for Organic Corn
- Biologicals Products Impact on Corn Yield
- Can We Reduce N Rates to Corn and Improve ROI?
- Companion Cover Crops for Oats
- Cover Crop Mixes After Small Grains
- Do Cover Crops Increase the Number of Days Suitable for Field Work?
- N Rate Reduction Impacts on Subsequent Soybean Yields
- Organic Cutworm Control
- Seeding Rate for Frost-Seeded Red Clover Cover Crop
- Soybean Sulfur Fertilization
- Strip-Till vs. No-Till Soybeans or Corn Following a Cover Crop

Horticulture

- Broccolini Variety Trial
- Corn Gluten vs. Straw for Weed Suppression
- Cowpea Variety Performance as a Summer Cover Crop
- Enterprise Budget: Seed for Contract vs. Sale, for Cucurbits or Tomatoes
- Hydroponic Romaine Lettuce Variety Trial
- Irrigation Impact on Potatoes
- N Fertilizer Rates for Vegetable Crops
- Organic Weed Suppression Methods in Woody Perennial Plantings
- Planting Date for Potatoes
- Spring Bush Snap Pea Variety Trial
- Strawberry Packaging Effect on Shelf Life
- Summer Broccolini Variety Trial
- Summer Cover Crop Mixes
- Summer Romaine Lettuce Variety Trial

Livestock

- Bale Grazing on Pasture
- Broiler and Layer Chicken Feed Trial
- Cover Crop and Barn-Finished Hogs
- Dairy Goat Feed Supplements
- White Ranger vs. Other Broiler Breed Comparison Trial

Meanwhile, we're already looking ahead to projects that will start this fall and continue into the 2026 growing season. Let us know if you'd like more information about any of these opportunities:

- Alternative Cover Crops to Cereal Rye for Corn or Soybeans
- Can We Reduce N Rates to Corn and Improve ROI?
- Do Cover Crops Increase the Number of Days Suitable for Field Work?

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Want to Learn More?

If anything in this report has piqued your interest or spurred any questions, please get in touch with us – we'd love to hear from you. Maybe you want to learn more about the Cooperators' Program or hear more about a trial directly from a cooperator. Or maybe you have some ideas of your own. Is it time to give it a try and put it to the test with on-farm research?

We look forward to hearing from you,

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