soil WARRIOR

QUICK GUIDE

TO BUILDING SOIL HEALTH AND REDUCING PRODUCTION COSTS WITH STRIP-TILL

ETS

ENVIRONMENTAL TILLAGE SYSTEMS

what's inside

How Can You Tell if Your Soil is Healthy?

These tips from the USDA-Natural Resources Conservation Service are a good way to start.

Check for compaction: If soils are hard to penetrate with a rod and there is crusting or substantial erosion, soil health is probably lacking.

Look for residue: Crop residue is good for erosion control, but it shouldn't stay in the soil for years as that is an indicator of poor microbial activity. Shredded and decomposing residue helps build soil structure.

Dig in: If it's relatively easy to dig 5–7 inches down in the soil and it has shredded residue and contains earthworms or millipedes, those are all good signs of healthy soil.

Feel it: If the soil crumbles easily in your hand, that's good. If it takes a hammer to smash clods, well, that's not so good.

Inspect the color: Darker soil generally reflects higher organic matter content. If the topsoil and the subsoil are the same color, there is room for improvement.

Examine plant roots: Strong, healthy crop roots are a good indicator of vibrant soil. If roots appear inhibited, soil may be compacted, limiting germination and plant growth.

Smell it: Healthy soil has a sweet, earthy smell. Soil with no smell has little active life.

Build SOIL HEALTH through STRIP-TILLAGE

Billions of dollars are spent each year by people trying to get healthier. From gym memberships and personal trainers to vitamins and supplements, we work hard and spend a lot to build a foundation for health.

Farmers take a similar approach to soil health. Whether its fertilizer applications or tillage techniques, farmers work to build strong yields. And it all starts with the foundation.

Modern corn hybrids and soybean varieties have tremendous yield potential right out of the bag. But unless the soil they're planted in is healthy, they'll likely fall well short of that potential. Soil health is a combination of many things including water and nutrient holding capacity, organic matter and soil structure. All of those characteristics are promoted through strip-till practices.

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"Soil protection is the number one thing," says Jodi DeJong-Hughes, extension educator with the University of Minnesota. DeJong-Hughes has been researching soil and tillage for more than a decade. She notes the benefits of strip-till are reduced wind and water erosion while building up soil structure to help with water infiltration. "The residue helps wick down water very quickly. It's like conventional tillage where you plant the seed; the soil warms up. You also have all the benefits of no-till between the rows," she adds.

Gyles Randall worked as a soil scientist for nearly 40 years at the University of Minnesota Southern Research and Outreach Center in Waseca, MN. Randall was a trend setter, looking at ridge-till farming as far back as the early 1970s. He says soil tilth entails a number of qualities. "Number one is not driving on the seedbed to cause compaction because compaction is the enemy," Randall says. "A high amount of residue with little runoff, good drainage and good organic matter, that's healthy soil." Randall says a healthy soil profile holds 25 percent air, 25 percent water, with the rest a combination of organic matter and minerals. Practices like zone-till contribute to soil health, which in turn results in strong yields.

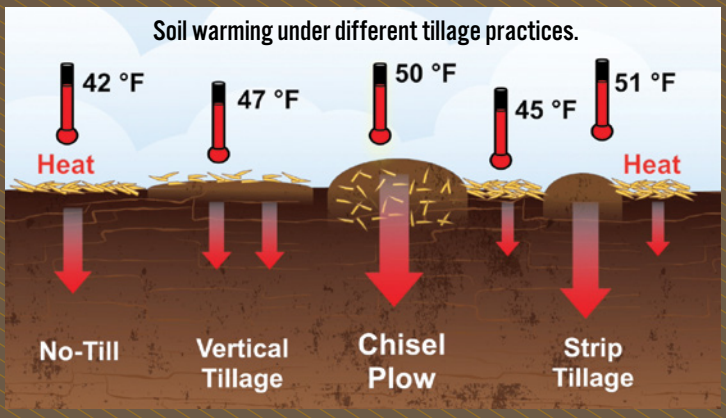
"You have to be patient with reduced tillage because it can take time. You may not see much difference in yields the first couple of years," Randall adds. "It takes time, but a lot of things that are good take time."

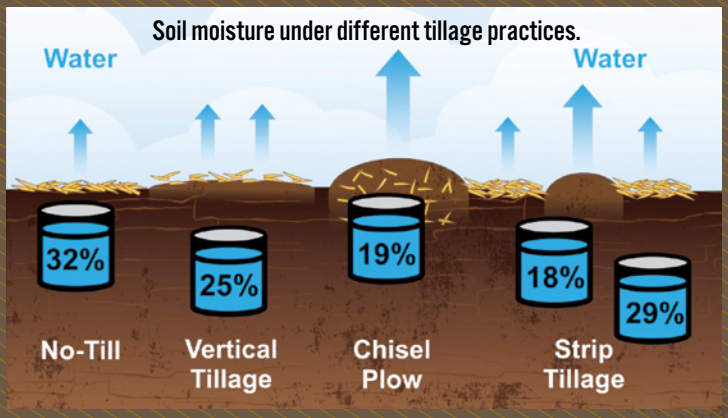
DeJong-Hughes says her research shows that most yields from strip-till fields are comparable to full surface tillage. But she says because most of her projects are three years in duration or less, the full benefit to the soil from strip-till isn't always realized. She notes colleagues who have conducted longer term projects have seen substantial yield boosts in strip-till fields, offering proof that soil health through reduced tillage can be a productive option.

University Research Shows
Strip-Till Soils Warm Quickly and Hold Moisture

University of Minnesota Extension Educator Jodi DeJong-Hughes, North Dakota State University (NDSU) Soil Health Specialist Dr. Abbey Wick, and NDSU Assistant Professor of Soil Physics Aaron Daigh have teamed up to conduct a five-year study comparing a variety of tillage treatments. They are monitoring soil warming, water contents, and thermal properties and evaluating soil health, crop emergence, and yields. The four on-farm locations included in the study are in a corn-soy crop rotation and feature soil types (silty clay, clay loam, and fine sandy loam) found on 67 million acres of prime farmland in the Northern Great Plains regions.

Results from the first year of the study shown below illustrate the advantage of using strip-tillage.*





*SoilWarrior X row unit used for coulter strip-tillage plot.

Create a
NUTRIENT PLACEMENT PLAN
FOR BETTER CROPS AND STEWARDSHIP


SoilWarrior® 4540 SND

Crops need nutrients, but placing those nutrients in the soil isn't enough. That's why agronomists like Peter Johnson believe precise delivery of fertilizer is the best way to combine productivity and stewardship.

Johnson has devoted his life to agriculture. Having spent 30 years as an extension agronomy specialist in Ontario, he's also learned many things about helping farmers make good choices for crop production and environmental stewardship.

The first step for good fertility comes from knowledge. He says farmers need to start by knowing what their soils hold in order to keep nutrient levels where they need to be.

"You can't farm well today without good soil test information," Johnson says. "I prefer smart sampling by soil zones. You have to know if you can draw down the nutrients in certain areas, if you need to build them up (and this is critical!), or if maintaining them will be the most profitable."

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"In soil that's low in phosphorous and potash... we've seen up to an 80 bushel increase."

What's available in the soil isn't the only factor farmers need to consider when identifying nutrient needs. In addition to soil testing, Johnson says it's vital to calculate the impact of crop removal.

Johnson is a proponent of precise fertilizer placement. He says a band is four to five times more efficient than broadcast fertilizer applications, and blending with zone tillage is at least twice to three times more effective. That efficiency shows up in the form of higher yields.

"Especially in areas with low potash, putting nutrients in strips has shown benefits of as much as 30 bushels per acre for corn," Johnson says. "In soil that's low in phosphorous and potash, when we can put nutrients where they're concentrated, we've seen up to an 80 bushel increase. Those are extreme cases, but even on decent soil testing fields, the average is about 10 bushels per acre."

He is optimistic about the potential strip-till has for farmers in Ontario who are facing increased environmental scrutiny. Precise nutrient placement can dramatically reduce runoff or tile flow that could contribute to water quality issues. Because only a portion of the soil is disturbed in the strip-till process, there is far less soil erosion. Tilled zones also warm more quickly in the spring than no-till fields contributing to better early crop growth.

"I think we can generate yields that will equal or exceed conventional tillage, save more soil, and keep our fertilizer where it belongs," Johnson adds. "Strip-till is the best of both worlds, and I'm excited to see what it can do for agriculture in Ontario."

Peter Johnson, Agronomist

RealAgriculture, Ontario, Canada

MY JOURNEY TO STRIP-TILL

Ben Pederson – IOWA
CORN, SOYBEANS & COVER CROPS
SOIL WARRIOR SINCE 2015

It was August 2011, and I was growing restless with our cropping system. Actually, I was past restless and knew what I wanted to do.

For 4 or more years, I had researched strip-till as an alternative to the aggressive broadcast tillage we were doing at the time. I hated field cultivators for the smeared layer they left beneath the surface of that "fluffed" soil, and the virtual "pavement covered in baseballs" left in the wheel tracks of the monstrosity of a tractor that pulled it. I found disk-ripping every acre of corn stalks, whether they were going to soybeans or corn the following year, frustrating.

Why were we wasting the time and money to pull a 17-foot wide implement with a 500 horsepower tractor to blacken up the field a bit?

Why was I hiring other people to apply my fertilizer in a "spread it to the wind" manner when I knew we were perfectly capable of the task?

All these things and more had brought me to a fever pitch, and I was ready to take action.

So, as I drove to a friend's field to provide custom fungicide/insecticide application services, I called Environmental Tillage Systems (ETS) and told them I wanted to purchase a SoilWarrior. At the time, I think they were the only ones excited by this decision. My dad offered to "buy me out" of the idea. My banker questioned the real cost savings I forecasted that would essentially pay for the machine over the long haul and was worried about the new debt I had taken on.

Fast forward to 2015.

We had, arguably, the worst three back-to-back years of crop production weather in anyone's memory. Commodity prices had dropped precipitously. If you went back in time and told me this would be the future, I would have backed down from my purchase...and I would have been wrong.

My cost of production has gone down. Yields have stayed the same, and actually increased from our average in 2014. More of our money stays in our operation instead of paying others to apply nutrients for us. The adversarial growing conditions helped me develop a deeper respect for our soil and become more efficient with fertilizer, time, and fuel. The improvements and benefits are real. I am glad my crystal ball was broken that day.

"It's a whole different mindset...but we're doing it for the right reasons."

Brian Ryberg – Ryberg Farms, Minnesota

22" Corn, Soybeans, Sugarbeets & Cover Crops

SoilWarrior since 2014

Brian Ryberg may be a relative newcomer to zone tillage, but you'd be hard pressed to find a farmer more committed to it. He began farming with his father more than 30 years ago and now grows corn, soybeans, and sugar beets with the help of his wife and two employees.

Ryberg's foray into strip-till started when he took a fence out and began farming a piece of land that had been in pasture. He noticed the crops growing on that virgin soil were taller than the rest. After talking with his agronomist, the conversation turned to strip-tillage. Ryberg had been looking for ways to save costs and reduce trips across the field, and strip-till offered a lot of benefits.

In the fall of 2014, Ryberg leased a SoilWarrior and zone tilled about 300 acres before a November snowfall brought field work to a halt. He refreshed the strips in the spring, planted into the zones, and fell in love.

After one season, Ryberg Farms went all in with 100 percent zone tillage. Making the switch from full surface tillage required a change of thinking.

"It's a whole different mindset. It's hard for us to change our way of thinking, but we're doing it for the right reasons. Strip-till has really simplified things when it appeared it might be more cumbersome."

The decision is already paying dividends. He sold off some unnecessary pieces of equipment, reduced tractor engine hours from 430 to 210 during one year, and was able to decrease the amount of applied fertilizer because it was placed directly into the tilled zone. He estimates saving about $90,000 per year in fuel, labor, and fertilizer costs. Those savings come without sacrificing crop performance.

Tractor engine hours reduced from 430 to 210 during one year. 49% SAVINGS

"I was very, very pleased with yields," Ryberg says. "It was a good year for crops, but in side-by-side comparisons of the strips versus the conventional tillage, there was no yield drag whatsoever."

What he does expect to see is more crop residue on his fields and less erosion.

As for the equipment he uses to make the zones, he couldn't be happier with the performance of his SoilWarrior and the support he's received.

"The SoilWarrior has been excellent. It's very well built," Ryberg says, "and the company has been unbelievable to work with. They've stood behind their product and supported me."

"We're able to take care of the land and get more out of it."

Ryan and Melissa Shaw – SKS Farm, Michigan

Corn, Soybeans, Sugarbeets & Cover Crops

SoilWarrior since 2014

Ryan Shaw knows his neighbors are watching. The Marlette, Michigan farmer and his dad defied convention by selling much of their tillage equipment to begin farming their entire 1,600 acres using just their SoilWarrior. While some view that as a risky move, they believe it makes total sense.

Shaw is part of SKS Farm, which was founded by him and his parents, Scott and Henrietta Shaw, and rounded out by his wife Melissa and neighbor Bruce. They raise corn, soybeans and sugarbeets. After farming conventionally their entire career, several years ago they experimented with vertical tillage. "We had to convince ourselves we could put up with leaving more residue in the field," Shaw quips.

In the fall of 2014, SKS Farm made the commitment to exclusively strip-till their ground. They parted ways with several pieces of tillage equipment, including plows and field cultivators, and turned to the SoilWarrior.

The SoilWarrior was an easy choice to replace all that old equipment after attending a farm implement show, exploring the machine firsthand, and hearing of its accolades during a presentation. Shaw was intrigued that one machine would simultaneously cover so many bases for his farming operation including cultivation of the strips and fertilizer application.

SKS Farm utilizes controlled-traffic, twin-row planting which throws an additional challenge into strip-till farming. But thanks to RTK guidance technology and the SoilWarrior's steerable cart, they are able to put the seed right where it needs to be.

"We knew that was a challenge when we were getting into strip-tillage because we were concerned with staying in the zone," Shaw says. Their implements now run on an RTK-based guidance system "to make sure we're on the mark."

Because they twin-row plant, there are serious corn root balls with which to contend. The SoilWarrior powers through the tough root mass to create an excellent seedbed for their corn, soybeans, and sugarbeets.

After the first year, Shaw was pleased with the results. The sugar beets grew uniformly, which he attributes to a well-formed seedbed and optimally-placed nutrients.

"It doesn't appear like they ever ran out of steam," Shaw adds. "Sometimes they will have a period where their growth slows down, but it never did."

He says the beets also lifted out of the ground very easily in the zone-tilled fields, which made for a less damaging harvest process. Their other crops turned out well too with corn yielding more than 200 bushels per acre.

He has also noticed less weed pressure in their fields and a big savings in fuel cost. Because only a portion of the field

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Shaw calculated $120,000 in fuel and fertilizer savings in one season.

Ryan and Melissa Shaw – SKS Farm, Michigan

is tilled, weeds have been less likely to grow in the undisturbed areas that are covered with residue. Making fewer passes across the field has reduced their fuel bill. Normally over the course of the spring and fall, the farm fuel tank is filled three times. This year it was only filled once.

Fuel and time savings are significant, which gives Shaw more time to focus on farm productivity.

"This has given us more opportunity to look at what each field needs individually," Shaw says. "We're able to take care of the land and get more out of it." He notes that because the likelihood of acquiring more land is low, SKS Farm is focusing on the land they already own. That entails paying close attention to soil health, addressing symptoms on a field-to-field basis, and reducing their overall environmental impact.

Once the harvest season was done, Shaw calculated just what kind of savings were actually realized since making the transition to strip-till. His cost of production has gone down, his crops look good, and others are taking notice. In one season they saved $40,000 in fuel and $80,000 in fertilizer. Average yields for their crops exceeded expectations: 263 bushel per acre corn, 59 bushel per acre soybeans, and 26 ton per acre sugarbeets. According to Shaw, their corn production cost was under $3 per bushel, which amazed the crop insurance agent. SKS Farm also applied for and received funding from the National Resources Conservation Service (NRCS) for implementing strip-tillage and nutrient management practices.

"We've been really impressed with it. It's one thing to hear about how it works from others and it's another to do it yourself," he says. "It's definitely working. We're sticking with it and others are watching us. There's already a lot of interest from other farmers."

And when they decide they're ready to give it a try, Shaw will be happy to refer them to ETS.

"From the knowledgeable sales staff to the thorough service department and helpful office staff, the whole ETS crew has been a downright pleasure to work with," explains Shaw. "They understand our goals and strive to help us accomplish them, which is a big deal coming from an implement dealer. The end goal is not selling a product, but instead promoting more environmentally-friendly facets of ag technology."

"Sometimes it costs you money to try to save money."

Mike Verdonck – Groupe Stell-Ag, Quebec

Corn, Soybeans, Wheat, Canning Crops & Cover Crops

SoilWarrior since 2013

Mike Verdonck isn't shy about calling his SoilWarrior "the best machine on my farm," but he did take a bit of a scenic route before making the discovery. Verdonck farms with his brother-in-law close to the St. Lawrence River south of Montreal, Quebec in Canada. He grows corn, soybeans, wheat, and some canning crops on about 2,500 acres. He's also using cover crops.

Several years ago, Verdonck began doing some no-till, but because of the heavy clay soils and cool temperatures he had to contend with, yields weren't up to par. He then looked into strip-tillage and decided to experiment. He did what many farmers do—he improvised, converting an old field cultivator into a strip-till machine. Verdonck says it worked well on dry soils, but struggled in wet ground and in areas with heavy corn stalks.

He then bought a strip-till machine but wasn't entirely happy with the results. All along "I kept hearing about this SoilWarrior," Verdonck says.

Eventually he called ETS to learn more about what the SoilWarrior offered. That led to a trip to Faribault, Minnesota, to tour the production facility and see firsthand how the machine is built. He came away very impressed, and in 2013 he purchased his own.

"Sometimes it costs you money to try to save money," Verdonck says. "I should have invested in the SoilWarrior to begin with."

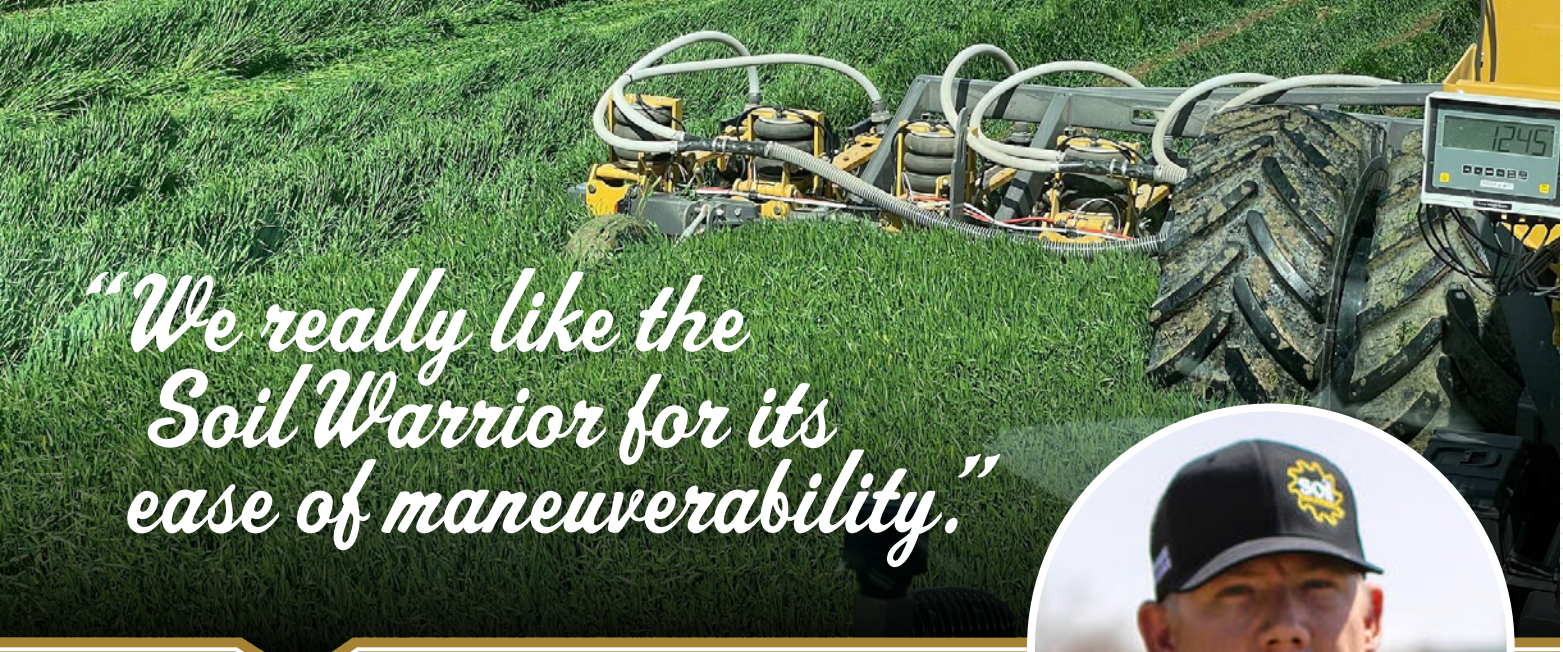
Verdonck likes how the system helps him manage fertilizer, how easily it handles heavy crop residue and its overall simplicity. He says it also works seamlessly with his cover crops. But the main thing he says the machine offers is efficiency.

"Cost of production is very important. We want to be efficient, but we also want yield," he says. "We don't see any yield drag when managed properly." With the SoilWarrior's variable rate technology, Verdonck can place the nutrients where they're most needed. That has helped minimize yield variability across the field. Verdonck also likes the fact that his equipment inventory is much smaller than what is required for conventional farming. The SoilWarrior's versatility has allowed him to downsize—something he likens to a modern mobile phone.

"Thirty years ago you needed a telephone, a notebook, a camera and all these other pieces of equipment that you now have built right into your phone," he says. "Now I can get by with a couple tractors, a planter, and the SoilWarrior."

Verdonck says farmers interested in conservation tillage should be cautious about believing every sales pitch equipment companies make. Growers can learn a lot about what really works by attending the National Strip-Tillage Conference. Many of the farmers there are strip-till veterans who are willing to share their learning experiences. Sometimes that experience taught them to make a wise investment right away.

"The ones who have been through hell now have a SoilWarrior," Verdonck adds.



"We really like the SoilWarrior for its ease of maneuverability."

Stratton Kraft – Kraft Family Dairies, LLC, Colorado

Corn, Alfalfa, Cover Crops

SoilWarrior since 2021

For one Colorado Dairy Farmer, the importance of time and efficiency were the ultimate deciding factors when adding a SoilWarrior to his operation.

About 80 miles northeast of Denver in Fort Morgan, Colorado, Stratton Kraft made spring strip-till passes with his SoilWarrior. "We're [strip-tilling] in a circle. That's a little different than most strip-till guys. We cut our corn in a circle, plant in a circle, do everything in a circle," said Kraft. "We shave quite a bit of time off fieldwork and our harvest and planting times by going in a circle. We can shave off about half the number of passes going in a circle."

Kraft's farming operation is run alongside his mom and dad. They own Kraft Family Dairies, LLC, where they milk 6,000 to 6,500 head, three times a day. They raise their replacement heifers and do the calf rearing independently. "We farm about 1,200 acres. About 1,000 of that right now is in corn, and the rest of it is in alfalfa. That is one kind of our cropping rotations over the years. About every 5 to 6 years, we roll a field out of alfalfa and put it into corn, and take another farm and put it into alfalfa," stated Kraft.

The primary source of fertilizer used in their operation is liquid dairy manure. A dragline injection system applies it in the fall. Once the waste is applied, the fields are ripped and disked, and a cover crop blend of hairy vetch, purple top turnips, and rye is planted to sustain microbiology within the soil and help prevent wind erosion.

Kraft used to plant into cover crops but had issues with seed-to-soil contact and emergence. When they had planted into their cover crop, they planted straight into the cover crop rows and noticed yield production took a hit. It led Kraft to explore options for a different practice of tillage and cover crop application.

"Our intention is that we strip in the spring and that we have got a full growing cover crop all winter. In the springtime, we can still maintain some of the cover crop strips in between our strip-till runs so that way we have some wind coverage, and we are also keeping a lot of our microbiology and our fungus and bacteria growing constantly that we are not wiping them out in the springtime and starting from zero again," Kraft said. He does spring strip-till into cover crops to apply elemental sulfur and a dry humic to maximize the efficiency of his fall-applied dairy manure.

Kraft created the correct sulfur prescriptions within his system and a 10-pound flat rate of rhizomatic and humic through his micro bin. "We are controlling all our scales so that way we can see and can cross-compare of our product theoretically coming out and coming out," Kraft said. "One of the beautiful things about the SoilWarrior is that it's exceptionally accurate as long as you did your pre-work correctly, calibrating it." Through the technology on their machine, Kraft enjoys the ability to run with the VISUM

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"It holds up better than some of the other models we've seen."

Stratton Kraft – Kraft Family Dairies, LLC, Colorado

blockage monitor. "We can either run with fertilizer, or if we are planting seed, we will run that too. It'll tell you if [you have] a row that's plugged up or not quite running the way it should."

When considering the SoilWarrior over competitors, Kraft prioritized having one machine with all the features – the desired fertilizer capacity and a complete set-up. Kraft chose a 3-bin dry fertilizer system for his SoilWarrior. "We've got the two big bins, and the micro bin: [it] is what we are running our humic out of," Kraft said. ETS provided all components of his SoilWarrior strip-till system. "You're not having to buy the strip bar, cart behind you, to move your dry fertilizer with you. [ETS] has done a fantastic job of putting together a machine that is a one-piece set up."

Kraft purchased a SoilWarrior 4540SXD3, which is his second season running the machine. Since beginning his journey into strip-tillage with the SoilWarrior, he has noticed improved fertilizer efficiency, better seedbed, better planter ride, better emergence, enhanced microbiologic activity, and higher yields.

Kraft is more than impressed with the abilities of the machine. Over the last few seasons, he has discovered even more benefits. "We really like the SoilWarrior for its ease of maneuverability. Being able to have the guidance on the cart to where we can make it so that the 3-point planter that we are running follows in the same row. We are running 16 rows on our planter and SoilWarrior," Kraft said. He also likes the fertilizer application versatility and accuracy that comes with his strip-till system.

Incorporating the SoilWarrior into their operation has led to decreased labor needs, allowing more time to focus on the dairy side of the farm. The size and capacity of the machine have helped with those reduced hours. Dairy is their priority. The versatility and efficiency of the cropping system support that priority. "This is a simply complicated machine," stated Kraft. "Complicated in the amount of thought process that went into it to make 100% right. Complicated in the fact that you can do so many things with it, and if you want to add on or take away, you can do that on the fly for the most part. It is a very well-thought-out machine. Simple in the fact you load your prescriptions and calibrate your machine, set it, and go. Not much to worry about as long as you're paying attention to the way you are operating it."

Kraft is proud of the work the SoilWarrior has done for them. It took an initial investment for their operation but has already given them a return on investment. He saw enhanced microbiologic activity because the microbes didn't have to reset and rebuild in season. In turn, this resulted in a shorter activity lag, contributing to higher yields. He uses a micro-bio meter and sends samples to ROI Biologicals to understand bacteria, fungi, and mycorrhizae in the soil.

"I think SoilWarrior has done a fantastic job of figuring out the ins and outs; what does a better job. Yeah, it is heavy, it's [an] expensive machine, but in the long run, it holds up better than some of the other models we've seen. It gives you a lot more peace of mind. You can set it and know it's running right and just go and knock stuff out. You have the versatility to be able to run at a high speed and be able to see the difference that the speeds make in your strips, and being able to cover a lot of ground fast is a big deal," said Kraft. "For us, it is efficiency. If we can knock out 40 acres an hour across 1,000 acres, that puts time back into our pockets and our schedules. It doesn't have the capabilities the SoilWarrior has, which doesn't help you pay for what you're doing. Time is money."

USE NRCS FUNDS TO LEVERAGE YOUR STRIP-TILL EQUIPMENT PURCHASE

Dave Legvold – Minnesota

Corn & Soybeans

SoilWarrior since 2008

Farmer is just one of the many titles David Legvold has held throughout his lifetime. He has an adventurous spirit that pushes him to think outside of the box when it comes to farming.

It's the reason he purchased an 8-row SoilWarrior® strip-till system in 2008 after he realized that his disaggregated soils were washing and blowing away due to too much tillage. And the most environmentally-friendly way for him to manage soil and fertilizer for optimal yield was by tilling a 12-inch wide zone, leaving the rest of his field covered.

The trickiest part for Legvold was finding the resources to purchase a SoilWarrior. After researching conservation programs and a bit of creative thinking, he found a way to leverage those program payments to offset the cost of his equipment purchase.

Within 5 years Legvold paid for his SoilWarrior, and his conservation efforts have helped him acquire more land. "Science, economics and my soil informed my decision to move ahead and not look back," explains Legvold. He has used the following plan to successfully mentor other farmers through the same process and is happy to spread the word to growers interested in making changes to their operations.

Do your homework. Go online or call your local NRCS office. Learn more about the Conservation Stewardship Program (CSP) and Environmental Quality Incentives Program (EQIP). Familiarize yourself with the enhancement options and deadlines. Don't be afraid to ask questions.

Schedule your interview. Have a plan in place when you go in for your interview with an NRCS agent. Specifically mention the different enhancements you'd like to implement and how you plan to accomplish them. Legvold refers to this as "going in with your gun loaded." He says there are several enhancement criteria listed in CSP that the SoilWarrior system is designed to meet.

They include:

AIR09 - Nitrification Inhibitors or Urease Inhibitors

SOE05 - Intensive No-Till (Organic or Non-organic systems)

ENR01 - Fuel Use Reduction for Field Operations

WQL05 - Apply Nutrients No More Than 30 Days Prior to Planned Planting Date

WQL07 - Split Nitrogen Applications, 50% After Crop Emergence or Pasture Green Up

WQL09 - High Level Irrigation Water Management Apply Phosphorus Below Soil

After the interview process, the NRCS will present you with a plan that includes how many acres you can enroll in each program and what your payments will be. Each plan lasts 5 years, so you do not have to go through this process every year.

> "Science, economics and my soil informed my decision to move ahead and not look back."

Use the payments to offset the cost of purchasing equipment. Once you know how much you will receive for your conservation efforts, schedule a meeting with your financial officer. Explain that you plan to purchase a total zone management system that can help you accomplish your conservation goals. Set up a payment schedule for your SoilWarrior that is close to your CSP or EQIP payment schedule.

For more information and a full list of enhancements, visit the NRCS website. nrcs.usda.gov

5 tips for Transitioning to Strip-Till

by Ben Pederson, Iowa

1. **Invest in RTK GPS accuracy the year before making the jump.** This will make it far easier to miss your corn stalk rows that first pass with your strip-till unit.

2. **Sell other equipment.** If you commit and use a machine proven to handle heavy residue, and proven to produce similar or better yields than conventional methods, you will not need your field cultivator, or ripper anymore, and possibly other tools. Use that capital to invest in the best machine and technology possible to give the system the best chance to work. The SoilWarrior® strip-tillage and nutrient placement system happens to meet all these descriptions.

3. **Don't skimp on horsepower.** Unless you have an excess amount of time to complete your fieldwork, take the per-row horsepower requirements seriously so you can pull your machine at a respectable speed.

4. **Band your fertilizer and only till your strips.** More and more I hear of "strip-tillers" who are either just banding fertilizer beneath the surface, then broad-area tilling over the top, or they are tilling strips and broadcasting fertilizer. Strip-till is a system, and all parts of it work together. You will not be as successful if you cherry pick which parts you adopt.

5. **Make some phone calls.** The advice I received from another grower who was using a SoilWarrior was very valuable. Most guys are willing to share information about their experiences. Take advantage of this. The worst thing they can say is no.

MEET THE SOILWARRIOR

on Your Ground

We understand that each farm is different. You need to know you're choosing the right strip-till system for your soil and farm business goals. That's why we're happy to show you how SoilWarrior row units work in person using our DemoWarrior unit. If you like what you see, a member of our knowledgeable sales staff will help you select the SoilWarrior model and accessories to achieve your goals.

Or see a full machine demo at an upcoming field day or event. View upcoming events: www.soilwarrior.com/calendar.

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