

No·till

On The Plains

No-till on the Plains Members Committed to Promoting Soil Health

Soil health enthusiasts gathered for two summer field days that showcased companion cropping plots and the progress of those crops.

The field days, hosted by No-till on the Plains, provided a first-hand look at a variety of cover crops and let attendees walk down into a soil pit to witness soil structure and water infiltration. The events also featured Candy Thomas, Regional Soil Health Specialist for Kansas and Nebraska with the Natural Resources Conservation Service Soil Health Division, who serves as a director on the No-till on the Plains board.

The field days were offered through a grant from the Sustainable Agriculture Research and Education (SARE) program.

During the events Feikert Farms and Knopf Farms featured their grain sorghum plots, a grain that has not traditionally been partnered with companion crop. Sorghum is a water conserving crop and the field days could show it as a profitable alternative to corn or soybeans, because it can extend the life of shrinking groundwater resources. No-till on the Plains members believe the addition of companion crops will undoubtedly improve soil health by adding additional roots into the rhizosphere, increasing fungal growth, sequestering carbon and increasing organic matter.

“We are still seeing need for some nitrogen although we’ve cut back 20% with no yield loss.” Keith Thompson

Doug Palen, Mitchell Co. Kan.; Lance Feikert, Ford Co. Kan.; Justin Knopf, Saline Co. Kan. and Keith Thompson, Osage Co. Kan. are the featured growers participating in a SARE grant demonstration project. Each grower planted 15 dryland acres of the sorghum/companion

mix adjacent to a field of sorghum planted without companion crops. Companion crops were designed to work in symbiosis with the cash crop; suppressing weeds and attracting beneficial insects. Acres with the sorghum/companion mix had no additional treatment



of herbicides or insecticides applied once in the ground. Adjacent fields with treatment of crop protection products are being used as a

comparison. Soil health will also be analyzed on each plot by looking at different indicators that demonstrate improvement.

“We want to showcase this growing method because we expect more acres will be planted in the future using this type of cropping pattern, diversity and ecological management,” Steve Swaffar, No-till on the Plains executive director, said. “Once the plot work proves effective, we do expect the participating producers will likely plant more acres on their own farms and share the information with neighbors and other local producers. The application of companion crops can also be expanded to other cash crops besides sorghum. We hope to see in these long term no-till systems a number of ecological improvements with improved soil health. It is possible to increase nutrient cycling, water infiltration, enhance biological population regulation and improve weed suppression resulting in decreased inputs to the system. The improvement to soil health ultimately should increase the bottom line to these producers.”

Doug Palen, Mitchell Co., has been in a no-till cropping system for over 20 years and has frequently planted

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Promoting Soil Health

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sorghum as part of his rotation in north central Kansas. Palen is consistently part of a peer group that frequently tries different projects and shares information. He became interested in the concept of intercropping and chose to participate in the study to learn how this method would work with traditional practices in sorghum.

“This initial year we tried not to change anything but to introduce the intercrop species,” Palen says. “I had some reservations about what the existing herbicide program would do and learned it was tough on intercrops. In the future I will tweak from a herbicide standpoint and allow those to survive, but time will tell.”

Lance Feikert, Ford County in southwestern Kan., has one decade of no-till farming, emphasizing sorghum, under his belt.

Justin Knopf, Saline County in north central Kan., became involved in the SARE study because of the opportunity to add diversity to his farm and find ways to combat weed pressure. With 20 years of cropping system and using sorghum as part of his rotation he started the study with a clean seed bed and put on atrazine at sorghum planting time. Knopf says it has been successful to intercrop along with milo, though he’s still looking for the silver bullet on weed control. Knopf also planted food grade sorghum and will

eventually market it differently than conventional sorghum because of his involvement in a peer group, called Ground Growth Network.

“We have a goal of connecting food companies in the supply chain that want a direct relationship with farmers who use regenerative practices,” he says. “The farmers would provide raw ingredients to those companies and I see food grade sorghum as an option to provide value during this connection.”



Thompson uses a John Deere air seeder to drill sorghum into cereal rye.

Keith Thompson, Osage County in eastern Kansas, is always looking to improve profitability, while also maintaining yields. His family farm has been in a no-till cropping system for more than 30 years and has frequently planted sorghum as part of his rotation. He and son, Ben, also practice companion cropping with sunflowers. Thompson says he enrolled in the SARE study to help tweak the system his farm already has in place.

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“This study is an interesting concept and could be incorporated into a larger field to provide data between what we are doing now and what is hopefully a profitable learning experience,” Thompson says. “We do small plots and actually picked a small field to practice on. That way if something doesn’t pay it doesn’t break the farm.”

So far, Thompson has seen excellent results from his method of weed and insect control – without having to use extra control measures. They’ve also cut back on most fertilizer needs and he hopes the SARE project will address this as the 15-acre sorghum plot was seeded with no fertilizer at all.

“We are still seeing need for some nitrogen although we’ve cut back 20% with no yield loss,” he says. “This is where we hope the companions fill that in. We will see, so far everything is looking good, lack of rain is and may be a bigger detriment than anything else.”

At each field day, Candy Thomas provided the soil sampling and infield soil health assessments of both treatments.

No-till on the Plains Winter Conference is set for January 29-31, 2019 at the Hyatt Regency and Century II Convention Center, Wichita, Kan. Online registration is available now at notill.org.

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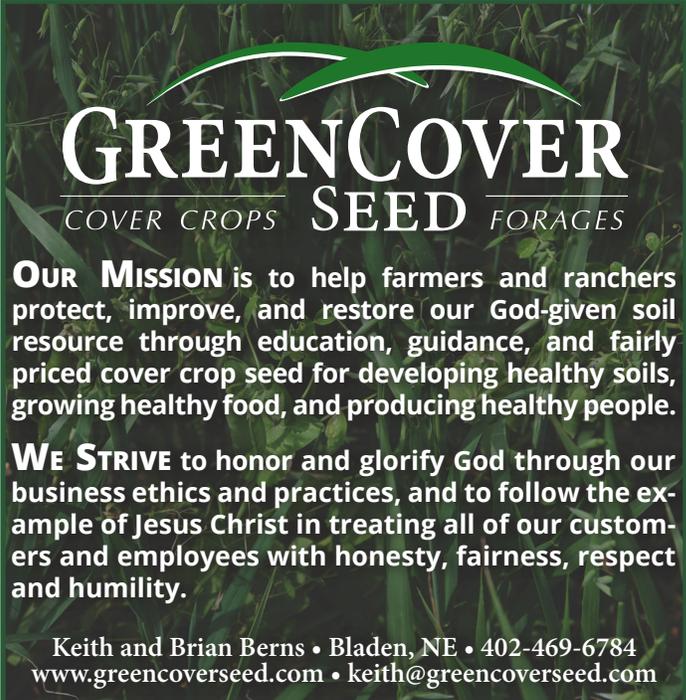
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Jacob Farms Uses Cover Crops to Grow Strong Soil

Starting down the path of cover crops was a definitive decision for Ryan Speer.

In 2007, this southern Kansas farmer chose to integrate covers into his no-till soybean fields as a way to build organic matter for weed suppression. Today, Speer's fields have a living root growing on every acre, whether it be a cash crop or a cover crop, 365 days a year if possible.

That is Speer's simple, holistic goal now for his no-till farm in Sedgwick, Kan. Since 2000 he has grown wheat, corn, soybeans, milo and now, cotton, in addition to cover crops.

"Many farmers struggle with weed control in soybeans and it is very expensive to manage weeds chemically," Speer says. "Cover crops are an economical way to help control weeds with less chemicals."



Speer began the venture with covers using rye, planting it in front of his soybeans and after he cuts corn. Weeds are controlled by limiting the amount of evaporation and sunlight reaching the soil. Cover crop literally cover the soil and it stays cooler, creating a canopy to hold moisture in the heat of the summer. Without the sunlight the weeds can't germinate as easily. Speer says this method is the easiest time frame to incorporate covers. "There is an open window in the fall to do it, now from September to November," he says. "It's an easy first step."

Speer says whether it's rye or triticale, the effort to be more diversified is the right move to take to care for the soil.

"We started with rye to build organic matter on top of the weed suppression," he says. "Weed control with roundup resistant pigweeds is much better but it's not a cure all. We've definitely cut the weed population by 50 to 70 percent using cover crops."

Most of time, Speer says he can limit a chemical application to just one spray, versus numerous applications for weed control without cover crops.

After having good luck with rye, Speer looked to Green Cover Seed to diversify his cover crops. Today he plants a wide variety including rye, triticale, barley, radishes and Austrian winter peas. The peas were used to offer grazing for his cows, which he raises to market local beef. Cover crops can be very diverse and, Speer says he enjoys the mix and watching the different crops come to fruition.

For the past year, Speer has integrated cotton, to include a broadleaf crop into his rotation. He says it is going well at this point but cotton requires more management than wheat or milo. Speers adds that he is up for the challenge.

"Management is what makes this system successful and fun," he says. "The incentive is a high price for cotton but the effort is also a big investment."



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Contact No-till On The Plains:
Steve Swaffar
P.O. Box 81
Berryton, KS 66409
Call: 785-210-4549
Email: swaffar@notill.org

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