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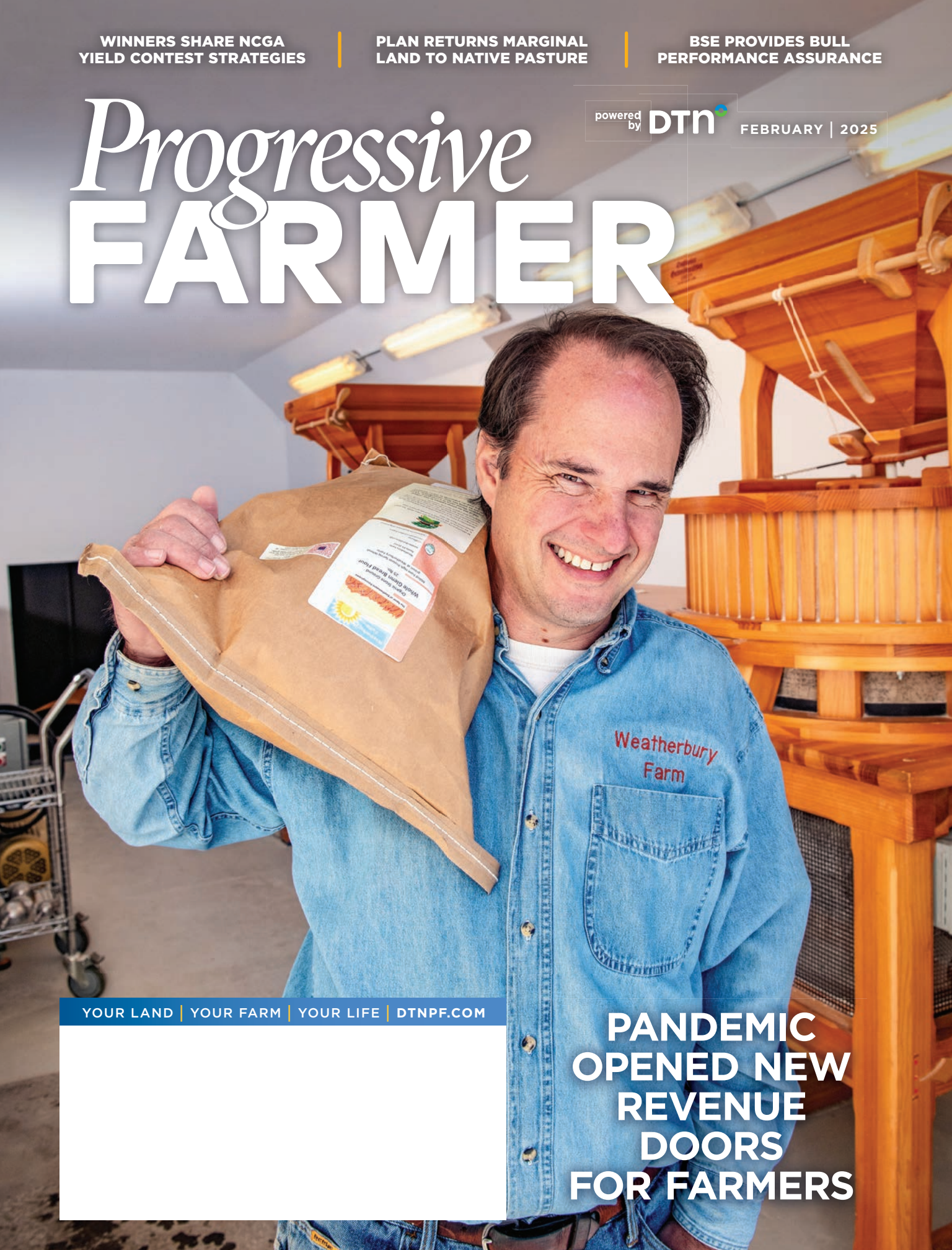

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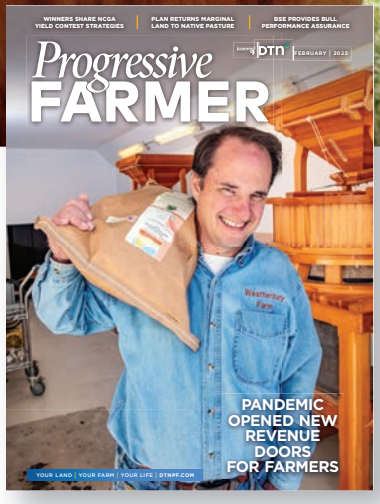

ON THE COVER

Nigel Tudor's direct-to-consumer flour business was minimal before the pandemic but has flourished since.

PHOTO BY JOEL REICHENBERGER

After the COVID pandemic, a world of challenges and opportunities opened up for farmers willing to take the risks.

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IN EVERY ISSUE

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WE'D LIKE TO MENTION

Gregg Hillyer
Editor In Chief

Email Gregg Hillyer, **gregg.hillyer@dtn.com**

Strategies To Manage Margin Squeeze

The thing about the boom-and-bust economic cycles in agriculture is that you never want the lows to go too low and, if we're being perfectly honest, the highs too high. Since net farm income peaked at $181.9 billion in 2022, farmers have watched their take-home pay decline. That trend is expected to continue in 2025 with a projected net farm income of $129 billion, according to the Food and Agricultural Policy Research Institute's most recent report issued in September. That's a nearly 29% drop in three years.

"We're coming off some pretty serious highs, and sometimes that comedown can be really painful," explains Brent Gloy, partner at Agricultural Economic Insights LLC (AEI). The ag economist's comment underscores the U.S. farm economy's volatility and the monetary risks farmers and ranchers must constantly manage to stay in business.

He points out the industry's income decline has now settled into "average" revenue levels at which agriculture historically operates. The problem, Gloy adds, is when the cycle turns downward, the higher cost structure that occurs during the boom years is slow to adjust. Financial conditions erode when there is a big gap between costs and prices, creating a margin squeeze.

ADJUSTMENTS AHEAD

That's the situation many find themselves in today. And, while there have been a few bright spots for producers—beef prices, for example—the crop sector has underperformed. Low commodity prices mean losses for many on every acre planted. Consequently, farmers are focused this winter on financial planning: analyzing their operation's spreadsheets by studying cash-flow, working capital, debt and income/expenses to identify potential cost reductions and other adjustments for 2025 and beyond.

Complicating those calculations are other risk factors largely out of their control. Weather, of course, is the primary one. Farm policy/trade is another. The Trump administration is proposing tariffs on some of ag's best customers, causing uncertainty about the potential impact on farm exports and prices. Also, the 2018 farm bill has been extended heading into the new year, a farm bill the industry argues doesn't provide the income safety net necessary in today's economic environment.

STRATEGIES TO CONSIDER

With so many wild cards, formulating an action plan will require a deft hand—and a sharp pencil. Gloy and David Widmar, cofounder of AEI, stress any plan should include analyzing your cost structure. "The challenge a lot of producers have is how do you convert that into actionable decisions?" Widmar points out. Here are a few to consider:

- Give added attention to three fixed costs: Since 2019, there has been a 25% increase in family living expenses, 25% increase in cash rent and 30% increase in farm machinery.
- Evaluate which cost structure category to focus on. For example, what costs need to be covered to help you make progress toward a long-term financial goal, such as a future land purchase? Or, what costs do you absolutely have to pay to remain in business?
- When a cost structure course adjustment is necessary, take immediate steps. Though it may be painful, it'll leave you in a better working capital position and will mean less pressure to take more costs out of the system later.
- Know your break-even price for each crop so you can make profitable sales when the markets allow.
- Use any potential ad hoc payments (if you qualify) to make strategic decisions to improve your financial situation. In December, Congress financed $31 billion in disaster and economic aid to farmers. Widmar says to make sure a payment is not just papering over some of the high cost structure that you're eventually going to have to address.

Every growing season brings its share of risk and reward. What tactics you employ will determine if your margin squeeze turns into a stranglehold.

EDITOR IN CHIEF

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What Farmers Need To Know About New IRA Rules

As we approach tax season, one of the most frequently asked questions is this: How much should I put into my individual retirement account (IRA)? The next question is: Should the contribution be Roth or traditional? A lot of factors go into deciding which IRA is right for you. With the passing of the SECURE 2.0 Act, the decision got a little more difficult.

Let's start with the basics. After you reach a certain age, you will be required to start taking required minimum distributions (RMDs). RMD is the minimum amount that must be withdrawn annually from retirement accounts such as IRAs, 401(k)s and other similar retirement plans once you reach a certain age mandated by the IRS. The age at which RMDs must begin has been adjusted to 72, following the SECURE Act of 2019. This was changed again once SECURE 2.0 was passed in 2022.

The SECURE 2.0 Act introduced several significant changes to RMD rules.

- Increased RMD Age: The age you are required to take RMDs moved from 72 to 73 as of 2023 (for those born after Dec. 31, 1950, and before Jan. 1, 1959). Beginning in 2033, the age for starting RMDs has been further increased to 75 (for those born on or after Jan. 1, 1960). This change allows farmers more time to grow their retirement savings before mandatory withdrawals begin.
- RMD rules now no longer apply to Roth IRA, Roth 401(k) and Roth 403(b) during the life of the participant.
- Reduced Penalties: The penalty for failing to take an RMD has been reduced from 50 to 25% of the amount not withdrawn. If the mistake is corrected promptly, the penalty can be further reduced to 10%.
- Qualified Charitable Distributions (QCDs): Farmers can continue to use QCDs to satisfy their RMD requirements. By donating directly from their IRA to a qualified charity, they can reduce their taxable income while supporting causes they care about.

Additionally, the SECURE 2.0 Act issued new changes for spouses and nonspouse beneficiaries regarding RMDs. Under the new rules, beneficiaries must generally follow a 10-year standard for withdrawing plan assets. However, there are some exceptions for spouses, disabled or chronically ill individuals, or beneficiaries who are not more than 10 years younger than the participant.

For spouses, if they inherit a retirement account, they have several options:

1. They can treat the account as their own, which means they can delay RMDs until they reach the required age.
2. They can roll over the account into their own IRA, allowing them to delay RMDs.
3. They can take distributions based on their own life expectancy, which can spread out the tax impact over a longer period.

For kids and other nonspouse beneficiaries, the SECURE Act introduced the 10-year rule, which requires them to withdraw all assets from the inherited retirement account within 10 years of the account owner's death. This rule applies to most beneficiaries, but there are exceptions for disabled or chronically ill individuals, minor children of the account owner (until they reach the age of maturity) and beneficiaries who are not more than 10 years younger than the account owner.

Understanding the new RMD rules and the pros and cons of traditional and Roth IRAs is essential for farmers to ensure a smooth transition into retirement. By taking proactive steps and leveraging available strategies, farmers can manage their retirement distributions effectively, minimize tax liabilities and secure their financial future. ///

Rod Mauszycki

DTN Tax Columnist Rod Mauszycki, J.D., MBT, is a tax principal with CLA (CliftonLarsonAllen) in Minneapolis, Minnesota.

➤ Read Rod's "Ask the Taxman" column at **ABOUT.DTNPF.COM/TAX**

➤ You may email Rod at **taxman@dtn.com**

TOOLS FROM THE PAST

It's believed that this tool has been used since the Stone Age. ***What is it?***

Answer:
This is a hand adze used to cut and trim rough wood planks, and shape and smooth wooden surfaces. It was also used to rough out chair seats and hollow out wooden bowls.

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In a recent episode, ag meteorologist John Baranick shared his winter and spring forecasts for the U.S. and South America, and an explanation of major weather trends that may be on the horizon.

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Feb. 11: WASDE Report: Join DTN Lead Analyst Rhett Montgomery as he provides insights and commentary on the latest world supply and demand estimates and what the numbers mean for commodity prices.

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Katie Dehlinger
Senior Farm Business Editor
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FIRST LOOK
INSIDE THE MARKET

An Often-Overlooked Aspect Of Risk Management

At their most fundamental interpretation, futures spreads are simply a mechanism that serves to incentivize or disincentivize the storage of grain. That means spreads widen (pay more carry) when grain supplies are abundant and/or not in high demand, or narrow (pay less carry) when grain supplies are tight and/or demand for grains is very strong for nearby periods. This explains in part the seasonal tendency for spreads to be their widest during the fall and their tightest in the summer.

Over the past five years, the market has thrown producers and traders a curve ball with three inverted years, when nearby futures contracts were offering a premium over contracts for later delivery. In mid-September 2024, when the estimated 2024–25 corn carryout was north of 2 billion bushels, the December-to-July corn carry was over 35 cents, the largest carry market for that month in 16 years.

At the time of writing this in late December 2024, the March-to-July 2025 corn spread has narrowed to just a dime of carry, the fifth-tightest carry over the same 16 years. That sets up a unique situation where the market has been rapidly sending a message to U.S. corn handlers through the last quarter of 2024: Corn is wanted sooner rather than later.

Essentially, there are three ways the market can pay a grain storer to hold grain: flat price futures rallies, futures spreads or paying the storer in carry via the basis. It is an interdependent system with all three elements working together.

The first option is viable but, obviously, the riskiest, as there is no guarantee the market will go up. This is why the second option is utilized by grain elevators to protect inventories by rolling short hedges from the front futures contract to a deferred contract and picking up the premium. In years such as 2021 and 2022, when grain supplies are tight and demand is strong, the basis often must do the heavy lifting of ensuring grain users have supplies during the later months of the crop year.

Spreads can also provide clues to how basis will behave within the cash market. When factoring in interest and other storage costs, the 10 cents of board carry from March to July is not much economic incentive for elevators to continue storing corn. And, when elevators begin selling out their inventory into the market, it can be expected that basis will weaken to reflect the influx of grain to the given market, as was seen in the summers of 2021 and 2022, when the national basis collapsed despite relatively tight corn stocks.

I am not suggesting producers attempt to become speculative spread traders, and there are certainly scenarios in which spreads factor little into the best risk-management choice. However, for those storing grain, futures spread behavior in combination with other fundamental reasoning can be a powerful decision-making tool for timing grain sales. ///

Rhett Montgomery
Lead Analyst
➤ Read Rhett's blog at **ABOUT.DTNPF.COM/MARKETS**

➤ You may email Rhett at **rhett.montgomery@dtn.com**

GETTY IMAGES

Crop Insurance Choices To Consider

RUSS QUINN

Mark Twain's knack for encapsulating complex ideas in simple phrases is every writer's envy, but there's controversy as to whether my favorite quote was said by him at all.

"History never repeats itself, but it often does rhyme," he's credited with saying without it being in writing.

When I started covering agriculture in 2009, renewable fuel mandates created 5 billion bushels of new demand for corn. Some expected the paradigm shift to be so powerful that corn prices would climb above $4 per bushel permanently.

The wise ones warned that agriculture was cyclical, and these high prices would ultimately be met with enough supply. No price is permanent.

The corn market topped out around $8 per bushel amid 2012's drought and fell to the low-$3 range as 2014's harvest got underway. Farmers who made long-term management decisions based on the permanent price change argument took it on the chin.

"Our commodity prices are back to where they were in 2014, but our input prices are significantly higher," says Tony Jesina, senior vice president of insurance at Farm Credit Services of America.

Profit margins may be compressed, but farmers also have more tools to manage their risk, he explains. USDA's Risk Management Agency has also approved more than 300 new insurance products in the past decade, including margin protection (MP), enhanced coverage option (ECO) and Supplemental Coverage Option (SCO).

Generally, these are county-based products that insure higher levels of revenue (up to 95%) than the coverage farmers can elect in revenue protection policies tailored to their individual operation, which usually range from 70 to 85%. How a farm's actual production history (APH) yield compares to the county average makes a difference in how well these add-on policies manage risk.

While MP insurance includes a component that tracks input costs, its early price discovery period (during September of the year prior compared to February for most crop insurance) makes it the lesser-known option.

SCO allows farmers to buy a band of coverage from their policy level up to 86% revenue, but farms aren't eligible if they're enrolled in Agricultural Risk Coverage.

ECO covers a higher band, from 86% up to 95% and doesn't include restrictions based on farm bill safety net program choice. USDA increased the subsidy rate on ECO to 65% starting with the 2025 growing season, so farmers who are used to sky-high premiums may want to take another look this year, Jesina says.

These insurance options can provide higher levels of revenue coverage, but they're intended to supplement, not replace, existing revenue protection or multiperil policies.

Most producers came into the current downcycle of prices from a place of financial strength. Working capital reserves are strong, but Jesina argues they warrant protecting.

"It's the shock absorber for an operation," he says. "We'd rather preserve that working capital for opportunities, not challenges."

Jesina says farmers need to consider their cost of production and risk exposure closely before enrolling. A knowledgeable crop insurance agent can be immensely helpful in analyzing whether these county-based programs can improve your individual operation's risk exposure in 2025.

"If you've got a safety net in place that covers your cost of production, that puts you at an advantage compared to those who don't. It ensures that your operation will be here for years to come," he says. ///

Katie Dehlinger
Senior Farm Business Editor
➤ Read Katie's business blog at
ABOUT.DTNPF.COM/BUSINESS

Put Learning on the Menu

BY *Katie Pratt*

To wrap up an Agriculture in the Classroom unit titled "What the World Eats," I packed my kitchen and, with the blessing of the "cafeteria lady," spent an afternoon with junior high students in their lunchroom.

After a pep talk about the importance of following the written instructions on the recipe card, the class divided into four groups. Knowing little to no kitchen knowledge existed, I kept things simple with recipes for Italian Cannoli Dip, Indian Cucumber Raita, Namibian Pancakes and Mexican Pizza.

Some students handled measuring cups with ease; others hesitated when the recipe called for two-thirds cup, and all they had was a third cup. With only one hand mixer to share, groups experimented with mixing ingredients with a wooden spoon and a whisk. They washed dishes, monitored the oven and learned not to fear a stove.

KATIE PRATT

While assisting a group with measuring liquids versus powders, I saw another student add a tablespoon of cinnamon to his mixing bowl. His recipe did not require cinnamon.

"Wait!" I called. "Does that recipe call for cinnamon?"

He squinted at his card and sighed, "Ugh, it says 2 teaspoons."

"But, does it ask for cinnamon?" I asked again.

He looked harder. "Yea. It's spelled weird, though." I stepped over to the table, pointed to the list of ingredients and read, "2 teaspoons cumin."

After tasting each dish, students packed leftovers to take home and share with other teachers in the building.

At some point, popular thinking must have assumed that cooking and basic life skills would be taught at home, thus the dismantling of home economics in school. This afternoon proved that wrong. Students collaborated, did math, read and problem-solved. They did everything they would do in a classroom and learned how to prepare food to feed themselves and others.

And, by golly, they liked it! Now, that's satisfying. ///

Katie Pratt writes and shares her love of agriculture from a north-central Illinois farm. Check out **theillinoisfarmgirl.com** to read her blog.

You Can't Do It All

BY *Tiffany Dowell Lashmet*

TIFFANY DOWELL LASHMET

February is an extremely busy time of year for many, our family included. Between speaking at producer meetings, calving and Texas major stock shows, we have been running ourselves ragged. Several times over the past couple of months people have looked at me and said, "I don't know how you do it all."

I always struggle with how to respond. The short answer is, I am not doing it all. It is so easy to look at other people's lives from the outside or on social media, and think they have things more together, they get more done in a day, they are just better at this life thing.

But no one is doing it all. That is something I must remind myself occasionally, as well. It's easy to fall into the trap of believing we are failing based on perceptions of perfection.

So, again, let me be clear: I am not doing it all. I often have dirty laundry piled up that is nearly as tall as me. I have not seen my kitchen tabletop in at least a month, because that is where I fold the clean laundry and never have time to get it put up. My floor is only swept when the woman I hire to clean my house comes every other week. I've given up on trying to manage my children's room organization and have taken to just closing the door. I have someone pick the kids up after school while I am still at work.

I wish I could find a magic solution for the empty feed bags that pile up and seem to duplicate nightly in the barn. I would love to make time to read a book, watch a TV show or get a pedicure.

Those things will come soon enough. Instead, my goal is to accept that it is fine not to do it all and hope that sliver of grace brings a much-needed moment of calm in this busy season. ///

Tiffany Dowell Lashmet juggles family, farming, writing, livestock and a career in ag law from the Texas Panhandle. Follow her blog **alwaysafarmkid.com**, on Instagram at **alwaysafarmkid** and **@TiffDowell** on X (formerly Twitter).

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Story and Photos By **Dan Crummett**

A Return To Pastures

This couple is converting marginal land to forages for cattle grazing and to rebuild soil health.

Over 20 years of their marriage, Marty and Crystal Williams have steered their farming enterprise in north-central Oklahoma with an eye toward the future. It begins with a reverence for the land and its limitations, and a willingness to adapt—even when it means reverting to the past by turning land back to native grass.

Today, Frontier Farms is a diversified, no-till operation producing winter wheat for grain and grazing, and rotations of corn and grain sorghum with double-crop soybeans when rains and markets look promising. In addition to the small-grain forage produced, native prairie grass pastures support a 200-head commercial Angus cow herd and around 250 stocker calves per year.

The patchwork of farmland and grass pastures provides excellent wildlife habitat, which supports a vital economic stream to the farm in annual migratory waterfowl hunting leases. Plus, the couple is finalizing plans with the Natural Resources Conservation Service to implement a 99-year lease on 320 acres for a permanent wetland for waterfowl and other wildlife.

Marty and Crystal Williams are transitioning marginal cropland to native grass pastures to support their expanding beef herd.

STEWARDSHIP ETHIC

The sixth-generation farm is located west of Red Rock, in Noble County, where the topography changes from Flint Hills-like native tallgrass prairie east of the Arkansas River to soils more akin to the Red Rolling Plains further west. Marty Williams grew up farming conventionally, continually turning the soil and burning diesel to prepare cropland for planting.

"While my dad was a conventional farmer back then, he always had a respect for the land," he says, explaining his own deeply held land stewardship ethic. "He always tried to take care of our native grass pastures with conservative stocking rates and brush control. While he used the plow, he never burned stubble like so many of our neighbors were doing.

Editor's Note: *The Williamses and their farm were recognized in 2023 as Oklahoma's recipients of the Leopold Conservation Award presented for achievement in voluntary conservation efforts by the Sand County Foundation and American Farmland Trust.*

Watch the Video
https://youtu.be/k16Hc4RnKks

When Crystal and I began no-till farming on our own in 2005, he began to adopt no-till and uses it today."

As newlyweds, the couple settled on the family farm and began Frontier Farms on local rented land. Like most area farmers, Marty liked to raise winter wheat. However, he soon found Italian ryegrass infestations made moving to summer crops a necessity for weed control. As a result, "It just makes sense to leave mulch on the ground," he adds.

Nearly 20 years later, Marty is a confirmed no-tiller. In addition to maintaining residue on cropland throughout the year, he was an early adopter of variable-rate fertility on his small-grain acres.

For many years, Marty used the GreenSeeker system to pinpoint nitrogen needs on wheat, oats and canola. A change in vendors for that technology became cumbersome, so he now relies on Ninja Ag, based in (nearby) Stillwater. Fields are scanned by satellite, and he has nutrient prescription information within 24 hours.

Williams applies 50 to 70 pounds of preplant 11-52-0 or 18-46-0 starter fertilizer followed by another shot of 10-34-0 through the planter. Satellite imagery throughout the growing season pinpoints further crop nutrient needs. The remote sensing allows Marty to apply only the nutrients needed, and in a timely manner, to ensure crop health and reduce runoff. He consistently uses less fertilizer than traditional broadcast applications.

"I don't use remote sensing for corn and grain sorghum. Those crops grow so fast, I'm afraid I might miss a critical window," he explains. "On those fields, we use 40 pounds of nitrogen per acre on the whole field, then tissue-sample at about V10. If it looks like rain, we'll sidedress for additional yield. It's always a dicey decision because of the weather. Many years, we don't sidedress at all, taking a 'given' crop rather than investing in fertilizer that may go unused."

Marty's no-till and rotational practices have improved the soil through the years. Soil organic matter has gone from 1%, typical in this area, to about 2% on many fields.

"Rebuilding soil is a long process," he says. "We're buying a nearby farm that I rented while I was in high school and have farmed ever since. It took 15 years before it planted decently, and right now, it's just becoming a good no-till field."

Crystal Williams started Frontier Beef as a direct-to-consumer business to diversify farm income.

FUTURE PLANS

In keeping with their conservation ethic, Marty and Crystal are looking to the future by steadily converting cropland back to permanent native pasture.

"Much of the land we own is marginal at best and should never have been broken out in the beginning," Marty explains. "When we get older, we want to be cattle-based, so we're returning those acres to grass." Several years ago, Crystal launched Frontier Beef, a direct-market farm-to-table beef enterprise to improve the farm's revenue stream.

So far, the couple has reseeded about 400 acres to native prairie species, such as big bluestem, little bluestem, Indiangrass and switchgrass. These perennials thrive in Oklahoma conditions with little to no care other than brush control.

"We farm among pastures now, and as we can afford to do so, many of those fields will also become pasture," Marty explains.

WILDLIFE CONSIDERATIONS

The extended Williams family includes many hunters who enjoy harvesting their own deer, turkey, quail and pheasants. Those privileges will remain for family. Waterfowl is a different matter, however. Ducks and geese are plentiful in the area.

"We're active in managing our land with a local outfitter who guides migratory waterfowl hunts here," he says.

The wildlife connection is about to become even stronger. "Everything is designed and approved for our wetland easement," Marty explains. "It's on a farm I bought from my landlords, and over 13 years—even with good crops averaged in—it averaged only $50 per acre. It flooded two out of every five years."

The plans call for damming several natural channels and sloughs to provide 12 acres of permanent water and 40 acres of storage when it's full. Currently, he's cropping it for waterfowl hunting leases, but ultimately, it will be seeded to native grass. When it's funded and completed, it will be a valuable soil conservation structure, slowing natural runoff during heavy rains. ///

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[1] Results based on internal John Deere strip trials. Results vary based on crop. Weed-control results based on dual-tank operation, adding an additional herbicide that could not be added to an existing herbicide mix in a single tank. Individual results will vary.
[2] Compared to broadcast spraying.
[3] See & Spray Premium is currently available for MY2018 or newer sprayers. See your John Deere dealer for details.


JOHN DEERE

Story and Photos By **Joel Reichenberger**, @JReichPF

The Great Shift

The COVID pandemic five years ago left a new world for many farmers in its wake.

With a beanie, a bushy beard and a thick, wool sweater, Jake Kristophel looks like he belongs at a farmers market, fittingly because he's spent plenty of time at them through the years.

Kristophel has big ideas about the American food supply—what goes into it, what comes out of it and the community that arises around locally grown food. He contributes to the local economy mostly with sheep and hogs these days, though not for lack of trying other animals. Working on land reclaimed from a strip-mining operation in Plain Grove, Pennsylvania, he's raised everything from rabbits to turkeys, with plenty of vegetables in between.

When COVID hit five years ago, he was already five years into running Fallen Aspen Farm, feeding animals and mending fences during the week, and working farmers markets on the weekends.

Even he was shocked at the tidal wave that emerged from the pandemic, waking up to a new reality as shoppers flocked to farms like his in the face of empty store shelves.

"We already had a decent following before that," he says, "but that COVID year—that year was booming."

Jake Kristophel has found a sweet spot with sheep and hogs at his Pennsylvania operation, Fallen Aspen Farm.

In many ways, nothing was the same after the pandemic swept into America in the early spring of 2020. It's changed where Americans work (from home) and what they store (toilet paper). Somewhere high on the list of what's changed is the country's relationship with food: what's in it, where it comes from and where it can be found when grocery shelves are empty.

For farmers, those changes led to unique, even life-changing, opportunities, as direct-to-consumer sales exploded, and the world of Saturday-morning markets turned into a new way of life. Even now, after the tides of panic have receded, and food has long since returned to traditional stores, farmers swept up in the initial craze have not returned to normal.

The shift that began five years ago, to many farmers, now means there's no going back.

GRINDING IT OUT

Nigel Tudor initially reacted like the rest of the country when the COVID pandemic became more and more real. There was disbelief and concern. Then, expecting to be stuck at home, he vowed to finally finish some lingering projects around his family's home and small Avella, Pennsylvania, farming operation.

Tudor had little idea how the next few weeks would reshape the next few years and how five years on, he could look back on the wild days at the start of the pandemic as the time that forever changed his family farm.

He never got the chance to get to those around-the-house projects, because starting with a trickle then turning into a roar came hundreds of online orders for the stone-ground flour his family had already been grinding for years. The direct sales of their flour had been an insignificant portion of their overall operation initially, but suddenly, customers clamored to buy it.

Stone-ground flour has proven an enduring hit for Nigel Tudor and his family. The farm grows 13 different varieties of grain.

"Everyone started baking. They couldn't find any more flour in the supermarket, so they went online and found us," Tudor explains.

He and parents, Dale and Marcy, make up Weatherbury Farm. Their small fields tuck into hills southwest of Pittsburgh, where large-scale production agriculture has never been an option on their limited acreage. Instead, they've found other ways to make ends meet. Most of their land goes toward a grass-fed beef business, but about 15 years ago, they started leaving 65 acres free to plant grain. ➤

The Tudors grind their grains on a pair of European mills that fit inside an old outbuilding.

The family sells much of that to local craft distillers, but they've always ground everything they can into flour on a pair of petite European mills.

But, there wasn't always a ton of demand. Prior to COVID, they were lucky to get 10 customers a month to their farm for flour, and most of the product went to a local co-op selling farm-to-table ingredients to restaurants. Even that avenue closed just before the pandemic, as the co-op shut down entirely after selling to a larger company.

That was right about the time the Tudors' email began to ping and the phone began to ring.

Suddenly, everyone was looking for in-stock food staples, including—as the pandemic-era sourdough craze took hold—flour.

The Tudors' monthly customers ballooned from about 10 to more than 120 in May 2020.

Nothing was ever the same.

THAT'S THE HUB

One thousand miles away, in south-central Kansas, Rick McNary, photographer, writer and all-around Renaissance man, saw the winds shift just as the Tudor family had, albeit without an onslaught of emails or phone calls.

McNary had picked up steaks from a local market one early pandemic afternoon and later heard tales of panicked shoppers wandering barren supermarket aisles.

That seemed strange to him at the time given the steak he had on his plate and the knowledge that the ranch from where it had come was well-stocked. This gave way to an idea that would become a wide-reaching organization intent on helping connect curious consumers to farmers' consumables.

"I created a Facebook group and invited some farmers I know who did direct-to-consumer sales," McNary explains. "You name it what you want people to do, so I named it Shop Kansas Farms. The intent was to connect you to the wonderful farm and ranch families of Kansas, so you could purchase the food they raised."

SHOP KANSAS FARMS®
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After starting with a handful of invitations, there were 400 members within three hours of the page's creation. Just 24 hours later, there were more than 5,000 members, and for weeks, the page was adding as many as 10,000 new users each day.

Consumers were craving to shop local.

The pandemic food-supply crisis had tapped into an idea that had been lingering in the back of McNary's head for years—a local food network. There had been problems when he'd considered the idea before. There wasn't appropriate processing capability, like small-scale millers and butchers, and there was no obvious means of distribution or a hub for products.

In a flash, his impromptu Facebook group offered at least some of the solutions.

"I realized I had created that hub, a digital hub," McNary says.

He had to establish rules to keep the swiftly growing community aligned with his vision. His hub wasn't a place to sell a tractor or hire harvest help. It was only for consumable food. And, it wasn't a place to bicker about pricing or farming methods. The message to users was this: "If you don't like it, keep scrolling."

Organic or conventionally farmed? Both are welcomed.

CONNECTING TO FARMS

Soon, several trends began to really stand out.

Consumers were eager for the options provided by farmers on the Shop Kansas Farms page, and the farmers themselves—often younger than your average American farmer and many times women—were seeing new opportunity.

McNary sold his Shop Kansas Farms organization to Kansas Farm Bureau in 2022 and continues to help as a consultant. The Facebook page has 168,000 users and regularly posts offerings of beef, lamb, eggs, milk and honey, among dozens of other items. There's also an active website under the Shop Kansas Farms brand where nearly 500 farms and ranches have a presence with a list of their goods, contact information and often a family photo.

The more personal their appeal, the better they fare, he notes.

That idea fits well with Kristophel's Fallen Aspen Farm operation. He keeps up an active social media presence, showing off his land, animals and available products to an eager audience while attracting hundreds of likes, views and comments with each post. The COVID rush acted like lighter fluid to his flame.

The initial surge eventually slowed, but he's retained plenty of customers from that time, enough to make him question his future at time-intensive farmers markets and instead go all-in with pickup and delivery sales.

The Tudor family, of Weatherbury Farm, embraced a similar approach, finding ways to highlight what makes their operation different. They grow 13 varieties of grain, including four different varieties of hard red winter wheat, rye, oats and rare grains like spelt and einkorn. They describe what each is on their website and sometimes even how it came to be planted in Pennsylvania soil. Nigel grew the obsidian black winter emmer, for instance, from 12 kernels he brought back from a trip to a trade show in Germany.

The family goes even further to connect the customer to their hilly fields by including a scannable QR code on each package of flour that takes buyers to a page detailing the farming of that product. A bag of organic rolled oats, for example, shows the crop was planted March 21 and harvested July 26. There are 10 updates with photos in between.

Each bag of flour from the Tudors' farm comes with a scannable QR code detailing that season's growth of the crop.

"We have to keep all that information to have it certified organic anyway, so we just keep a camera in the tractor, and every time we're in a field, we stop and snap a picture of it," Tudor explains. "Customers love it."

A NEW NORMAL

Many farmers and ranchers who turned to direct sales reported a dip in 2021 after the initial COVID panic abated, and grocery store shelves were again mostly stocked.

The month of May 2020 did represent the high-water mark for the Tudor family and their organic flour grinding operation. Business had slowed considerably by early 2021. But, they didn't revert back to the 2019 business model, and new customers kept finding them. By the end of 2024, they were doing nearly as much business as they had in the very height of the pandemic craze.

The experience has been similar across the spectrum.

"It'll continue to grow," McNary says of the larger direct-sales movement.

He's helped Shop Kansas Farms reach new markets, partnering with both government agencies and even local school districts to find outlets for producers, looking for opportunities that simply didn't exist five years ago as COVID-19 burst into the headlines.

It's become a new normal, he says, a new way for farmers and ranchers to survive.

"This direct-to-consumer movement is a way to keep family farms afloat, or at least to give them hope because they can't afford another 10,000 acres or don't want another big operating loan," he says. "You just have to think differently." ///

By **Dan Miller**, @DMillerPF

Kubota Rolls Out Technology Innovations

The company introduces products for use in agriculture and construction.

Kubota North America revealed in January during CES 2025 in Las Vegas a line of labor-saving imaging and autonomous machines and concepts targeting orchard and vineyard markets, and also the residential and construction segments it serves. CES 2025 is the largest tech industry event in the world.

One of Kubota's new innovations, the smart cart KATR, has been named a CES 2025 Best of Innovation in the Industrial Equipment and Machinery category.

"We at Kubota (decided) two or three years ago that we are going to be a solutions provider," Todd Stucke, president of Kubota Tractor Corp. and senior vice president, Kubota North America, tells DTN/*Progressive Farmer*. "We are making a statement that Kubota is embracing technology."

Kubota is focusing its current technology efforts on labor-intensive, high-value crops. "Because it's value and labor intensive, if we can get this technology to work there, we can bring it to other areas," he explains.

Kubota equipment on display at the CES included:

➤ **KATR.** This is the company's new four-wheeled all-terrain, multifunctional robot. KATR's stability system adjusts its four legs to maintain a level cargo deck when working on hills and slopes, including off-road work. Powered by a combustion engine or electric drive, the KATR can carry up to 530 pounds. It works autonomously or is remotely controlled by a human to tackle a range of applications in agriculture and construction. In addition to cargo, the KATR's deck can be used as a platform to mount production tools such as Kubota's pruners and cameras. First availability is the second quarter this year in Japan with distribution coming soon to North America.

➤ **Smart Autonomous Sprayer.** The fully autonomous chemical sprayer scouts to identify pests and sprays with precision to lessen spray drift and overuse. Kubota has not announced a commercial release, although its first market introduction will likely be Europe.

➤ **Flash.** Ultradetailed images are gathered by way of Flash to detect plant-level health. When coupled with artificial intelligence (AI), Flash provides recommendations on a grower's dashboard to help make crop decisions one plant at a time.

➤ **Smart Robotic Pruner.** When combined with AI and machine learning that classifies buds and canes based on position and fruiting potential, it optimizes vineyard production. Available now.

➤ **Smart Plant Imager.** The Imager uses advanced robotics and hyperspectral imaging cameras to capture real-time data and insights. Allows vineyard managers to harvest grapes at peak potential and position labor where its effort can best be used based on scouting performed by the imager. Available now.

➤ **Agri Concept 2.0.** This electric tractor concept offers data, AI, automation and electrification as a powertrain choice for human-controlled or autonomous operations. The Agri Concept 2.0 has been revised over a 2024 version of the tractor based on customer feedback.

Of the equipment at Kubota's display, demonstrations of the autonomous KATR attracted the most attention from CES attendees. It might be Stucke's favorite, too.

"I'm a farm boy from Ohio (potatoes)," he says, smiling. "When I was in the shop, I could have had it in there, talk to it and have it come to me with tools, raise itself up or down for the heights I would have needed it. Never lose a wrench." ///

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DKC66-06RIB BRAND BLEND
D: NO-TILL NON-IRRIGATED CLASS

2ND **KOGEN KALB** (IN)
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DKC66-06RIB BRAND BLEND
F: STRIP-TILL, MINIMUM-TILL, MULCH-TILL, RIDGE-TILL NON-IRRIGATED CLASS

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DKC68-35RIB BRAND BLEND
G: NO-TILL IRRIGATED CLASS

3RD **ROBBIE NEWCOMB** (VA)
352.29 Bu/A
DKC68-35RIB BRAND BLEND
I: CONVENTIONAL IRRIGATED CLASS

3RD **ALEX NOLL** (KS)
340.39 Bu/A
DKC68-35RIB BRAND BLEND
A: CONVENTIONAL NON-IRRIGATED CLASS

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1ST **TROY UPHOFF** (IL)
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DKC68-35 BRAND
B: CONVENTIONAL NON-IRRIGATED CLASS

2ND **JEREMY WILLIAMS** (IL)
383.86 Bu/A
DKC70-27RIB BRAND BLEND
B: CONVENTIONAL NON-IRRIGATED CLASS

CONGRATULATIONS TO THE NCGA NATIONAL CORN YIELD CONTEST WINNERS WHO CHOSE TO FARM DEKALB BRAND.

JASON JENKINS

The QUEST For YIELD

Here are strategies the 2024 winners of the NCGA National Corn Yield Contest use to put more bushels in the bin.

NATIONAL CORN GROWERS ASSOCIATION

By **Jason Jenkins**, @JasonJenkinsDTN
Pamela Smith, @PamSmithDTN

JOEL REICHENBERGER

A: CONVENTIONAL NON-IRRIGATED CLASS

Sam Santini

Stewartsville, New Jersey
383.4336 bpa
Pioneer P14830Q

THE FARM. Sam Santini's grandfather, Dominic, immigrated to the United States from Italy and started Santini Farms 103 years ago. Today, Sam and his wife, Chris, are the third generation to run the farm, growing corn, soybeans and grain sorghum on about 1,600 acres.

THE FIELD. Using a John Deere 1990 CCS air seeder, Santini planted the 100-acre clay loam field with Pioneer P14830Q, a 114-day hybrid featuring Qrome technology for above- and belowground insect protection. Row spacing was 30 inches, and seeding rate was 41,000 seeds per acre, resulting in a final stand of 40,000 plants at harvest. The previous year's crop in the field was soybeans.

THE FORMULA. Building soil fertility began with an application of 1 ton of chicken manure per acre. Santini runs a liquid system that allows him to deliver 30 gallons of nitrogen per acre while planting. He then topdresses when the corn is knee high. Overall, 350 units of nitrogen and 150 units of potash per acre were applied to the crop. While fungicides have been part of his program for a while, 2024 was the first year he applied Xyway fungicide using a 2 x 2 system during planting, something he believes helped make a difference in yield.

THE FIGHT. Santini says they encountered tar spot in 2024, but it was toward the season's end and didn't hurt yields. Overall, Mother Nature was agreeable throughout the growing season. Although they endured a stretch of hot, dry weather, timely rain seemed to fall just when the corn needed a drink.

"It just seems like we get lucky every year with the thundershowers," he adds.

THE FUTURE. Santini entered his first National Corn Growers Association (NCGA) yield contest 45 years ago with an entry of 125 bushels per acre (bpa). He remembers thinking then how great it would be to get to just 150 bpa.

"Ever since then, it's been climbing," he says. "Now, my goal is 400 bpa. I haven't hit it yet, but I'm trying. A couple more years, then I'll let my grandson take my spot."

B: CONVENTIONAL NON-IRRIGATED CLASS

(Corn Belt States: IL, IN, IA, MN, MO, OH, WI)

PROVIDED BY TROY UPHOFF

Troy Uphoff

Findlay, Illinois
385.8807 bpa
Dekalb DKC68-35

THE FARM. Troy Uphoff credits his parents, Tony and Deanna, his brother, Trent, farm employees, Mother Nature and other mentors and advisers for inspiring the yields realized on Uphoff Farms. A sixth-generation farmer, he grew up studying the farming ways of Herman Warsaw, an Illinois farmer whose 1985 yield of 370 bpa held bragging rights in the state until Uphoff topped it this year. This is the second national win for Uphoff and his fourth national ranking.

THE FIELD. Rich, well-drained soils received adequate rainfall (about 6 inches in season) and no stressful temperatures during pollination. The high-yield plot was planted in 30-inch rows following soybeans and had a harvest population of 38,000 plants per acre.

THE FORMULA. Uphoff plants corn plots designed to see what accelerates yield. Matching hybrid to field and knowing how it performs is key. This year, he chose Dekalb DKC68-35, a fuller season (118-day) hybrid containing a VT Double Pro trait package that had shown promise farther south. Planted in May, it remained green into mid-September. Fungicide, fertility and insecticide treatments were applied every three weeks from mid-July through August. "We made sure that field never had a bad day," Uphoff says. The winning entry received 300 pounds of nitrogen, 300 pounds of phosphorus and 300 pounds of potash per acre.

THE FIGHT. Keeping fields clean is key. Timely and layered residual herbicides battle weeds such as waterhemp. Well-timed rains are a necessity, but so is tile in these flat, heavy clay soils.

THE FUTURE. Uphoff plans to continue working with university researchers to unlock corn secrets, such as the relationship between population and root size, and the trade-offs/benefits of harvesting at higher moisture. "The future is in 400-bushel corn," he says.

60th ANNIVERSARY *NCGA CORN YIELD CONTEST*

C: NO-TILL NON-IRRIGATED CLASS

Robert Santini

Bloomsbury, New Jersey
337.1218 bpa
Pioneer P1136AM

PROVIDED BY ROBERT SANTINI

THE FARM. Robert Santini and his wife, Sharon, started New Village Farms in 1971. They raise corn, soybeans, milo and wheat on about 2,000 acres in western New Jersey, roughly 60 miles from New York City. His daughter, Michelle Santini, is a partner in the operation and was also an NCGA yield contest winner in 2024.

THE FIELD. The clay loam field had been in soybeans in 2023. At the suggestion of his seed dealer, Santini selected Pioneer P1136AM, a 111-day hybrid containing two modes of aboveground insect protection and tolerance to glufosinate and glyphosate. Santini planted the corn into the bean stubble in 30-inch rows using a 12-row John Deere 1795 planter. Population at harvest was 38,000 plants per acre.

THE FORMULA. Soil testing guided Santini's fertility program, which included 200 units of nitrogen, 150 units each of phosphorus and potash per acre, and the application of chicken litter prior to planting. Throughout the season, weekly tissue samples were taken to ensure that any nutrition deficiencies were identified and corrected. Santini is a proponent of fungicide, which he applied both in-furrow and foliar. However, he believes one of the most important steps to growing high-yielding corn has nothing to do with any single product.

"I used to plant corn earlier, but I don't look at the calendar anymore," he says. "Now, I wait for the conditions. Once that ground temperature is right, that's when I go."

THE FIGHT. While corn growers in many regions fought drought conditions during 2024, Santini was not among them. Pests and diseases were also negligible.

"It was a pretty good season. Everything came up nice, the weather cooperated, and we got off to a good start," he says. "It got a little dry in June, but with the genetics these days, it wasn't a problem."

THE FUTURE. While diseases weren't much of an issue for Santini in 2024, he remains vigilant, most notably against tar spot, which found its way to New Jersey the season before.

"It's here now, so that will be a bigger challenge for us this coming year," he says. "We're preparing for it." ➤

JOEL REICHENBERGER

D: NO-TILL NON-IRRIGATED CLASS

(Corn Belt States: IL, IN, IA, MN, MO, OH, WI)

Shawn Kalb

Dubois, Indiana
402.7334 bpa
Dekalb DKC66-06RIB

THE FARM. The Kalb family is a corn yield contest regular. This year, it was Shawn Kalb rising to the top of the winner's circle—her fifth national first place honor. Son, Kogen, and husband, Kevin, also placed in the national contest this year, while daughters, Emmersen and Rhylan, were state winners. Sandy silt loam soils in this part of southern Indiana are consistent but not weather-proof.

THE FIELD. This field has delivered national honors before, and the same hybrid (Dekalb DKC66-06RIB) placed first in this category in 2023. The winning field sits in a valley protected by hillsides, which allowed it to endure better than other fields when Hurricane Helene came to call and caused some lodging in the still-green crop.

THE FORMULA. In-furrow microbes and a 2 x 2 x 2 band of nutrients below the seed got things started. Tissue samples starting around V3 continue through black layer and plan the subsequent diet, which is delivered via Y-drops. She planted in 30-inch rows behind soybeans and had a 44,000-plant population at harvest.

THE FIGHT. No significant rainfall from tassel to critical grain fill hurt yields across the farm this year. "Fortunately, we didn't have crazy heat. At the end of July, we were set up for our best crop ever. We had the high ovule counts, and ear size was massive. Most of the kernels held on, but they were smaller than normal due to lack of rainfall," she says. Rains that fell with Helene helped preserve some dry matter, but lodging created harvest headaches.

THE FUTURE. The goal is to keep reaching to exceed the national dryland record of 450 bushel plus. Incremental yield gains beyond a certain level require near-perfect conditions, but the Kalbs say they'll keep pushing.

ENTRIES FROM 45 STATES

E: STRIP-TILL, MINIMUM-TILL, MULCH-TILL, RIDGE-TILL NON-IRRIGATED CLASS

Michelle Santini

Phillipsburg, New Jersey
353.2038 bpa
Pioneer P1136AM


PROVIDED BY MICHELLE SANTINI

THE FARM. For about 20 years, Michelle Santini has been a partner in New Village Farms, which her parents, Robert and Sharon, established more than a half-century ago. The farm is located in western New Jersey, near the Pennsylvania border. The Santinis grow corn, soybeans, milo and wheat on about 2,000 acres.

THE FIELD. The 40-acre clay loam field—located less than 3 miles from the field where Robert grew his yield-contest-winning corn in the 2024 No-Till Non-Irrigated Class—was in soybeans in 2023 and had previously produced contest wins for the Santinis. Robert says the field's orientation allows for rows to be planted in an east-west fashion, which he thinks makes a difference on this field.

The field was planted on May 10 with Pioneer P1136AM, the same 111-day hybrid as in Robert's winning entry. The only difference was that the 12-row John Deere 1795 planter placed the seed into strip-tilled 30-inch rows. Final stand count was 38,000 plants per acre.

THE FORMULA. Not surprisingly, the Santinis' fertility plan for this field mirrored the one down the road: 200 units of nitrogen and 150 units each of phosphorus and potash per acre, and the application of chicken litter prior to planting. Similarly, weekly tissue sampling was conducted to make sure the crop wasn't deficient in any nutrient. Weed control was achieved with Bicep II Magnum, while two fungicide products—Xyway delivered in-furrow and Miravis Neo sprayed twice during the season—provided disease protection.

THE FIGHT. With so many similarities between the Santinis' two winning entries in 2024, some may wonder why the same hybrid planted in similar soil and grown with the same production blueprint would have a 16-bushel yield difference.

"It comes down to Mother Nature and H_2O," Santini says. "This field got one extra shower of about a quarter-inch. That's all it took."

THE FUTURE. Contest participants often mention that the inputs and management practices they "experiment" with in contest fields often determine decisions they make across all their corn fields. The Santinis are no different, and one practice they'll be scaling up in 2025 is fungicide application.

"We haven't sprayed some of our noncontest fields, but I think we'll be going straight across the board with fungicide now," Santini says. "I think it pays off."

PROVIDED BY GALT PORTER

F: STRIP-TILL, MINIMUM-TILL, MULCH-TILL, RIDGE-TILL NON-IRRIGATED CLASS

(Corn Belt States: IL, IN, IA, MN, MO, OH, WI)

Galt Porter

Mercer, Missouri
405.1317 bpa
Pioneer P1742Q

THE FARM. Galt Porter was born to push corn yields. His parents, Gary and Lori, became active in yield contests decades ago. Today, Porter Farms and several of its partners participate in corn, soybean and sorghum contests.

THE FIELD. Porter considers himself a Missourian, but his winning field lies just across the state line in south-central Iowa. He and brother, Grey, purchased the bottomland together with a beginning farmer loan. A creek serves as a natural dividing line for their yield contest entries. Grey placed third in the same category this year with a 393.7122-bpa entry. "He beat me in this same field two years ago. I guess it was my turn," Porter says.

THE FORMULA. The field was blessed with perfectly timed rains. Strips were formed in late March with nutrients banded 6 to 8 inches deep. Multiple split applications of liquid nitrogen followed. In-season applications were Y-dropped with levels based on tissue testing, and the final application at grain fill included a fungicide and insecticide. Total nutrients applied included 300 pounds of nitrogen, 80 pounds of phosphorus and 80 pounds of potash per acre. The crop was planted in 30-inch rows after soybeans with a harvest population of 38,000 plants per acre.

THE FIGHT. Early rains were followed by cloudy days that stalled corn development, especially where soils were saturated. The field would benefit from additional tile drainage, Porter believes. "Getting moisture when you need it, but not too much, is the name of the game when you don't have irrigation," he says.

THE FUTURE. Porter plans to continue turning more acreage over to strip-till as it limits trips over the field, gives seed a warm start and helps meet conservation goals. Split application is helping target nutrient needs.

SIX ENTRIES OVER **400** **bpa**

PROVIDED BY BEN JACKSON

G: NO-TILL IRRIGATED CLASS

Ben Jackson

Wrightsville, Georgia
400.3078 bpa
Dekalb DKC63-58

THE FARM. Ben Jackson treasures a 1992 photo of his father, Sammy Jackson Jr., knee-deep in a 126-acre cotton field that yielded 1,789 pounds per acre. "This is where I learned—both how to push these soils and the desire to do it," says Jackson, who represents the fifth generation on this east-central Georgia family farm. Today, he and his sons, Sam and Nicholas, and his nephew, Morgan Jackson, manage 4,500 acres of primarily corn and soybeans, using cotton and grain sorghum as secondary rotation crops.

THE FIELD. That cotton photo was snapped in the same field where Jackson produced this year's winning corn yield. He's been building these dark, loamy soils for decades. Surpassing 400 bpa was exciting, but the whole field average of 364 bpa was rewarding. The field was subsoiled, fall-seeded to triticale and no-tilled in 30-inch rows with a 113-day conventional hybrid that measured 45,500 plants per acre at harvest.

THE FORMULA. Jackson tissue-tests high-yield plots (about every other day) throughout the season to guide nutrition needs, which are mainly supplied through fertigation. The field received 500 pounds of nitrogen, 400 pounds of phosphorus, 350 pounds of potash, 500 pounds of manganese and 4 tons of poultry litter per acre. He scouts plots daily to watch for issues.

THE FIGHT. Early planting is critical to avoid pollination during triple-digit daytime temps and steamy nights. "Pumping 60°F water during a 100°F day can shock corn plants," he notes. "Fertigation is done at night."

THE FUTURE. Jackson's goal is 500 bpa in plots. He's seen that and higher cross the yield monitor. "The realistic goal is to take what I learn and make 300 bushel across all my corn acres," he says. ➤

SAMANTHA SMITH

H: STRIP-TILL, MINIMUM-TILL, MULCH-TILL, RIDGE-TILL IRRIGATED CLASS

David Hula

Charles City, Virginia
490.6276 bpa
Pioneer P14830VYHR

THE FARM. David Hula's corn yield roots run deep. The highest yield recorded in the 2024 contest, it is Hula's 13th NCGA high yield win, and he remains the only farmer to break the 600-bushel mark in the contest (2019, 2021 and 2023). A third-generation farmer, Hula's legacy began with a grandfather who broke the 100-bushel corn yield barrier, and his father passed 200 bpa. He farms approximately 4,000 acres with brother, John, and son, Craig. In fact, Craig placed second in this same class in 2024 and scored the second-highest overall yield in the contest with 461.3025 bpa.

THE FIELD. Renwood Farms lies in the Chesapeake Bay watershed and uses surface water from the James River for irrigation. Soil CEC (cation exchange capacity) can range from 2.1 to 6.7, and 1-acre grids are used to manage the differences. This entry followed soybeans, was planted in 30-inch rows and recorded a harvest population of 47,900 plants per acre.

THE FORMULA. Hula's systems approach to production starts with soil sampling and flagging corn emergence. Seed and in-furrow treatments are routine. Tissue sampling begins around 350 to 425 GDUs (growing degree units) to guide in-season management. In 2024, the winning field received a total of 420 pounds of nitrogen, 137 pounds of phosphorus, 360 pounds of potash, 6 pounds of boron, 60 pounds of sulfur, 15 pounds of zinc and 2 tons of chicken litter per acre.

THE FIGHT. Corn emergence was ideal this spring, but drought forced early watering, and pumping continued until pollination. "Things looked promising until grain fill. Then we noticed that even with irrigation, we couldn't keep tissue level up to the levels expected. Due to the excessive heat, the plant did what it naturally does but at a faster rate, and that limited top-end potential," Hula says.

THE FUTURE. He plans to keep focused on placing the right seed in the right environment.

SCAN FOR MORE

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I: CONVENTIONAL IRRIGATED CLASS

Rodney Harrell

Leesburg, Georgia
393.8045 bpa
Dekalb DKC68-35

PROVIDED BY RODNEY HARRELL

THE FARM. Rodney Harrell began his farming operation in southwest Georgia in 1972. Today, he and his son, Alex, raise corn, soybeans, wheat and watermelons on roughly 4,000 acres, of which about 80% is irrigated. The Harrells have participated in the NCGA National Corn Yield Contest for two decades.

THE FIELD. It was the second season the Harrells planted Dekalb DKC68-35, a 118-day VT Double Pro hybrid. The corn was seeded in late March in 30-inch rows at a rate of 44,000 seeds per acre. The 60-acre sandy loam field equipped with center-pivot irrigation was the same one in which Alex produced soybeans yielding a then-record 206.7997 bpa in 2023. He raised the bar to 218.2856 bpa in 2024 in another field 15 miles away.

THE FORMULA. The Harrells placed bands of fertility in the soil during tillage. At planting, biologicals, humic acid and zinc went in the furrow, while additional fertility was applied using a 3 x 3 liquid system. Drones and a ground rig equipped with EZ-Drops were employed for in-season fertility. Alex added they are proactive with their fungicide and insecticide programs.

"Everybody does the big stuff," Rodney says. "But, it's the little details that make big yields."

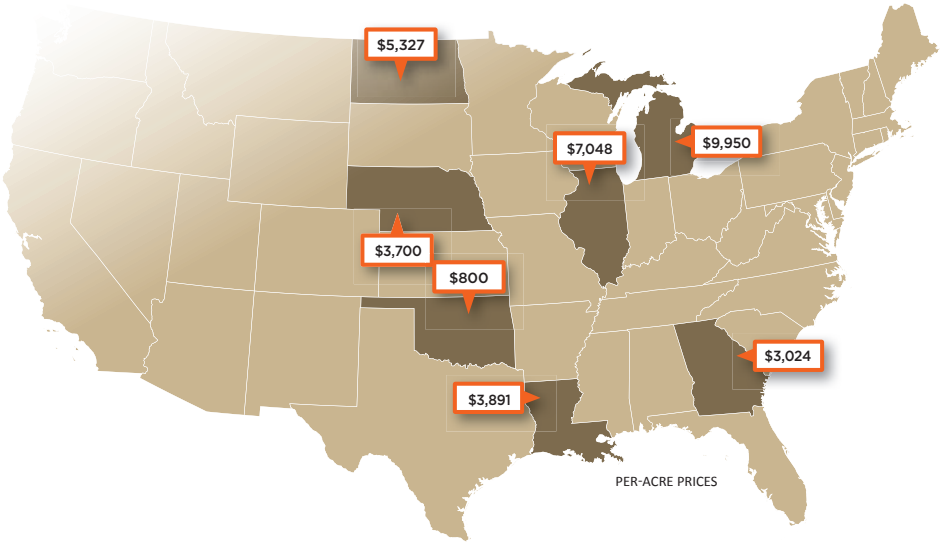
THE FIGHT. The crop got off to a terrific start with nearly perfect emergence. Tissue sampling between 300 to 400 GDUs showed that key nutrients were at levels for producing high yields. But, then Mother Nature threw a curveball.

"I think we had close to 500-bushel potential, but then the heat hit from R1 to R5," Alex says. "Nighttime temps in the 80s were too much heat in the canopy. It shortened the reproductive cycle, and we couldn't pack on the kernel weight."

THE FUTURE. Rodney believes a higher plant population led to a thicker stand that held more heat. In 2025, the Harrells intend to plant multiple populations in each field.

"Last year, our lower populations overall outyielded our higher ones. In 2023, it was the exact opposite," Alex says. "So, we're going to plant each field with three populations and spread out the risk." ///

Recent Farmland Sales



GEORGIA, Jefferson County. A mostly wooded 205-acre tract sold in online auction in December for $620,000, or an average of $3,024 per acre. The land includes a 28-acre hayfield and has two different creeks on its borders. It was advertised as excellent hunting ground with the potential for future homesites. **Contact:** Joe Durham Sr., J. Durham and Associates; jdurham@jdurhamauctions.com, 229-881-1490
jdurhamauctions.net

ILLINOIS, Jo Daviess County. A 708-acre farm with 362 tillable acres, 165 acres of woodland and waterways, and 150 acres of pasture and grass sold for $4.99 million, or $7,048 per acre. Nestled in northwest Illinois' rolling hills, the farm features four buildings, including a stone home and carriage house, and two ponds. The farm's Eleroy and Rozetta silt loam soils boast a 104 Productivity Index. **Contact:** Mark Mommsen, Martin, Goodrich and Waddell; mark.mommsen@mgw.us.com, 815-756-3606
mgw.us.com

LOUISIANA, Caddo Parish. A 514-acre farm with 506 tillable acres sold for $2 million, or $3,891 per acre. The farm, leveled and irrigated, has three irrigation wells with underground pipe and risers to every field. It is leased to a local farmer with high yields of corn and soybeans. **Contact:** Carroll Fields, BrokerSouth Ag; carroll.fields@gmail.com, 318-348-0481
www.brokersouthag.com

MICHIGAN, Saginaw County. A two-parcel farm of 52.26 acres located north of Frankenmuth recently sold at public auction for $520,000, or $9,950 per acre. The flat and open farm has no obstructions and highly productive light loam-type soils, all of which are tillable. The buyer was a local farmer who owns contiguous land. **Contact:** Steve Herr, Farmers National Co.; sherr@farmersnational.com, 810-569-5638
www.farmersnational.com

NEBRASKA, Hitchcock County. Five parcels encompassing 900 acres of irrigated, dryland grass and Conservation Reserve Enhancement Program (CREP) land sold at hybrid auction for $3.33 million, or $3,700 per acre. Irrigation on the first (305 acres total, 201 irrigated) and second (90 acres total, 80 irrigated) tracts raised their value, bringing $5,600 and $5,500 per acre, respectively. The third tract, 255 acres of pasture with underground waterline and tanks, sold for $950 per acre. The 90-acre dryland crop farm sold for $2,400 per acre, and the buyer retains the wheat crop that was planted in fall. The 160-acre fifth parcel contains a center pivot and well, but most of the acreage is enrolled in the CREP program until September 2026, with an annual payment of nearly $180 per acre. **Contact:** Corry Busse, Farm and Ranch Realty Inc.; frr@frrmail.com, 719-342-2997
www.farmandranchrealty.com

NORTH DAKOTA, Burleigh County. Four buyers split 1,177 acres that came up for auction east of Bismarck last fall, totaling $6.27 million, or an average of $5,327 per acre. The Class II and Class III soils have Productivity Index ratings from the high 60s to the low 80s. The farm's Parshall-Lihen fine sandy loams and Roseglen silt loam soils support a number of crops, including corn, soybeans, wheat and more. Three of the parcels lie between Interstate 94 and Highway 10, providing easy access. **Contact:** Alan Butts, Pifer's Auction and Realty; alanb@pifers.com, 701-400-8858
www.pifers.com

OKLAHOMA, Kay County. A 224-acre farm sold in online auction for $179,200, or $800 per acre. The property is more than 70% Class II and III soils, consisting of Kirkland-Renfrow complex and Kirkland silt loam soils. The remaining soils are of the Lela-Drummond complex. Overall soils have an National Commodity Crop Productivity Index rating of 42.1. The property has a history of primarily winter wheat and occasionally soybeans. **Contact:** Jared Moyer, National Land Realty; jmoyer@nationalland.com, 580-273-4220
www.nationalland.com

These sales figures are provided by the sources and may not be exact because of rounding.

Submit recent land sales to
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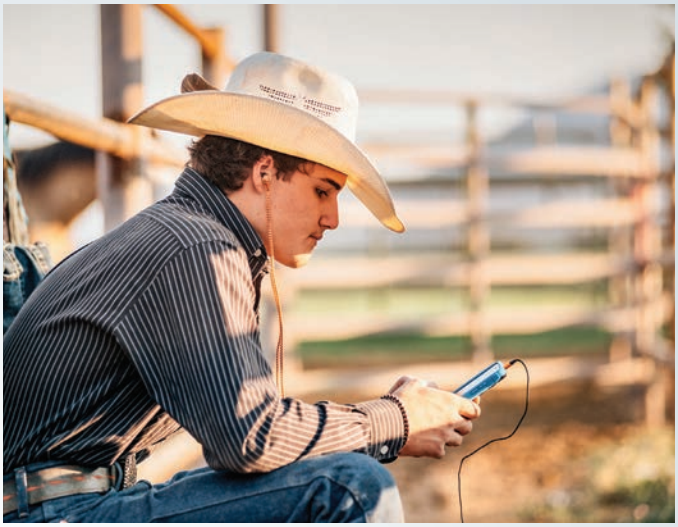
Set Up The Next Generation For Success



GETTY IMAGES

Owners of family farms and ranches often hope some or all members of the next generation will return to the family business. A son, daughter or grandchild; a sibling partnership; or a group of cousins may represent the legacy of past generations and the future stewardship of the family's assets.

However, the transition from one generation to the next isn't always easy. The shift often happens while the business is growing, while younger family members are learning and while older family members are trying to let go. It's like changing a tire while the truck is moving down the road.

There are a few guidelines that help set the stage for a successful return of the next generation. Consider these strategies as you plan for its involvement.

Opportunity not obligation. Parents want their children to choose fulfilling careers, hoping the next generation's passion includes participating in the farm or ranch. But, if you "expect" your children, grandchildren, nieces or nephews to return, they may not feel the freedom to choose. A feeling of guilt or a sense of obligation may drive their decision, and later in life, they may resent the business or feel trapped. The result is a business plagued by behavioral and relationship problems.

Encourage responsibility early. When family members of the next generation are in the teenage years, reward them for being responsible. For example, hire them to care for animals or equipment, or to perform a specific, regular job outdoors or in the office. Have them track their time, then pay them for their work. Doing so will help them develop a sense of contribution, importance and self-esteem, all while hopefully fostering an interest in the business.

Spend time away. As difficult as it may seem, encourage members of the next generation to spend time away from the family and business in the late teens and early to mid-20s. First, urge them to pursue an education: college, technical or trade school, or the military. Second, push them to work outside of the family business, preferably in a larger business. Some families encourage internships between college years and then one, two or more years working for someone else. The goal is for younger family members to become aware of their strengths and weaknesses by answering to someone other than a parent. Plus, when they return, they can bring a few good ideas.

Pay the market. Many families pay a lower wage to family members in return for "sweat equity," which is a delayed promise of ownership. The dangling of this ownership carrot, often with nothing in writing, turns into a major problem when parents change or fail to complete their estate plan, or if they decide to give off-farm siblings assets that the on-farm sibling needs to survive. Paying a market-based wage makes the choice to return, and the conversation about ownership, much clearer.

Plan for ownership. Speaking of ownership, many families take an estate-based approach, putting off conversations about ownership transfers until the senior generation is quite old. Or, they take an ad-hoc approach to land and equipment purchase decisions, complicating financial, entity and estate structures and transactions.

Spend time with your accountant and attorney developing an ownership transition plan. Put it into writing, and discuss it with members of the next generation before, or in the early stages of, their return. Failing to do so can result in assumptions, confusion and conflict about the ownership transition.

A younger generation's return to the family farm or ranch should be a cause for celebration. To make a positive experience more likely, be intentional in your preparation, planning and policies to guide future generations in your family business. ///

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It still excites me to talk about manufacturing. I was born and raised in Sukup Manufacturing Co. I started welding in sixth grade and saw the value of 'grow it or make it' as a way of life. My father, a forward-thinking farmer, started the company in 1963; today it's my privilege to lead the business as President and CEO.

> "'Never say never!' It's one of my favorite mantras."

Whether it is troubleshooting on the plant floor or developing new products, I believe there's joy found in creating. For Sukup, we never settle for the status quo in our quest to help farmers feed and fuel the world. The world's harvest runs through Sukup.

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Liver Flukes Problem Is on the Rise

Email Dr. Ken McMillan at ***vet@dtn.com***

Q *A neighbor of ours fed out a steer, and at slaughter, the liver was badly infected with liver flukes. I have never heard of that in our area, and I don't know anything about them. Do I need to be worried? What do I need to do to protect my cattle?*

A **DR. McMILLAN:** Liver flukes were once considered to be a parasite of the Gulf Coast and the Pacific Northwest. But, with the increased cattle movement across the country and warmer weather, flukes are rapidly expanding their range.

Flukes have a unique life cycle. The adult flukes live in the liver and lay eggs that are passed out in the manure. They require water to complete their life cycle. In really dry conditions, the eggs can live up to a year, but if enough moisture is present, the eggs hatch into larvae (miracidia) and swim off in search of the common mud snail. They enter the snail and, after a period of time, produce another larval stage parasite (cercaria) that swims to vegetation and attaches as the encysted larval stage parasite (metacercaria). Cattle are infected when they eat infected grass or drink infected water. Inside the intestines of the cow, juvenile flukes are released and begin a migration to the liver.

The adult fluke is about the size of a large thumbnail. They have a sharp, spiny exoskeleton and migrate through the liver and bile duct, causing severe damage. Common signs can include poor body condition, anemia, bottle jaw, diarrhea, reduced milk yields and fertility, weak calves and even death. Condemned livers are a major loss for feedlots, but the largest loss may be on the farm in lost production.

Unfortunately, the signs are similar to other internal parasites, but most dewormers are not effective on flukes. So, diagnosis of fluke infection is very important.

Many times, fluke infection is found at necropsy or at slaughter. Your veterinarian can diagnose fluke infection by finding fluke eggs on a fecal sedimentation test. There are also blood tests to check for antibodies to flukes. Ultrasound can be used to find liver damage, and the liver can also be biopsied.

Treatment of flukes can be challenging since there is no product approved in the U.S. that kills the juvenile stages, which cause much of the damage. Timing of deworming is critical since the earliest we can start killing the parasite is eight to 12 weeks after infection. Consider Albendazole (Valbazen) drench and products containing clorsulon (Ivomec Plus and generics). Check with your veterinarian on when and how often to deworm, and which product is best for your operation.

Other management steps are also critical. Since there is no way to effectively kill snails, keep cattle off wet areas or improve drainage to avoid standing water, which will reduce exposure to the snail habitat.

Unfortunately, if you do not have flukes in your area, they may be headed your way soon, so be on the lookout.

Q *We just had a dog die from parvo. Is there anything you can do if a dog gets parvo?*

A **DR. McMILLAN:** Canine parvoviral enteritis is a disease that emerged worldwide in 1978. Most experts believe it was a mutation of the virus that causes feline panleukopenia. Since dogs had no natural immunity to it, the disease spread rapidly, producing severe and often deadly results. Over the years, with improved vaccine technology, the disease has become almost entirely preventable with a professionally designed and administered puppy health program.

Most cases of parvo are treatable. Treatment focuses on maintaining hydration and electrolyte balance with intravenous fluids and medications to stop vomiting, protect the gastrointestinal tract and relieve pain. Antibiotics are given to prevent secondary bacterial infections but have no effect on the virus. Until recently, there was nothing that could be done for the virus, but recently, a monoclonal antibody has been approved that targets the virus. Initial results have been impressive.

Treatment of parvo is expensive, and some dogs may die even with aggressive treatment. Prevention of this and many other diseases is easy and much more cost-effective. We recommend starting a vaccine series beginning at 6 weeks of age and giving boosters every three weeks until the puppy is at least 15 weeks of age. We check puppies for internal and external parasites, and deworm them. We also start them on heartworm and flea and tick preventives as soon as possible. With this program, I can't remember the last puppy we had that broke with disease, so please take your puppies to your veterinarian. ///

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Story and Photos By **Becky Mills**

Bull Performance INSURANCE

Conducting a complete Breeding Soundness Exam each year is a good policy to ensure the job will get done.

You probably don't know Joe Dalton, but he lies awake at night worrying about your herd. Specifically, the University of Idaho (UI) animal scientist frets because you might be one of many producers who doesn't do a complete Breeding Soundness Exam (BSE) on your bulls every year.

More than likely, you did your homework at bull-buying time. An average of 67% of you make sure you buy a bull with a passing BSE. But, then, according to a recent National Animal Health Monitoring System (NAHMS) survey, you slack off. Only an average of 31% of producers test bulls they've had in their battery for at least two breeding seasons.

Rather than take chances with an infertile bull, veterinarian Billy Blair Jr. and cattleman Austin Taylor both believe in Breeding Soundness Exams.

Adel, Georgia, cattleman Austin Taylor is one of the 31%. He has BSEs done on the 18 to 20 bulls in his bull battery every year. "It's an insurance policy. I want to make sure they can breed a cow. I've had them go bad and not know it," he says.

HEAT-STRESS DANGERS

Sure, you can spot the obvious, such as your best bull hobbling around on three legs. There are more subtle catastrophes, though, including heat stress. Normal body temperature for a bull is around 101.5°F, but to keep the sperm factory going, the scrotum needs to stay around 94 to 96°F. Let a bull overheat, maybe on the way to the catch pen or in a trailer, and he could be out of the healthy sperm business for the length of your breeding season.

"Spermatogenesis is a 60-day process," says Kalyn Waters, Holmes County, Florida, county Extension director and cattle owner. "However, heat stress can impair spermatogenesis for up to 100 days."

Waters says the cremaster muscle in the scrotum helps a bull with thermoregulation by pulling his testicles closer to his body when it is cold or lowering them as temperatures rise. "When it is hot, and you see those testicles swinging, do not let a bull get out of a walk," she warns.

Heat stress can also happen due to a fever or if the bull is overconditioned. "The fat in the scrotum makes it harder for him to thermoregulate," Waters notes.

To be on the safe side, get the bull tested at least 60 days before turning him in with cows. The reason? It takes 60 days for him to produce sperm from start to finish, but if he fails, you have time to replace him.

And, fail he might. In a 10-year study out of Michigan with almost 3,000 beef bulls, 82% of bulls were satisfactory, 15% were deferred and 3% were unsatisfactory after complete BSEs. In a second study, 1,200 BSEs on beef and dairy bulls were done, and 37% were unsatisfactory. "That keeps me awake at night," Dalton says. "That's a huge problem."

Make no mistake, the studies reflect a complete BSE, not just a semen test. There was also a study done with 200 Holstein bulls, 12 to 15 months of age. "They were plenty old at 12 to 15 months of age, but 36% were unsatisfactory," Dalton says. "Here's the kicker: 57% of those bulls failed because of the physical exam alone. That's why a semen test, taking a sample, looking at motility, looking at morphology and saying, 'Yep, all is good,' is not sufficient."

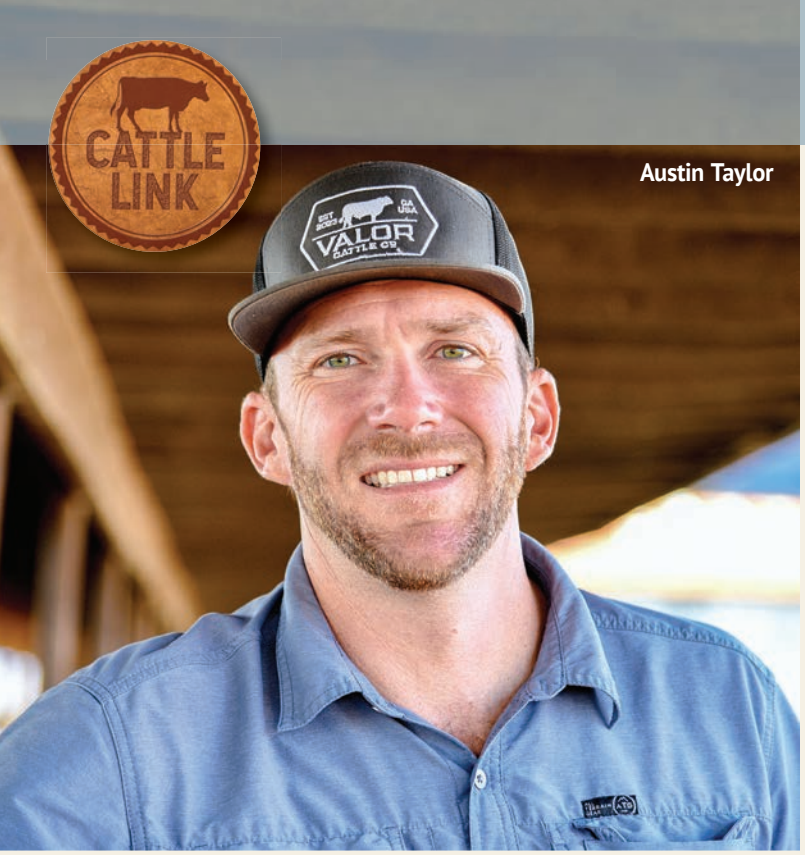

Billy Blair, DVM

STEPS TO TAKE

For a complete BSE, start with the bull's eyes. He needs two of them, healthy ones. "The primary cue to a male of a female in heat is eyesight," he explains.

Next in line are his feet and legs. Jennings, Florida, veterinarian Billy Blair Jr. says, "I watch the way he walks in the chute. Evaluate his feet, look for corns between the toes and cracks in his toes."

Blair does an internal exam by rectal palpation and checks the prostate and both ampullae. Then, he measures scrotal circumference, which should be a minimum of 32 centimeters (cm) for a 12-month-old bull and 34 cm for a 14-month or older bull. This is a



big deal. Scrotal circumference is an indirect estimate of sperm production potential. Plus, researchers have found time and again that scrotal circumference is negatively correlated with the age his daughters reach puberty. If he has a smaller scrotal circumference, his daughters tend to reach puberty later—not a trait you want to breed into your cow herd.

While 67% of producers make sure they buy a bull with a passing Breeding Soundness Exam, that number drops to 31% when it comes to doing the exams on bulls they've had for two seasons or more.

He also palpates the testes. "Check the uniformity and softness of the testicles," Blair continues. "They shouldn't be mushy but should be firm. If they are too soft or hard, that'll show up in motility and morphology problems.

"Extend and look at the penis," he adds. "A persistent frenulum can attach from the sheath to the tip of the penis and pull the penis back." Blair says this is a fairly simple fix. However, with older bulls, you may see injuries to the penis or sheath with scar tissue so the penis can't extend.

Next is the semen evaluation with a sample normally collected by electroejaculation. Blair puts a small amount of semen on a slide, stains it and examines it through a microscope. He's looking for at least 30% progressive motility, but 70% or higher is preferable. That means the little swimmers can travel in a fairly straight line toward the target. Morphology should be 70% normal or higher, with a minimal number of broken tails and misshapen heads.

Still, when you turn your bull out with your cows or heifers, make sure he is actually breeding them. Libido is hard to measure, so your eyes on the pasture is the best way to make sure he's doing his job.

Yes, getting bulls up to do BSEs is as aggravating as it gets, especially if you must trailer them to the pen. You might not even have a chute wide enough for a mature bull. Plus, it is an added expense.

In Dalton's part of the world, BSEs typically cost $50 to $65 a bull, depending on how far the vet has to travel to get to a ranch. However, he says it's money and time well spent. "I like insurance. The benefit-to-cost ratio is $20 for each $1 invested."

He'll also sleep better. ///

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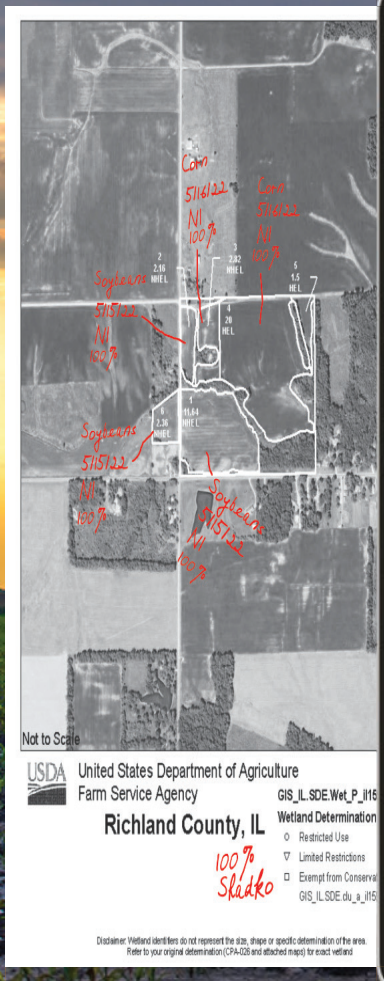

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Tractor Dash Lights: Friend or Foe?

I really rely on the red warning lights on my tractor that let me know if my oil pressure is low or my alternator is not charging the battery. However, I would like to know how these lights are told when to come on or go off. I always enjoy watching them when everything is OK, but I like to see them when the key is on with the engine not running. It gives me a secure feeling (see photo, above).

Steve: Yes, dash lights are interesting to watch. I find it unusual to stare at something on a tractor that is not working when in use (like dash lights), but I also like to glance at the dash lights when they are working when the tractor is not running with the key on. This is very different from the newer tractors that have a string of lights that can light up to alert the operator that there is something wrong with the tractor. Helicopter lights?

The oil light on your tractor is signaled to come on when the oil pressure is low. Somewhere on the engine, there is an electrical switch (see photo, left) with at least one wire on it. When the oil pressure is OK, the light has no ground because the oil pressure keeps the contact points open, so the light stays off. But, if the oil pressure drops for any reason, the switch creates a path to ground, and the points inside the switch touch, creating a path to ground, so the oil light, which has constant voltage, burns as long as the key is on.

The charge light works in a similar way. The charge light has voltage with the key on, but it needs a path to ground to light the bulb. When the alternator is charging, a little wire from the alternator to the charge light cannot supply a path to ground to the charge bulb because it has voltage. But, when the alternator stops charging, the wire to the bulb has no voltage, which now becomes a ground, so the light comes on. If your charge light is dim, then your alternator is probably going out, which allows the wire to become a ground—but not a good ground.

Finding Hidden Electrical Problems

I bought a digital multimeter to check for a bad wire, and I know that an ohmmeter is used for checking resistance in a wire. After setting the meter to ohms, how do I use it? It seems today that there are a lot of hidden problems inside the wires of my equipment, and an ohmmeter can help locate these problems. I have problems all the time finding bad wires on my equipment. I've always wondered how the ohmmeter knows if the wire is bad. Can you explain how it works?

Have a mechanical problem you can't resolve? Email Steve Thompson at ***dan.miller@dtn.com***

Please include your contact information and phone number.

Steve: The ohmmeter uses a battery in the meter to cram electrons through the wire when you place the leads on each end of the wire, and it also powers the display light. Never use an ohmmeter on any wire that has voltage. It's better to disconnect the wire at both ends when checking for wire resistance. Place the meter leads on each end of the wire. If electrons flow freely through the wire, the meter will register no resistance (000), meaning the wire has no resistance and is a good wire. If there is a break in the wire, the meter will show on the display window as it does with the meter leads held apart, usually 1 or OL (out of limits), according to your meter. It is cheaper than using an X-ray machine.

Oil Bath Air Cleaner Update

Is it possible to change my old oil bath air cleaner (see photo, right) on my John Deere 3010 to a newer dry air cleaner? The oil bath type is difficult to keep clean and is a mess to service.

PHOTOS: STEVE THOMPSON

Steve: Yes, you may have to do a little bit of work to get it done, but you can do it. I would recommend that your new air cleaner assembly has a primary and secondary filter, and all connections have no leaks. Any leak can dust an engine within hours of operation. ///

SAFETY TIP

BE AWARE!

When adjusting the front wheel spacing on a tractor by moving each axle half in or out, be careful not to get in a hurry and stick your finger in the bolt holes to feel if the holes are aligned. It seems a normal thing to do, but in this case, if the axle slips with your finger through it, it will shear off the end of your finger in a split second. I was frozen in time when I witnessed this happen to a friend. Never stop thinking when around equipment.

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2025 Global Commodity Market & Weather Outlook *

Join moderator Greg Horstmeier, DTN Editor-in-Chief, along with presenters Rhett Montgomery, DTN Lead Analyst, and John Baranick, DTN Ag Meteorologist, as they share anticipated market trends, and explore how to navigate challenges while seizing opportunities in the year ahead.

Wednesday, February 12	Thursday, February 13	Friday, February 14
2:30 – 3:30 p.m.	8:30 – 10 a.m.	10 – 11 a.m.

Successful Cover Crop Strategies: From carbon capture to farm program benefits *

Don't miss as moderator Chris Clayton, DTN Senior Ag Policy Editor, leads a panel discussion on maximizing your land's potential while tapping into emerging sustainability incentives.

Thursday, February 13
10:30 a.m. – Noon

* *All sessions will be held in Room C104 of the south wing conference center at the 2025 National Farm Machinery Show in Louisville, KY.*

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By **Dan Miller**, @DMillerPF

Inside Polaris '25 Rangers

We tested the company's new utility vehicle through the Texas Hill Country.

The Ranger Crew XP 1000 Waterfowl Edition also returns to the hunt for 2025.

Polaris had me at the air-conditioning. Normally, these off-road rides sponsored by utility vehicle manufacturers feature machines sans air-conditioning but still with plenty of mud and dust.

For this new model year 2025, Polaris has introduced to its line the flagship Ranger XP100 Northstar Edition with factory-installed heating and air-conditioning systems. Plus—and it was important to this cool and dustless ride—in-cabin air filters. The price for the single-bench seat Premium begins at $27,999, and Ultimate begins at $32,999.

The Polaris ride took media and influencers out to OX Ranch, at Uvalde, Texas. The ranch is 18,000 acres in southwest Texas, two hours west of San Antonio in Texas Hill Country.

We navigated the ranch ride in the 2025 Polaris XP 1000 Northstar, featuring a new bumper and grill, plus the solid and well-sealed Polaris Pro Shield Cab System (front power windows with the Ultimate trim package) with that air-conditioning beating back temperatures rising into the 90s.

The XP 1000 Northstars are built for the trail and for work around the farm and ranch. "This vehicle is built specifically for farmers and ranchers. We like to call this the everyday workhorse," says Brent Erspamer, director, Enterprise Program Management at Polaris. "For hauling feed or firewood, hauling bales of hay to feed the animals, this vehicle will do it every day at a high level of quality and comfort."

Polaris provides the proof. Northstars carry 82-hp ProStar engines (1000 cubic centimeter [cc] and top speed of about 62 mph). It tows 2,500 pounds with a two-inch hitch and carries 1,000 pounds in the bed—standard gas assist dump. Electric dump is available as an accessory.

The effort to shift from park, through neutral, high and low has been reduced 50%. "We improved the overall shift mechanism in the transmission. That smooth operation of the shifter is well-received if a [farmer putting up fence, for example] has to do it 100 or 300 times a day," Erspamer says.

Entering and exiting the XP 1000 Northstar's Pro Shield Cab is enhanced by doors that open past 90 degrees. Operators step onto a flat floor and seat themselves onto a bench seat. The bench seat is bolstered to provide extra passenger support and limit wear.

Operators will find a couple of additional features in the XP 1000 Northstar Ultimate. The cab includes a full-glass tip-out windshield, JBL Trail Pro 2000 Audio system and 7-inch display powered by Polaris RIDE COMMAND. RIDE COMMAND features GPS mapping and location among vehicles, intervehicle messaging and a backup camera.

Nice to have for time-starved farmers and ranchers are doubled service intervals. What was a standard 100 hours and 1,000 miles of operation between servicing is now 200 hours and 2,000 miles.

"This offers farmers and ranchers more uptime, less time in their barns working on the vehicles and more time using them. It increases the use efficiency of the machine," Erspamer explains.

The front of the Northstar mounts a 4,500-pound winch with synthetic rope, auto stop and wireless remote. It can also be operated by way of a switch to the left of the steering wheel. You'll get an argument about which performs better, steel or synthetic rope. Polaris chose synthetic for one reason, among others: It won't sink into the mud.

The best part of the ride was the ride. It was fast and always felt controlled and safe. The XP 1000 Northstar hugged the trail superbly—up and down hills, around corners at speed. In true all-wheel drive (AWD), the Polaris XP 1000 Northstar took on steep hills in high or low gear. AWD engages when the rear wheel begins to slip. Riding on 29-inch 8-ply Pro Armor X Terrain tires, the Northstar editions have 14 inches of ground clearance.

It felt like the Northstar edition was planted to the trail—no tipping and no uncontrolled slides around corners.

"Polaris is a ride and handling company. That's what we've built our heritage on," Erspamer points out. "This model year '25 is no exception to that. The way we design our chassis that are super stiff, the way we design our suspension geometries and how we tune our suspension—these allow the vehicle to work hard and to play hard. The vehicle stays planted and stays flat in the corners, and that offers a safe, secure feel for the operator."

The Ranger Crew XP 1000 Waterfowl Edition also returns to the hunt for 2025 (999 cc, 82 hp, starts at $25,499). The Waterfowl Edition is designed for flooded and muddy terrain. It runs on 29-inch Pro Armor Mud XC tires and has arched A-Arms for traction, ground clearance and stability. The special-edition model also features a high-mount winch over the bed and high-mount intakes, and is available in Waterfowl Hunt Camo.

The all-new Ranger Crew XP 1000 NorthStar Texas Edition (999 cc, 82 hp, starts at $36,999) features a new beefy front steel bumper and upper bumper arched A-Arms, 14 inches of ground clearance on 29-inch Pro Armor X-Terrain Tires, factory-installed heating and air-conditioning, a 4,500-pound winch, RIDE COMMAND, Pro Shield Cab with full glass tip-out windshield and power front windows, Texas Edition badging in a Bronze Pearl Metallic coating. ///

Visit **www.polaris.com/en-us/off-road/ranger** for more information about the 2025 Ranger line.

Watch the Video

HTTPS://TINYURL.COM/48EM2MTN

DTN

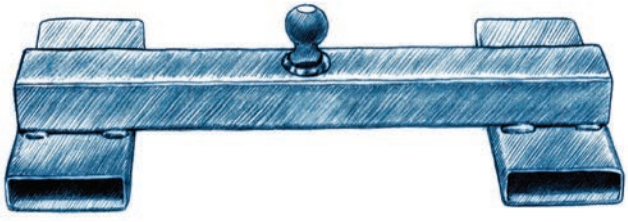
By **Dan Miller**, Illustrations By **Ray E. Watkins Jr.**

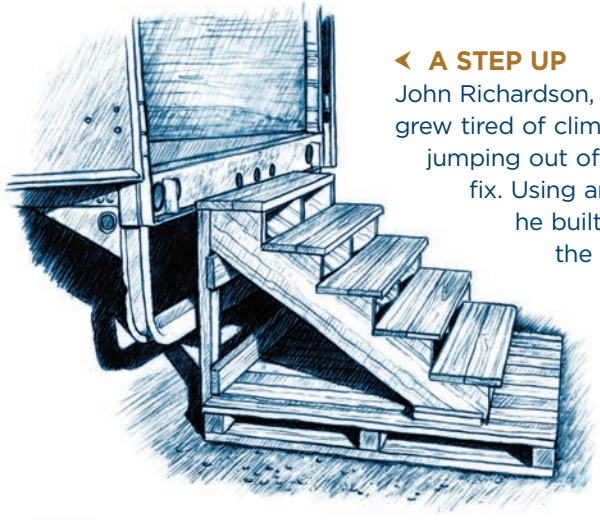
Handy Devices

Easy-to-build ideas make your work easier.

FORK AND TOW

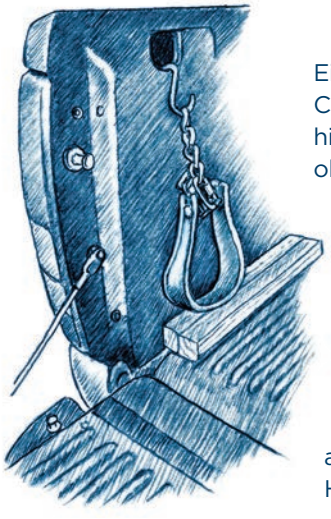
Adrian Glanzer, Carpenter, South Dakota, wants to move trailers and other equipment with ball hitches using a fork lift. He cut two pieces of square tubing to slide over the forks and connected the two with a third piece the width of the forks. Two holes (not shown) accept pins attaching the assembly to the forks when in use.





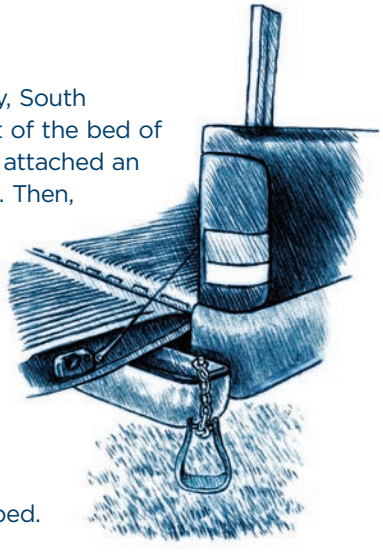
A STEP UP

John Richardson, Spring Hill, Tennessee, grew tired of climbing up into and jumping out of semitrailers. He had a fix. Using an old pallet as a base, he built a series of steps onto the top of the pallet. Now, it's easier for Richardson to load and unload the trailer. He moves the stair-pallet assembly around with forks on a tractor.



LIFT UP WITH A STIRRUP

Eighty-five-year-old Ronald Boozer, Prosperity, South Carolina, looked for a way to climb in and out of the bed of his Chevy pickup. Simple solution(s). First, he attached an old saddle stirrup to a 10-inch length of chain. Then, he attached an S-hook to the other end of the chain. He drilled a hole in the truck's bumper and set an eyebolt into the hole (and a nut to secure it). Finally, he slid the S-hook, with chain and stirrup connected, through the eyebolt to create the step up. Boozer also built a handle to steady his climb with a piece of lumber fitted into a stake pocket. He stores the stirrup step (left) in the truck bed.



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New Blood Flow Breakthrough Helps Men Enjoy Strong, Long-Lasting Intimacy – At Any Age

A new discovery that supports nitric oxide production and healthy blood flow gives men across the country new hope for a satisfying bedroom performance

After age 40, it's common knowledge that performance begins to decline in many men. However, a new potency formula is showing that any healthy man can now enjoy strong, long-lasting, and frequent performance at any age.

This doctor-designed protocol, created by leading anti-aging expert Dr. Al Sears, is celebrating its highly effective 5th generation formula, which is already helping men support a healthy performance and libido.

When Dr. Sears released the first pill — Primal Max Black — it quickly became a trusted men's performance helper, promoting bedroom fun across America.

It worked by supporting healthy testosterone levels. However, Dr. Sears knows from almost 30 years in private practice that testosterone isn't the only performance challenge men face. That's why his dual strategy includes attention to blood flow because no amount of testosterone will replace the need for healthy blood flow for successful intimacy.

And this second formula became Primal Max Red.

SUPPORTING THE MECHANICS IS AS IMPORTANT AS SUPPORTING THE HORMONES

While Primal Max Black helped maintain optimal testosterone, Primal Max Red tackles a lesser-known challenge.

Truth is, we ignore the importance of blood flow and circulation for supporting a man's sex life. Because without blood flow, nothing happens.

Luckily, a Nobel prize-winning scientist discovered a means to help support performance, strength, and confidence by supporting vital blood flow, which is essential for a satisfying performance.

Using this landmark Nobel Prize as its basis, Primal Max Red supports healthy blood flow by using a key ingredient to support nitric oxide production. Nitric oxide is the molecule that allows blood vessels to relax and expand, thereby increasing blood flow.

Al Sears MD, who has authored over 500 scientific papers and has appeared on more than 50 media outlets including ABC News, CNN, ESPN, and many more says, "Supporting optimal blood flow is an essential component of maintaining sexual health as men age. Then, once we optimized it and had a great deal of success, we set out to see if we could do even better."

Conventional nitric oxide supplements are limited to smaller doses of key ingredients because everything must fit into small capsules. But Dr. Sears followed the science and introduced a revolutionary new powder version of his Primal Max Red formula.

This new powder formulation enabled him to include bigger doses of the key nutrients, which matched the doses used in published clinical studies. Not only is the formula more effective because it uses proven doses, it also means you get a delicious drink instead of more and more pills.

HEALTHY BLOOD FLOW DELIVERS SATISFYING RESULTS

Primal Max Red is the best way to maintain an active life.

IMMEDIATE GAME CHANGER FOR AMERICAN MEN: Doctors are now recommending Primal Max Red for its ability to support the vital but overlooked need for healthy blood flow during intimacy.

It works by supporting blood flow and the production of nitric oxide.

This critical support is the reason men across the country are enjoying a full and satisfying performance at any age. Because testosterone is not the only factor men need to consider.

Primal Max Red effectively promotes healthy blood flow that men can use to support intimacy in the bedroom. The unique and powerful blend of ingredients in Primal Max Red supports the kind of sexual health and performance men are looking for.

"There was a time when supporting healthy blood flow for men was impossible," Dr. Sears said. "But science and technology have come a long way in recent years. And now, with the creation of nitric oxide-supporting Primal Max Red, men can feel more confident and more in control while they enjoy intimacy at any age."

Now for men across America, it's much easier to support peak performance as they get older.

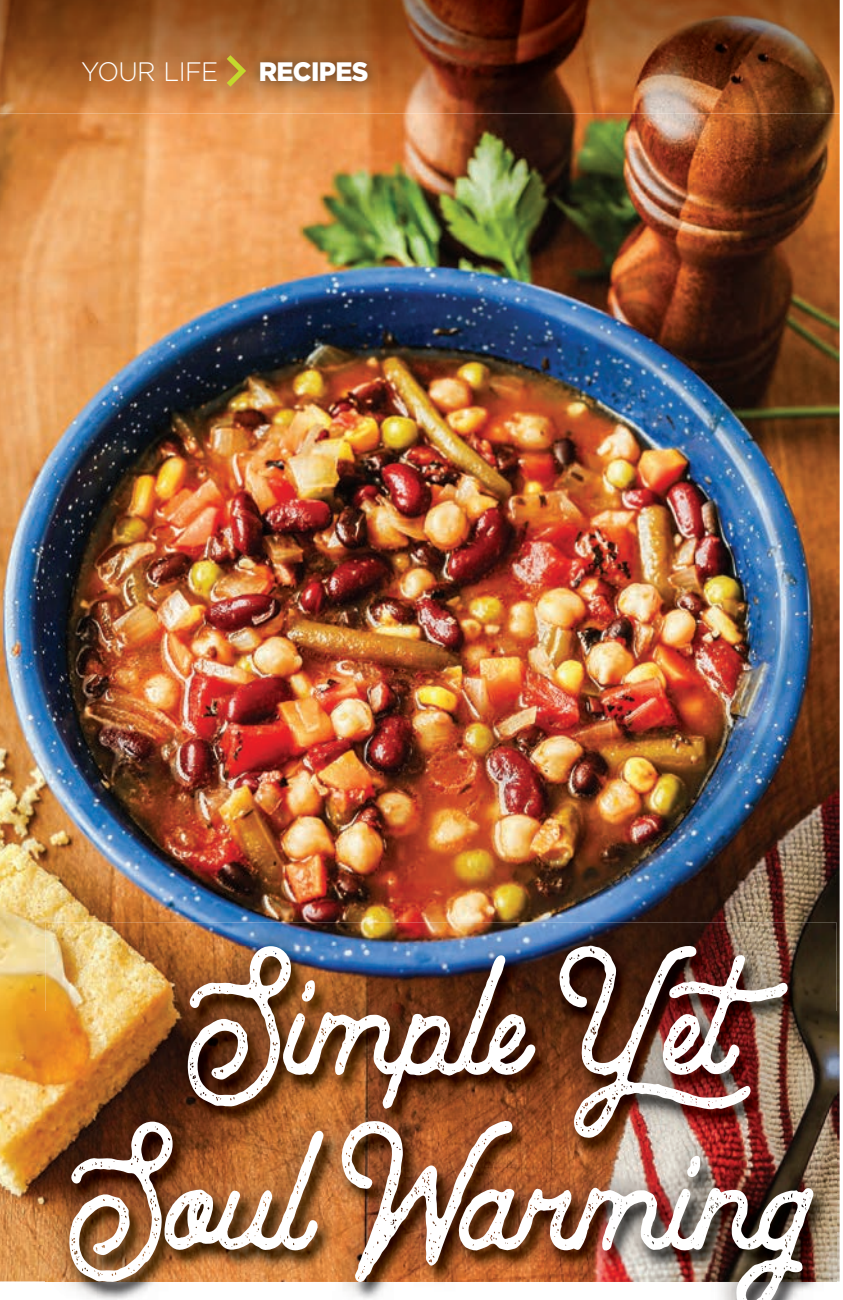
HOW TO GET PRIMAL MAX RED ALONG WITH COMPLEMENTARY BOTTLES OF PRIMAL MAX BLACK

To secure the new Primal Max Red formula, readers should contact the Primal Max Red Health Hotline at **1-800-910-6563** and use promo code **PFPMAX225** within 48 hours. And to cut down on the cost for customers, it can only be purchased directly from the company.

READERS ALSO GET AN EXTRA BONUS SUPPLY OF PRIMAL MAX BLACK

Every order of Primal Max Red gets a matching supply of Dr. Sears' testosterone formula Primal Max Black for no additional charge.

All orders are backed by a 100% money-back guarantee. If any user is not satisfied, just send back the bottle(s) or any unused product within 90 days from the purchase date, and you'll get all your money back.



Simple Yet Soul Warming

THREE-BEAN & VEGETABLE SOUP

Cozy up with this savory soup and enjoy a healthy, hearty meal with your loved ones.

TOTAL TIME: 30 MINUTES
SERVES: 6–8

- 1 tablespoon extra-virgin olive oil
- 1 small white onion, diced
- 2 tablespoons tomato paste
- 3 garlic cloves, minced
- 1 (28-ounce) can fire-roasted diced tomatoes
- 4 cups vegetable broth
- 2 cups water
- 1 teaspoon dried thyme
- 1 teaspoon dried oregano
- 16 ounces frozen vegetable mix of choice
- 1 (15.5-ounce) can chickpeas, rinsed and drained
- 1 (15.5-ounce) can red kidney beans, rinsed and drained
- 1 (15.5-ounce) can black beans, rinsed and drained
- Salt and pepper to taste

1. Heat olive oil in a large soup pot over medium heat; add onion, tomato paste and garlic. Cook until softened and fragrant (about 5 minutes).
2. Add diced tomatoes, vegetable broth, water, thyme and oregano to pot; bring to a simmer. Allow to cook for 10 minutes.
3. Add frozen vegetables, chickpeas and beans to pot; cook 10 minutes or until vegetables are cooked through.
4. Season soup with salt and pepper, to taste. Store leftovers in an airtight container for up to five days.

ONE-BOWL CORN BREAD WITH HONEY BUTTER

Moist and sweet, this corn bread pairs well with soup on a cold winter day.

TOTAL TIME: 1 HOUR
SERVES: 8–10

- Cooking spray
- 1 cup all-purpose flour
- 1 cup yellow cornmeal
- 2 teaspoons baking powder
- ½ teaspoon salt
- ¼ teaspoon baking soda
- 1 cup whole milk
- 1 large egg
- ¼ cup unsalted butter, melted
- ¼ cup sugar
- 2 tablespoons honey

Honey Butter

- ¼ cup unsalted butter, softened
- 2 tablespoons honey
- ½ teaspoon salt

1. Preheat oven to 375°F. Grease a 9- x 9-inch baking dish with cooking spray (or butter if you prefer); dust with flour.
2. In a large bowl, combine flour, cornmeal, baking powder, salt and baking soda.
3. Make a well within the dry ingredients. Add milk, egg, melted butter, sugar and honey to well; whisk until just combined.
4. Pour batter into prepared pan; bake 25 to 30 minutes or until a toothpick inserted into the center comes out clean.
5. To make the honey butter, combine softened butter, honey and salt in a small bowl; mix well.
6. Allow corn bread to cool 15 minutes before slicing. Serve with honey butter, if desired. ///

Recipes and Photos By
Rachel Johnson
On Instagram
@rachelltherecipe

For Materials and other Information, contact Tony Green, 205-414-4733 or tony.green@dtn.com

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Adversity

GETTY IMAGES

You may encounter many defeats, but you must not be defeated. In fact, it may be necessary to encounter the defeats, so you can know who you are, what you can rise from, how you can still come out of it.
MAYA ANGELOU

The gem cannot be polished without friction, nor man perfected without trials.
CHINESE PROVERB

We are troubled on every side, yet not distressed; we are perplexed, but not in despair; Persecuted, but not forsaken; cast down, but not destroyed.
2 CORINTHIANS 4:8,9 (KJV)

Only those who dare to fail greatly can ever achieve greatly.
ROBERT F. KENNEDY

Adversity, and perseverance and all these things can shape you. They can give you a value and a self-esteem that is priceless.
SCOTT HAMILTON

When everything seems to be going against you, remember that the airplane takes off against the wind, not with it.
HENRY FORD

Difficulties strengthen the mind, as labor does the body.
SENECA

Success is not final, failure is not fatal: It is the courage to continue that counts.
WINSTON CHURCHILL

Challenges are gifts that force us to search for a new center of gravity. Don't fight them. Just find a new way to stand.
OPRAH WINFREY

You can't be brave if you've only had wonderful things happen to you.
MARY TYLER MOORE

Obstacles don't have to stop you. If you run into a wall, don't turn around and give up. Figure out how to climb it, go through it, or work around it.
MICHAEL JORDAN

Let me embrace thee, sour adversity, for wise men say it is the wisest course.
WILLIAM SHAKESPEARE

You should never view your challenges as a disadvantage. Instead, it's important for you to understand that your experience facing and overcoming adversity is actually one of your biggest advantages.
MICHELLE OBAMA

Strength does not come from winning. Your struggles develop your strengths. When you go through hardships and decide not to surrender, that is strength.
ARNOLD SCHWARZENEGGER

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