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4 STRATEGIES FOR EFFECTIVE NO-TILLING

27th Annual NATIONAL NO-TILLAGE CONFERENCE
January 8-11, 2019 • Indianapolis, IN

Industry experts share advice for building profitable no-till systems.

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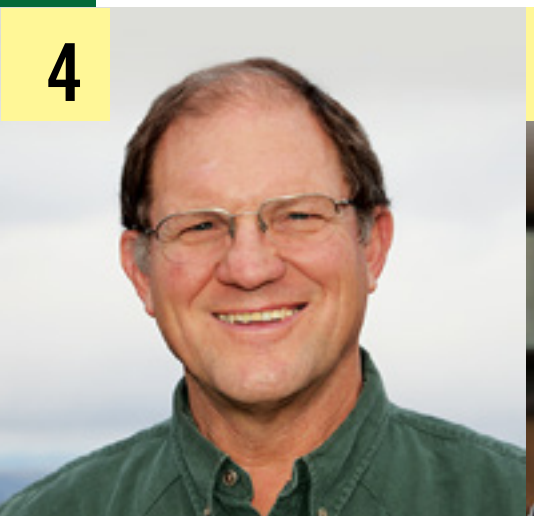

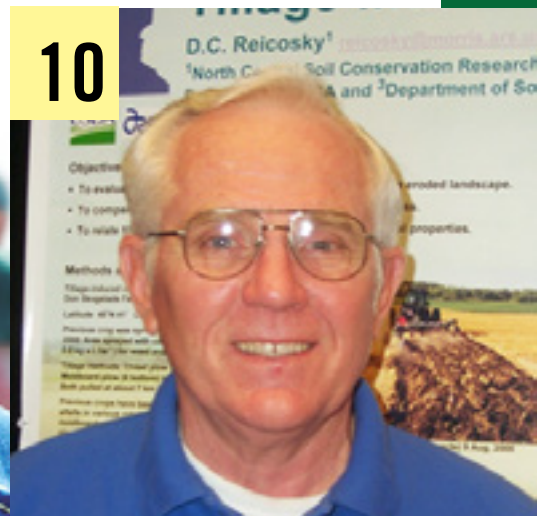

Letter From the Editor

Developing a successful no-till farming operation requires answers to tough questions that can be answered only through experimentation, persistence and knowledge gained through years in the field. What are the best biological practices for building sustainable soil health? How can you launch a cover crop program and slash the fertilizer bills? How do you determine whether or not it's best to plant cash crops into cover crops green? Why no-tillers can sometimes pull into their fields 2-3 days earlier than conventional tillage counter pulls after a heavy rain?

In this e-Guide, four no-till innovators who have invested numerous resources and energy, share their answers to these questions. They're eager to share their experiences to help you avoid the hard lessons they've learned studying and developing no-till systems. You'll get clear, actionable strategies you can implement right now in your no-till operation.

The experts you'll meet in this eGuide are just a few of the dozens leading no-tillers, agronomists, ag engineers, crop consultants and researchers who will speak at the 27th annual National No-Tillage Conference, from January 8-11, 2019, at the Indianapolis Marriott Downtown in Indianapolis, IN. Network, learn, focus and succeed – that's what the National No-Tillage Conference promises. And we back it up with a 100% money-back guarantee. It's a no-time-wasted educational agenda featuring 13 general sessions, 23 classrooms and 81 peer-to-peer roundtables, led by top no-till authorities like those featured in the pages of this report. They're eager to share their innovative ideas to help you be more profitable and get the most out of your no-till system.

By attending this world-class educational event, you'll not only gain REAL money-making strategies to immediately implement on your farm (2018 attendees estimated they took home $16,216 worth of new ideas), you'll also experience unlimited hallway networking with the most pioneering, forward-thinking no-tillers from operations of all sizes, locations and skill levels. From the curious observer to the seasoned no-tiller, there will be no shortage of knowledge to gain and connections to be made this January in Indianapolis!

Because you took the time to download this eGuide, you are entitled to an exclusive discount on conference attendance.

Save $50.00 off the cost of registration by visiting www.No-TillFarmer.com/offer50 and sign up for the event today for just $339. Save even more when you register additional farm/family members for only $312! Your friends can get a discount too — simply tell them to download this eGuide!

See you in Indianapolis!

John Dobberstein
Senior Editor
No-Till Farmer | National No-Tillage Conference

Strategy #1

Making No-Till 'Conventional' is the Goal

Dick Wittman

Baby Steps

While direct-seeding is a great practice, easing into it was better for us and something Wittman encourages others to do as well. "We had great advisors coaching us to consider a long-term conversion from intensive tillage to direct-seeding," says Wittman. "We went from moldboard plowing to chisel plowing to discing to eliminating tillage entirely. Slowly weaning ourselves off tillage gave our soil structure time to adapt."

Doubling Up

The debate among many no-tillers between hoe vs. disc as the ideal seeding tool continues. "We've concluded that with our diverse crops and field conditions, we're better off keeping both types of drills on our farm. We've tried just about every drill and attachment made."

Securing Nitrogen

"When we seed, we're putting down dry fertilizer, liquid P and sulfur, and liquid N in an anhydrous solution." A solution of P and sulfur is injected into the ground and the anhydrous injects behind the solution. The interaction between the two products creates a salt-like substance in the soil, making it a more stable form of fertilizer. The N doesn't leach away or gas off as badly. "Not all our N goes down at planting. With our moisture levels and soil types, leaching isn't normally a problem. In fact, we want the N to move a little deeper in the soil profile. A fall application gives the N some time to work down, then we put the rest of our N down with the seed in the spring."

"Surprisingly, one of the benefits has been upscaling productivity on poorer soils by dialing back the amount of N and other

nutrients we're applying to those acres. Prior to precision placement, we over-fertilized poorer-yielding acres, especially the shallow soils on field perimeters. They didn't have the capacity to store water or nutrients needed to produce a large yield." It's become more affordable and profitable to farm marginal acres.

Burning the "Green Bridge"

We've learned it is critical to ensure there is no "green bridge" effect to harbor pests and soil pathogens that transfer from crop to crop. The green-bridge effect can result in a 50% yield loss. When there's a sprayer skip in the field, you can watch the yield monitor plummet, so we're very proactive about preventing green bridges.

Always Adapting

No-till isn't a religion, but rather a management approach. There are no hard-and-fast rules and a lot of good farmers have figured out many different ways to produce food in a safe, healthy and efficient manner. Our no-till cropping approach, along with a healthy rotation, should preserve and build soil health. If you're not improving soil health, you're not sustainable — you're just putting on a Band-Aid.

For more information on preserving and building soil health see full article here

› Don't miss Dick's presentation, REGISTER TODAY!

Strategy #2

Tips for Reducing Nitrogen Leaching, Managing Inputs and Battling Slugs

Trey Hill

Planting 'Green'

The focus of Hill's latest efforts have been both understanding how much N his cover crops sequester in the soil profile and when it becomes available again for his primary crop. These questions feed into his larger concern of determining whether or not it's best to plant into his cover crops green — which is to plant his cash crops into actively growing cover crops, rather than killing them prior.

"I used to terminate covers as early as possible," Hill says. "Our thinking was, the faster you kill them off, the sooner you clean up the seedbed. We were always taught that a clean seedbed was ideal. We did this until about 5 or 6 years ago when we started letting them live longer. Initially the main reason we started switching was plantability. Last year we planted about 30-40% green, but this year we have already jumped that up to close to 100%."

Studying Nitrogen

While Hill feels comfortable with the assumption that cover crops reduce N leaching and release their nutrients back into the soil profile as they die off, he wanted more precise information regarding just how much N is sequestered and exactly when it becomes available.

To achieve this, he became a part of the High-Yield Conservation Project funded by the Howard G. Buffett Foundation. As part of the program, test plots were set up on Harborview Farms to examine just how well cover crops were reducing N runoff. The 10-acre test plot consists of five strips replicated three times: two strips of cover-crop mixes, a strip of cereals, a strip of radishes and a control strip with no cover crops. The results came back conclusively across all the sample times that N was leaching much more through the control strip.

Mandating Fertility

State-mandated nutrient management planning, annual random audited soil tests and restrictions against fall fertilizer applications play some role in determining parts of Harborview Farm's fertility program, but Hill believes in staying ahead of regulation. "If I can figure out how to analyze and interpret data from a straight cereal mix, it will let me know where I had excess N from the last year," Hill says. "Wherever the cereals were really green, I put too much on the previous year, and wherever they're yellow, I didn't have enough. That's a simplified look at it, but that information could be useful."

4 Strategies For Effective No-Tilling

Controlling Slugs

In the past, fighting with slugs has been so intense that it temporarily forced Hill back into full tillage in some fields. "While moving more acres to no-till, we've been running into huge issues with slugs. Ten gallons or so of 32% at night won't burn so much corn, but it does melt the slugs.

But still, it really didn't do much for our issues. Remembering hot spots from previous years tends to help with predictability, but they're really hard to scout for and there just aren't insecticides that reliably kill them."

The two methods Hill did find effective were using Amvac's Deadline Bullets slug bait and suspended liquid potash. When using slug bait, he says the key has been finding the slug hot spot and reacting to it early with multiple applications.

For more tips for reducing nitrogen leaching see full article here

› Don't miss Trey's presentation, REGISTER TODAY!

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Strategy #3

How Seeding Cover Crops can Slash Fertilizer Bills

David Brandt

Three-Way Rotation is Key

Brandt's goal is to get 100% of his 1,150-acre farm near Carroll, Ohio, covered with some kind of cover crop. He's hit about 90% of acres the last 3 or 4 years. He's turned this bottom-line approach to evaluating covers into a science. The last few years, in fields with 6- or 12-way mixes, Brandt says he hasn't been applying any N for corn. And with only 50 pounds of applied N, he's raised 200-plus bushel corn when legumes were included in the previous cover crop mix. "But you can't reduce all of your applications the first year you're going into cover crops," he warns. While many no-tillers have dropped wheat from their rotation because of limited profit potential, Brandt strives to keep at least a third of his acres in wheat because it allows him to seed a more diverse array of covers after harvest, which provides his farm more benefits.

Species Benefits, Challenges

Brandt has worked with a large number of cover crops over the years, and they all vary in their ability to pull up N, phosphorus (P) and potassium (K) from deep in the soil.

In a 5-year trial Brandt did on his farm in cooperation with Ohio State University, involving 20 total fields, researchers found the following amount of nutrients present in the soil, just before corn planting, that were recycled by oilseed radish:

- Nitrogen, 250 pounds
- Phosphorus, 23 pounds
- Potassium, 230 pounds
- Sulfur, 60 pounds
- Calcium, 150 pounds
- Magnesium, 20 pounds

"I think you'll agree that if we could find 250 pounds of N, 23

pounds of P and 230 pounds of potash, we can reduce nutrient requirements," Brandt says.

What Mixes Can Do

Brandt has been working with cover crop mixes with anywhere from 4-14 different species, all geared at accomplishing slightly different things with his soils. Some mixes he uses are more balanced — such as one that includes crimson clover, hairy vetch, winter peas, sunn hemp and cowpeas, providing both warm- and cool-season legumes to build N in the soil.

Rejuvenated Soils

Brandt likes to share a comparison photo of the Cardington clay-based soils on his farm — one in 1971, where the soil had a yellowish appearance with 0.50% organic matter, and the other from 2013 where the soil is much darker and has 7.2% organic matter from continuous no-tilling and cover crops.

"In '71, when I had a half-inch of rainfall, I could hold it in the soil. In 2014, I can hold a 3½-inch rainfall and not have anything run off from one rain event," Brandt says. "We've gone from about 1,500 pounds of organic N to better than 4,000 pounds of organic N in the soil. So that means I got 40-50 pounds of credited N each year for the corn before I ever plant it."

Erosion Costs Money

Ohio's annual soil loss is about 6.4 tons of soil per acre, but with cover crops there's a potential to keep nutrient-laden soils from running off and hurting your wallet. "What leaves in that soil is P, K and organic matter. In 1 ton of soil a farmer will lose about $23-$36, depending on what his soil sample readings are, from erosion," Brandt says. "Just imagine not losing that $30 a ton, and if you're losing 6 tons, multiply that by 6, and that's a lot of money. Now I don't know whether our fertilizer companies would like us very well, but can you imagine how much you could reduce your inputs by not having erosion?"

For more information on how cover crops can slash fertilizer bills see full article here

› Don't miss David's presentation, REGISTER TODAY!

Strategy #4

No-Tillers May Find Less Pain from Wet Fall

Regardless of a farmer's chosen tillage methods, he's likely felt the pain and frustration of a slow, tedious harvest. However, for producers who have chosen no-till, their challenges might be a bit less painful.

Reicosky says in times of heavy rain, no-tillers can sometimes pull into their fields 2 to 3 days earlier than their conventional-tillage counterparts. "Partly because of residue, and partly because of the soil's structural changes resulting from no-till methods, no-tilled soil supports traffic and the weight of a tractor a bit better in wet seasons. It depends on the rainfall and your location, but here in Minnesota, a farmer can pick up 2 to 3 days, in terms of getting into the field."

In some cases — especially in soils with a high clay content — no-till residue adds a few days to the start of planting, as the residue can delay the soil warming and drying to desired levels. "You can get into conventional-tilled fields a little earlier. Once your soil has been into the no-till system, you can see a delay of 3 to 5 days. And, of course, we've been taught that the earlier you get your crop in, the better the potential yields."

Daniel Reicosky

Regardless, Reicosky believes the benefits of no-till far outweigh any challenges. "No-till gives us clean air and allows us to produce economical yields. We also can decrease fossil fuel usage and trips across fields, and that gives us a potential advantage."

In many conventional-tillage systems, anhydrous ammonia is applied in the fall after harvest to restore some nitrogen lost throughout the growing season. "When you don't apply anhydrous in fall, there's not that potential opportunity for leaching from the bottom of the soil profile." Not only could farmers lose the nitrogen applied to their fields, that nitrogen can enter nearby waterways, creating water-quality issues and adding to already established hypoxic zones, he adds. Another potential problem with applying anhydrous in a wet fall: heavy, silty clay soils will not crumble and reseal the slot though which nitrogen is applied.

"Unless a farmer takes the precautions to cover that gap with another tillage tool, he runs the risk of losing some of that nitrogen." And, as the season progresses, frozen soil becomes an obstacle in applying fall anhydrous. "Once they get 1 to 4 inches of frozen soil, they're done."

For more information on benefits of no-till see full article here
› Don't miss Daniel's presentation, REGISTER TODAY!

Join us January 8-11, 2019 at the National No-Tillage Conference
for more than 100 cutting-edge, money-making sessions over 4 days, delivering insightful learning and unlimited networking with the best of the no-till community.

WHAT ATTENDEES HAVE TO SAY ABOUT THE NATIONAL NO-TILLAGE CONFERENCE…

"I am walking away with 6 to 8 ideas that I would at least like to try on a small amount of acres."
— *Benoit Delbecq, Auburn, Ind.*

"Aside from the best 4 days of planting, these are my farm's best 4 days of the year." — *Joe Keller, Prairie du Sac, Wis.*

"Seeing the successes and failures of other farmers at this event helps guide ideas and the decisions we make for our farm."
— *Jordan Wall, Ridgeville, Iowa*

"The networking with farmers that takes place at this conference, they almost become like family."
— *Joseph Karn, Mariah Hill, Ind.*

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