

Growing Together

2Q | 2020

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20

YEARS OF
INNOVATION



On Closer Inspection

Data-Based Agronomic Choices Improve Economic Outcomes

TOP 10 TIPS FOR MANAGING CONTINUOUS CORN

CUTTING-EDGE TOOLS ARE KEY TO COMBATING COSTLY INSECTS

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thrive 

Even though you love your print edition of *Thrive*, please check out the magazine's website. You'll find more content and links to important resources to help you succeed in today's marketplace. The online version also makes it easy to share specific articles with others.

Scan this QR code to take the fast track to the *Thrive* website, or go to www.syngentathrive.com.



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 Artwork: Ryan Etter

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 Tim Watts of the Agricultural Retailers Association listens intently to a presentation during the Leadership At Its Best program.
 Photo: Alex Maness

We welcome your story suggestions and comments about *Thrive*.

Please send them to thrive@syngenta.com. For more information, visit the Syngenta U.S. website at www.syngenta-us.com, or call the Syngenta Customer Center at 1-866-SYNGENT(A) (796-4368).

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Thrive is produced quarterly for a nationwide agricultural audience. Its purposes are to update readers on Syngenta products, research, services and solutions, and to provide them with the information they need to succeed in today's complex marketplace.



Innovation From the Ground Up

The old man sitting on the low wall outside the University of Georgia Conference Center in Tifton spotted the young ag editor leaving the meeting.

“So, now you’re going home to write up something telling me how to farm,” he said. It didn’t sound like a question. Still, that young editor chose to treat it like one.

“No, sir,” my younger self told that farmer. “I’m going home to write up what these folks had to say today, so if it’s of interest to you and you think it might be a fit, you can try it out on your farm.”

The old man decided he might enjoy reading my magazine.

A quarter of a century later, that conversation reflects our highest goals for you — the readers of *Thrive*:

- To deliver nuggets of information that help increase crop yield and quality on your farms and your customers’ farms, while maximizing profit potential for all
- To deliver information in an entertaining way, so you look forward to reading this magazine each quarter

While the general public can recall the days of the rotary telephone, paper maps and print film, the speed of technology and innovation in agriculture has outpaced that timeline. Many in ag who are using real-time kinematic GPS to plant and harvest — and controlling irrigation systems with their cellphones in between the two — also can recall the days of plowing with a mule. Some even have an on-farm mule cemetery.

Still, we continue to press forward. Innovation is foundational to the ag industry and a hallmark at Syngenta.

The innovation thread weaves itself through our industry — and through the pages of *Thrive*. In this issue:

- We look back at the groundbreaking work Mary-Dell Chilton drove to increase food security. An exhibit at the Smithsonian recognizes her for opening doors for women in ag business.
- We look to this season with tips for profitably growing continuous corn and applying innovative products to fight off insects.
- Finally, we look at emerging technologies to help wring respectable yields from poor ground and use water-sensing technology to increase yield and use less irrigation.

We can write about innovation in agriculture every day and still have a list of topics to explore. Change — largely through innovation — is life as farmers know it.

As the world struggles with climate change, finite natural resources and an exploding population, the ag industry quietly progresses from one technological advancement to another. Given the opportunity, ag — from field to lab — will find the answers our global community needs. 🌱



PAM CARAWAY
Communications Lead
Syngenta Crop Protection, LLC



PAM CARAWAY

“The ag industry quietly progresses from one technological advancement to another. Given the opportunity, ag — from field to lab — will find the answers our global community needs.”



What's in Store

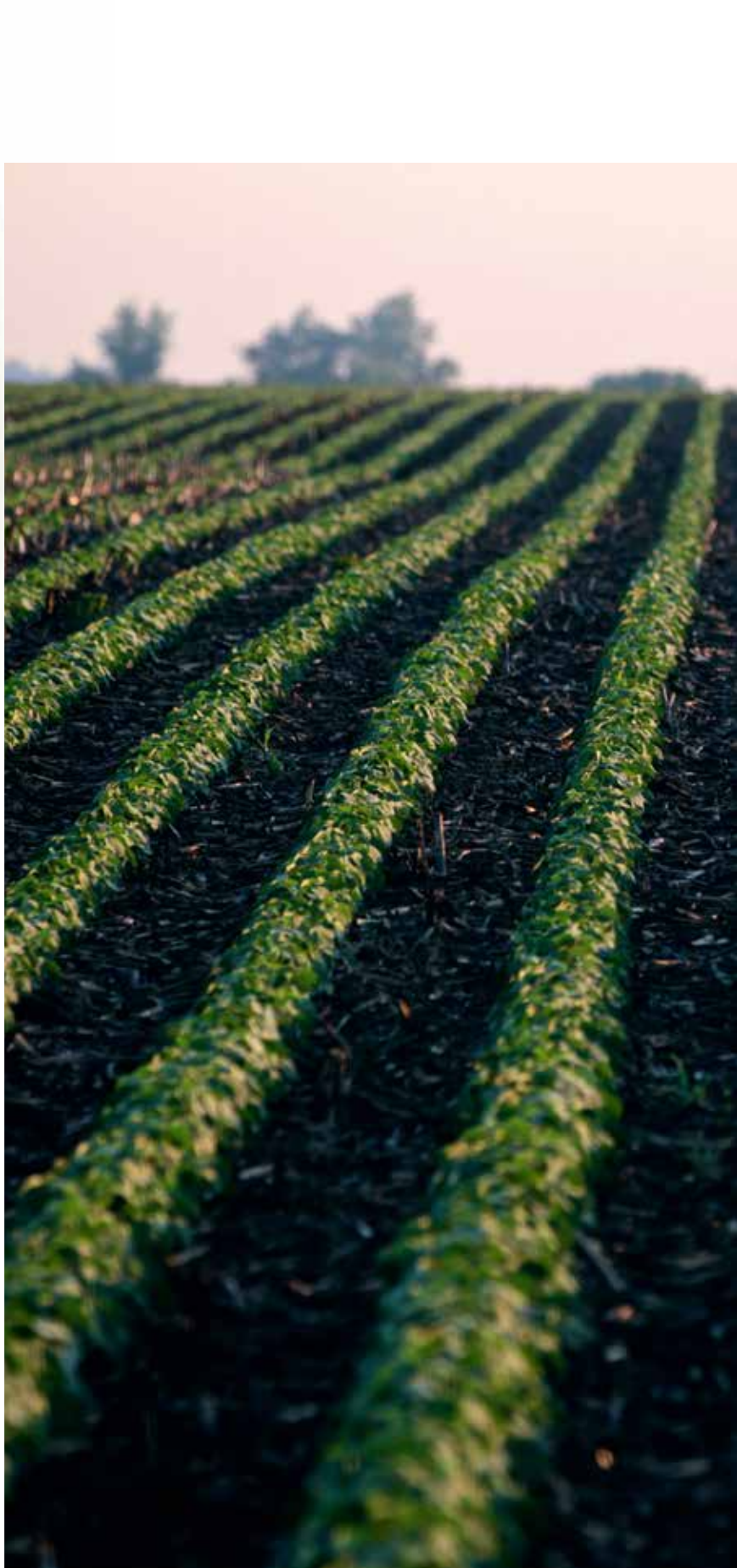
Catch up on new technologies, product updates and news about this year's Grow More Experience Sites and #RootedinAg Contest.

NEW TECHNOLOGIES AND PRODUCT UPDATES

Find 5 to 15 More Bushels an Acre With Acuron Corn Herbicide

When selecting a herbicide program, choosing a quality herbicide with residual control and multiple effective sites of action will save growers weed-management headaches in the long run.

Acuron® corn herbicide controls tough, yield-robbing weeds other products may miss. Less weed competition translates into more nutrients, sunlight and water for the growing corn crop, which can lead to more bushels and extra revenue potential. Replicated Syngenta and university trials comparing Acuron with Corvus®, Resicore®, SureStart® II and Verdict® herbicides applied preemergence at full label rates show a yield advantage of 5–15 bushels an acre.*





Effective herbicide resistance management gets this Illinois field of soybeans off to a good weed-free start.

Growers can calculate the increased revenue potential Acuron provides at www.syngenta-us.com/p/findmorebushels. They can also contact their local Syngenta representative or retailer for more information.



*Acuron yield advantage range based on 2016 Syngenta and university trials comparing Acuron with Corvus, Resicore, SureStart II and Verdict applied preemergence at full label rates.

How Far Has Herbicide Resistance Spread?

Syngenta has a new online tool for growers that allows them to track the shifting path of herbicide resistance over the last five decades: the Interactive Resistance Map. Visitors to www.syngenta-us.com/p/resistancemap can use a slider to see how resistance has become the challenge that it is today.

The interactive map is another initiative in the fight against resistant weeds. For sound resistance management, growers must deploy a diverse herbicide program. For tips on planning a resistance management program, visit www.resistancefighter.com.



These maps show the progression of weed resistance across the U.S. since 1972.

Growers Benefit From the Convenience of Orondis Gold Premix

Orondis® Gold fungicide, now available in a premix formulation, adds convenience to the strength growers count on to conquer disease. Containing oxathiapiprolin and mefenoxam, this combination of proven, trusted active ingredients in Orondis Gold delivers preventive, residual and systemic activity against a wide range of oomycete diseases in potatoes, tobacco, and cucurbit and fruiting vegetables. With two modes of action, Orondis Gold offers disease control growers can count on — even under heavy disease pressure. Go to www.syngenta-us.com/fungicides/orondis-gold for more information.



NEWS AND EVENTS

Local Learning at Grow More Experience Sites

Since 2013, the Syngenta Grow More™ Experience sites have showcased crop protection and seed technologies, offering hands-on learning and relationship-building opportunities. Tailored to local growing environments, these sites engage attendees and showcase agronomic practices and technologies that can help improve crop productivity and potential return on investment.

This approach continues in 2020 at sites across the country. At each site, a team of agronomic experts creates immersive learning experiences to help provide local management advice and recommendations. Visitors get the chance to step into the field to touch, see, dig and gain a deeper understanding of agronomics and Syngenta solutions that can help maximize yield potential. For more information about the sites and to sign up for twice-monthly agronomic email updates pertinent to your area, visit www.knowmoregrowmore.com.

These potatoes, harvested in Ephrata, Washington, at a 2019 Grow More Experience site, benefited from robust disease management.



NEWS AND EVENTS

Thrive #RootedinAg Contest Now Accepting Entries



Who most inspired your agricultural roots? By sharing your story, you can honor that person and win prizes for you and your community. Along with being featured in *Thrive*, three finalists will each receive a mini touch-screen tablet. And if you're our grand prizewinner, we'll send you a \$500 gift card, plus set up a professional photo shoot with you and your ag mentor. We'll also give you a chance to pay it forward within your community by donating \$1,000 to a local charity or civic organization of your choice.



Above photo: Tammy Wiedenbeck, the 2019 #RootedinAg Contest winner, participated in a photo shoot with her mentor and brother, Doug, on their farm in Lancaster, Wisconsin. The photo shoot was part of her winnings.

HERE'S HOW TO ENTER:

Go to www.syngentathrive/contest.com to review eligibility and fill out the brief online entry form, which asks you to describe the person who inspired you to be #RootedinAg in one of two ways.



Write a paragraph or two (about 200 words) and submit a photograph that visually supports your written entry, or



Create a short video (1 to 3 minutes)
(Note: Simple instructions on how to upload your photograph or video are on the entry form.)

The deadline for entering is **June 30, 2020**. Shortly after this date, a panel of judges will choose three finalists. Syngenta will then post all finalists' entries on the *Thrive* website and ask visitors to help choose the grand prizewinner by voting for their favorite. These votes, along with the judges' scores, will determine the winner. Online voting ends Sept. 15, 2020, with Syngenta announcing the grand prizewinner in October.

Do More With Less Using Emerging Technologies

New tools help growers increase yields in difficult environments while preserving natural resources.

Growers who work with Phytech and Sound Agriculture are increasing yields by double digits while preserving valuable natural resources. Most notably, technologies coming from these companies are helping growers make yield advances possible on marginal land.

Mark Sherfy, the water resource manager for D & J Farm Management in Bakersfield, California, is one of those growers. Sherfy rolled out irrigation planning technology from Phytech to all of the farm's almond trees. Last year, he says, the farm saw a 30% increase in yields using less water.

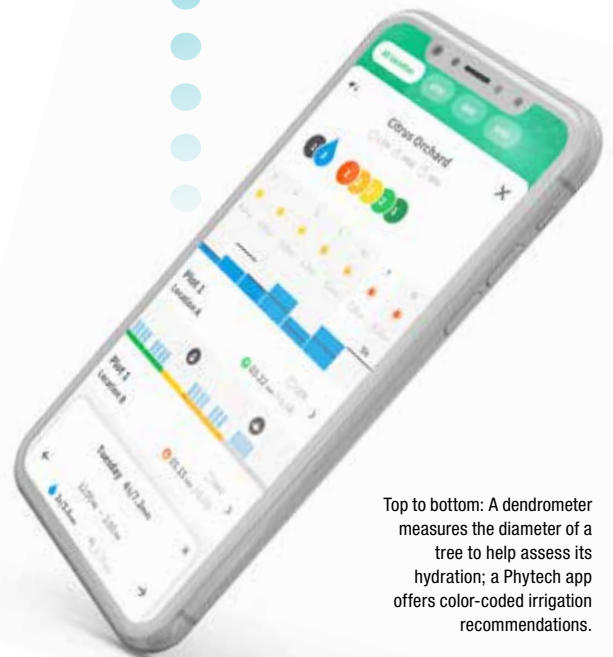
"I began working here one year after the Sustainable Groundwater Management Act (SGMA) changed the landscape of farming in California," Sherfy remembers. Around Bakersfield, growers were facing a hard decision: find a new line of business, or find a way to grow their crops with less water.

But knowing when a plant needs water and how much can be a challenge. "Plants don't speak English," says Sarig Duek, CEO of the Israel-based Phytech company. "So the only way growers know if their plants need water is to look at them. The problem is, by the time that stress is evident, you're usually five to 10 days too late."

Phytech offers a high-tech solution to that problem. It uses a dendrometer to measure the contraction and expansion of the plant's trunk, and an app that collects that data and layers it with information about the climate to offer growers color-coded irrigation recommendations — ranging from green, meaning the plant is experiencing no stress, to red, indicating that the plant is experiencing extreme stress and immediate action is required.

In addition to increasing yields, Sherfy credits Phytech for revolutionizing the way his farm irrigates. "Back in the day, everyone would do furrow irrigation — flooding a crop row about once a week," Sherfy says. "The problem is, you waste water because you get standing water that the trees can't use, and the water evaporates."

Instead of furrow irrigation, Phytech recommended daily watering — "and it told us exactly how much our plants needed,"



Top to bottom: A dendrometer measures the diameter of a tree to help assess its hydration; a Phytech app offers color-coded irrigation recommendations.

Sherfy says. This year, he's planning a trial run with the business's table grapes — "not to just save water, but to fully utilize 100% of the water I put out," Sherfy says.

Source: A Groundbreaking Solution

Like Phytech, Sound Agriculture works to help growers maximize their yields in yield-limiting environments. With its new Source™ product, launched last December for use during the 2020 growing season, Sound Agriculture is helping growers increase yields by tapping into the nutrients already present in their soil.

Eric Davidson, Ph.D., CEO of Sound Agriculture, is confident

that Sound's approach can have a dramatic impact on yield potential. "Source mimics plant-to-microbe signals, unlocking the nitrogen and phosphorus that already exist in the field," he says. "On average, we see around a 9-bushel-per-acre yield increase for corn, with some soil types seeing 20- to 30-bushel increases over untreated areas."

Davidson sees a strong connection between yield and soil nutrients. "Growers understand that the soil has the ability to provide for the plant," he says. "Yet every season, extra bushels are left in the field because current products aren't able to unlock the soil's full potential."

Steve Pitstick, a grower who produces corn and soybeans near Maple Park, Illinois, agrees. "I think that looking at the soil and trying to find ways to enhance all the resources that are there is the next frontier."

Source is a foliar spray and is easy to use thanks to its compatibility with other products. Source can be added to a tank mix so it doesn't require any additional equipment or extra trips into the field.

In 2019, Pitstick used Source, and the results were immediate. "In my first year of trials, I experienced an average 17.1-bushel-per-acre increase in yield — across multiple soil types," he says. "Based on the results of that small-scale testing, I'm planning to purchase Source for use next year and increase my Source testing in different fields."

A Venture in Sustainability

Both Phytech and Sound Agriculture are companies in the Syngenta Ventures portfolio. With a mission to grow companies that share the Syngenta vision of producing more with less, Syngenta Ventures was one of the world's first venture capital teams dedicated to agriculture.

By investing in innovation and supporting solutions that help growers farm sustainably, Syngenta Ventures, now more than a decade old, ties into the Syngenta Good Growth Plan — a plan that lays out the commitments the company is making to secure the future of agriculture and our planet's ecosystems.

According to Phytech's Duek, a commitment to sustainability is an important step forward. "The growers we work with are using Phytech to optimize yield and quality — and they're doing all that constantly, all while continuing to save water," he says. "When we meet with growers in the morning, they smell the ground, and you can see them smiling. Their success stories have built our business and make it all worthwhile." 🌱

STORY BY ROBIN SUTTON ANDERS

"I think that looking at the soil and trying to find ways to enhance all the resources that are there is the next frontier."

—STEVE PITSTICK
Illinois Grower

Technology that moves with you

A comprehensive resource for the ever-changing needs of growers everywhere



Ready to take your operation to the next level?
www.AgriEdge.com



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Prescription for Premium Peanut Yields

The Peanut Doctor, Wilson Faircloth, Ph.D., is open for consultation on peanut disease.

Q. How much impact can disease have on peanut yield and quality?

A. Wilson Faircloth, Ph.D., agronomic service representative and the Peanut Doctor, Syngenta: Diseases can significantly decrease peanut yield. If infection occurs early, total plant development can be affected, resulting in near-complete loss. Late infection of foliar diseases like leaf spot can cause defoliation and problems with digging and inverting. Soilborne diseases like white mold and *Rhizoctonia* can compromise the vines to such an extent that the pods actually fall off.

Quality is less a function of disease than maturity. Disease can cause a farmer to rush harvest, therefore increasing the chance of an immature crop; so, yes, diseases indirectly influence quality.

Q. What is the most effective approach for writing a disease management prescription in peanuts — a peanut Rx?

A. Be proactive. No fungicide is designed to play catch-up. The best programs begin early and have overlapping applications of different modes of action. For peanuts, the most critical period of disease management is 60 to 100 days after planting. During this time, the plant is nearing its full vegetative growth, beginning to set pods or fruit, and filling those pods. Any stress on the plant during this time period can affect final yield, so it is critical to protect foliage and vines. If you don't protect the plant during this period, it is nearly impossible to fight disease in the 100-plus-day time frame. Also, as the canopy closes, the microclimate is much more conducive to disease development with high humidity and high temperatures.

In addition to choosing an effective fungicide program, growers should implement cultural practices known to reduce disease development. These include selecting varieties with disease tolerance, removing plant debris from the previous season in which inoculum may have overwintered, and properly timing and placing irrigation.



Q. Does a premium program to control disease pay off in peanut production?

A. Growers can sometimes use low-cost disease programs and make good yields. However, there is no margin for error, and conditions must be perfect. Premium programs that use multiple modes of action and the newest products give growers many more options when conditions change — as they so often do. For example, Miravis® and Elatus® fungicides distinguish themselves because they consistently deliver longer residual control compared with any other peanut fungicide. This allows a grower flexibility in application and also adaptability when adverse weather prevents fungicide application. Additionally, many new peanut varieties with desirable characteristics, such as nematode resistance or preferred oil chemistry, simply cannot be grown profitably without a premium, highly planned fungicide strategy.

Q. How does the level of risk impact the disease management program for a field?

A. Common to all risk levels is the backbone. In other words, the backbone is that 60- to 100-day time frame that must be protected across all risk levels. Risk programs can impact what occurs prior to 60 and after 100 days to account for things like good or poor rotation, varieties with resistance or lack thereof, or cultural practices known to foster or lessen disease. Miravis and Elatus provide that backbone, even in low-risk management plans.

Q. Are tools with long residual available to manage disease in fields with high pressure?

A. Miravis and Elatus have much longer residual activity than all other peanut products on the market. When launched, both



MEET THE PEANUT DOCTOR

Wilson Faircloth, Ph.D., is a Syngenta agronomic service representative and peanut expert who's spent years implementing peanut fungicide programs, testing new products and developing best practices for peanut production. His down-to-earth approachability and specialized knowledge are now available to more peanut growers than ever before through the Peanut Doctor program.

Elatus (pictured at left) and Miravis fungicides control destructive diseases in peanuts with residual activity that's longer than any other peanut product on the market.



products met skepticism about their ability to last 21 to 28 days or more for disease control. Keep in mind that a 14-day spray schedule for peanut fungicide management was the standard over the last 40 years. That is changing as peanut producers and their retail and consultant support teams see the performance Miravis and Elatus bring to their fields.

Both Miravis and Elatus deliver step-changes in peanut disease management. Extensive testing and field research leave little doubt that these two fungicides can last a long time to prevent infection in fields with all types of disease pressure.

Elatus offers growers application flexibility from 21 days after planting to traditional soilborne disease application timing. It provides excellent control of several foliar and soilborne diseases, including Southern stem rot or white mold, *Rhizoctonia*, early leaf spot, late leaf spot, and rust.

Miravis complements the proven performance of Elatus by delivering groundbreaking potency against early and late leaf spot. Both fungicides help to significantly increase yield and maximize earnings potential.

Q. Where can growers go for more information?

A. Growers are welcome to contact their local retailer or Syngenta representative for more information on managing peanut diseases. They also can go to www.syngentaus.com/elatus or www.syngentaus.com/miravis for more specific information on our peanut fungicide portfolio.

My new role as the Peanut Doctor is a testament to our commitment to the peanut-growing community. On behalf of everyone at Syngenta, we look forward to helping growers overcome their challenges and celebrate their successes as the 2020 season gets underway. 🌱 INTERVIEW BY SUSAN FISHER

Two Decades of Innovation

In just 20 years, Syngenta has created one of the deepest portfolios of crop protection and seed products in the industry. Its Crop Protection lineup includes 37 seed treatments, 34 herbicides, 44 fungicides and 21 insecticides, while Syngenta Seeds has developed unique, industry-leading traits and trait stacks to help growers control above- and below-ground pests and produce more from less. The timeline below highlights with a ▶ innovative technologies that Syngenta has developed. It also marks other historic Syngenta milestones that have enhanced the ag community over the years.



- 2000**
Novartis and AstraZeneca merge their agribusinesses to form Syngenta, the first global group focusing exclusively on agribusiness.
▶ NK Seeds becomes part of Syngenta.
- 2001**
▶ Callisto®, a game-changing corn herbicide technology, receives EPA registration.
▶ AgriEdge®, a whole-farm management program, launches.
- 2002**
Syngenta takes the national lead on emerging weed resistance challenges for U.S. farmers and launches the Resistance Fighter® program.
- 2003**
▶ Cruiser Extreme™ 250 seed treatment enters the market.
▶ Syngenta introduces the Full Count® Companion Transplant watermelon program.

- 2004**
▶ Syngenta acquires Golden Harvest Seeds, Garst Seed Company and AgriPro COKER.
▶ CruiserMaxx® Beans seed treatment, a combination of separately registered products, is introduced.
- 2005**
▶ Agrisure® traits launch, and FarMore® Technology seed treatment is introduced.
- 2006**
▶ Avicta® 500FS seed treatment nematocide and Agrisure RW insecticide trait launch.
- 2007**
Syngenta opens The Seedcare Institute™ in Stein, Switzerland.
- 2008**
▶ Agrisure 3000GT triple trait stack launches.
- 2009**
▶ Avicta Complete Corn nematocide/insecticide/fungicide seed treatment launches.

- 2010**
▶ USDA approves Agrisure Viptera® trait to help manage insect pest resistance.
▶ Agrisure Artesian®, a drought-tolerant trait, launches.
- 2011**
▶ Enogen® corn enzyme technology enters the market.
- 2012**
▶ Vibrance® seed treatment fungicide is introduced.



'13

'16

'18

'19

2013

► The Advanced Crop Lab, a first-of-its-kind greenhouse and research facility, opens at the Syngenta RTP Innovation Center in North Carolina. The Good Growth Plan sustainability program launches globally.

2014

► U.S. growers begin planting hybrids containing the Agrisure Duracade® trait for corn rootworm control.

2015

► Acuron® corn herbicide receives EPA registration.

2016

► Trivapro®, Elatus®, Aprovia®, Aprovia® Top and Orondis® fungicides are introduced. The Syngenta Seedcare Institute opens its expanded U.S. facility in Stanton, Minnesota. Syngenta acquires Ag Connections, accelerating its growth as a digital solutions provider. Women in Agribusiness recognizes Syngenta as company of the year for workplace diversity.

2017

► Talinor® herbicide, Minecto® Pro insecticide and Force® Evo insecticide launch. ► Enogen Feed corn launches for improved efficiency in beef and dairy cows.

2018

► Miravis® fungicide and Force 6.5G insecticide are available. ► Syngenta acquires FarmShots™, which uses satellite technology to assess crop health in real time.

► Syngenta receives nonexclusive license to use CRISPR-Cas9 genome editing technology.

2019

► Saltro® fungicide seed treatment and Tavium® Plus VaporGrip® Technology launch. ► E-Luminate® and the Golden Harvest® digital ag platform launch. ► NK® launches Seed Analyzer, using decades of data to provide unbiased, field-specific recommendations. ► Agrisure Duracade trait for corn rootworm control is approved for EU import. The Trait Conversion Accelerator, a first-of-its-kind greenhouse facility designed to speed up corn breeding and trait introgression, opens in Nampa, Idaho.

2020

Syngenta continues its commitment to developing a product portfolio focused on grower needs and delivering an innovative pipeline to help them prosper.



FILTER CROP OPTIONS

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THE Economics OF Agronomics

In times when margins are tight, the economic well-being of most growers and their families depends on making strategic agronomic decisions.

By Shane Norris | Photography by Jonathan Allain

Grower Franz Rowland uses AgriEdge data to help him make the right agronomic decisions for his farming operations in Boston, Georgia.

When the going gets tough, the tough get growing. Perhaps that should be the mantra of 21st-century farmers like Franz Rowland. After more than 40 years on his south Georgia farm, he knows a thing or two about resilience. But that kind of longevity doesn't come without challenges. The past three years have been particularly trying.

"My operation was 100% cotton when cotton prices were higher," Rowland says. Then a streak of misfortunes beyond his control changed all that.

"Hurricane Irma came through here in 2017, and we made about 300 pounds less cotton than we would normally make. Then, the next year, Hurricane Michael hit," he says. "On top of bad weather, the tariff war heated up last year. I can't remember a time when it's been as difficult to make a dollar on this farm as it's been during the last three years."

Despite these challenges, Rowland perseveres. A self-described "fanatic" about record keeping, he uses data to help him make the right agronomic moves — a task made easier since he added AgriEdge® to his farm's toolkit. The whole-farm management program from Syngenta comes with record-keeping software that Rowland finds indispensable for gauging the overall success of his farm and the value he's receiving from individual agronomic practices and crop inputs.

After using AgriEdge to run the numbers from last season, he has decided to change his crop makeup for the first time in a decade, adding peanuts and wheat to increase his profit margins. It's a bold but necessary step to keep his operation viable.

"The numbers showed that the risk of not making this move was far greater than keeping everything the same," Rowland says. "That's the beauty of making decisions grounded in agronomic facts. I can sleep better at night knowing that the direction my farm takes is not based on a whim, but on a well-laid plan."

Building a Plan

According to experts, building a plan from a foundation of sound agronomics — as Rowland has done — is key, especially when margins are tight and every seed and crop input selection needs to help bring a return.

"If growers are putting anything on their crop — whether it's a new seed treatment, a pesticide or a different fertilizer regimen — they should ask themselves, 'Is there going to be a positive gain?'" says Danny Morris, area farm management specialist with University of Tennessee Extension.

He recounts advising a local farmer earlier this year on the economic implications of allocating extra fungicide to a field that scouting reports showed was particularly



Based on data compiled in AgriEdge, Grower Franz Rowland (left) made the decision to plant a different crop mix for the 2020 growing season on his farm in Boston, Georgia. Rowland also depends on his AgriEdge Specialist Haley Glaab (right) for advice.

vulnerable to disease. “So, it’s not just a blanket treatment used under the assumption that the farmer needs fungicide on every acre,” Morris says. “It’s targeted applications used in fields that really need treatment.”

With costs rising across the board, from inputs to land rent, Morris says it’s even more important to make decisions you can justify. For example, when Rowland works with his AgriEdge specialist and Syngenta sales rep to build out his crop plan, he’s careful to look for solutions that don’t jeopardize results.

“Given today’s economy, we’re all trying to figure out the best way to go that saves money without compromising yield,” Rowland says. “At 70-cent cotton, you’ve got to watch every penny because it all adds up.”

Tapping Into Technology

As an AgriEdge grower, Rowland can monitor his operation and track profitability on a field-by-field basis. That level of accuracy gives him the ability to create integrated crop plans by the acre.

“The field-by-field monitoring we can offer helps a grower identify individual areas where potential profit margins can be increased,” explains Shane Taylor, marketing manager for Digital Ag Solutions at Syngenta. “It also allows a grower to track inputs, map fields, manage inventories and securely store data, all in one place.”

AgriEdge growers can also benefit from FarmShots™, a technology that analyzes satellite, aircraft and drone imagery of farms to map out potential signs of disease, pests and poor plant nutrition down to the acre.

“FarmShots reduces the area that needs to be physically covered through scouting by as much as 30%,” Taylor says. “It comes with a responsive design that is simple and optimized for use on all tablets, laptops and phones. That means growers can access the information anywhere, whether they’re at home or on the go.”

The Power of Human Interaction

While innovative technology is important, one of the best tools for growers battling tight margins is a trusted adviser who knows their farms and understands their unique challenges. Morris says there are several sources growers can turn to for that knowledge. “Industry representatives, county extension agents and crop consultants are probably going to be your three primary sources for one-on-one agronomic advice,” he says.

That’s something Lynn Sandlin, business intelligence manager at Syngenta, works hard to instill in Syngenta reps across the country. Sandlin studies all of the factors that go into profit and overhead costs for growers and communicates those factors to the employees in the field.

“I think one of the most important things for farmers in

Make Weed Resistance Management a Top Priority

At times when breaking even — much less making a profit — at the end of the season is a formidable challenge for many growers, it’s easy to understand how managing weed resistance may not be top of mind. But for grower Mark Forsyth of Charles City, Iowa, resistance is a problem he can’t ignore. “We’ve been dealing with resistant weeds for a good five years,” he says. “It’s become noticeably tougher and threatens to reduce our yields every year.”

Pete Eure, herbicide technical lead at Syngenta, says effective weed resistance management can save growers like Forsyth time, money and frustration in the long run. “Allowing weed resistance to go unchecked can set the stage for significant yield and profit losses sustained over multiple seasons,” he says. “It also can remove valuable herbicide solutions from growers’ toolboxes.”

Eure offers these tips to help growers manage resistance and retain the tools they have to effectively control weeds:

- Start clean, using tillage or an effective burndown plus a preemergence residual herbicide application.
- Always use a two-pass, preemergence and post-emergence system with herbicides at full labeled rates.
- Use multiple effective sites of action with overlapping residuals.
- Do not allow weeds to go to seed and add to the seed bank.
- Use good agronomic practices — narrow rows, increased plant populations and other practices that promote crop growth and competitive ability.

Forsyth agrees with Eure’s recommendations, especially when it comes to using herbicides with different sites of action. “Based on my experiences, timely applications and using different sites of action are key when managing resistant weeds that can cut into my yields and profits,” he says.

For more information on managing weed resistance, go to www.resistancefighter.com.

tight financial times to have is ready access to trusted advisers,” Sandlin says. “By far, the most trusted adviser is the person who knows that farmer’s enterprise the best.”

Often that person is the farmer’s local retailer backed by product suppliers who can provide an extra layer of service and expertise. “I try to help our reps get to that level of expertise,” Sandlin says. “In the end, it’s all about giving growers the service and tools they need to be successful.”

Rowland believes he has all the pieces in place to make it through today’s challenging farm economy. “The last three years have taught me that while I can’t control the weather or trade policy, the right agronomic plan supported by the right technology and people can help me overcome many of the hurdles that get thrown in my way,” he says. 🌱



BUG BUSTERS!

Experts from across the country offer insights and solutions to growers' most pressing 2020 insect challenges.

By Emily Kelley | Illustrations by Mark Matcho

Every year, insects take a huge bite out of growers' profits, resulting in crop damage that adds up to billions of dollars in lost yields. Fortunately, a wave of innovation, particularly over the last decade, is helping growers better manage many of these pests. Below are some of the most economically impactful insects in the U.S., along with solutions that can help give growers a fighting chance for a successful growing season.

ROOTING OUT CORN ROOTWORM

Corn rootworm (CRW) annually costs growers more than \$1 billion in control measures and yield loss. By the time the telltale goosenecking of rootworm-ravaged plants is evident, it's usually too late for that year's corn. "If not managed, corn rootworm pressure can devastate a crop," says Dave Keffeler, a corn grower in Remsen, Iowa.

Newly hatched CRW larvae feed on corn root fibers and outer root tissue, stunting plant growth as they burrow into larger roots. Larva damage is most commonly found from mid-June through mid-July. An infested plant often has brown, chewed-back roots that reduce uptake of nutrients and water. This root pruning opens pathways for plant infection and can lead to reduced yield. As the pest matures, adult CRW beetles bite through the green tissue of leaves and feed on tassels and silks, leaving substantial foliar damage to corn crops.

"Effective corn rootworm (CRW) management requires year-by-year evaluation of potential CRW pressure," says Tim O'Brien, Ph.D., Agrisure® traits manager at Syngenta. "Growers concerned about this pest should have a multiyear management plan in place for each field that incorporates multiple control strategies, including crop rotation, CRW-traited corn hybrids, soil-applied insecticides and adult beetle management. Growers looking for control of more insects may want to consider Agrisure Duracade® 5222 E-Z Refuge® trait stack, as it controls 16 damaging above- and below-ground pests, more than any competitive trait stack. The Agrisure Duracade trait expresses a unique protein



GIVE CRW A ONE-TWO PUNCH

THREAT: CRW larvae feed on roots; adult CRW beetles feed on tassels and silks

DEFENSE: Agrisure Duracade trait stacks; Force 6.5G and Force Evo



PARTY'S OVER, BOLLWORM

THREATS: Caterpillars feed on blooms, squares and bolls; resistance to *Bt* genes

DEFENSE: Besiege insecticide

that binds differently in the gut of corn rootworm and provides a new trait option for CRW management when used in rotation with other industry trait technologies, including Agrisure 3122 E-Z Refuge."

When growers need insecticide options for CRW and other soil-dwelling pests, Force® 6.5G and Force® Evo applied at planting offer superior root protection. Force 6.5G is a higher-loading granular insecticide that controls corn rootworm and other soil-dwelling insect pests, resulting in fewer stops to reload planter boxes. Force Evo, a liquid formulation that delivers proven corn rootworm control, is applied through a closed application system where the product is mixed into the starter fertilizer or water carrier stream prior to going into the furrow.

Because of the high CRW pressure in his area, Keffeler chooses corn hybrids with Agrisure Duracade trait stacks and also applies Force Evo on his corn acres. "We feel very confident protecting our corn with Syngenta technology," Keffeler says. "These products help us consistently achieve higher yields because of the superior corn rootworm protection they provide."

AMP UP RESIDUAL CONTROL OF COTTON BOLLWORM

Cotton bollworm, also known as corn earworm, is a pest particularly vulnerable to developing resistance. "The first generations occur in corn, which in most cases contains the same *Bt* gene used in cotton," says Tripp Walker, Syngenta agronomic service representative in Mississippi. "Due to this selection pressure, we see resistance to the *Bt* gene, particularly in the Bollgard® II and Widestrike® cotton varieties, occurring in cotton bollworm."

Walker notes that the diamide class of insecticides, which includes Besiege® insecticide, is now one of the only effective options for controlling this pest. Cotton growers like Collins Fyfe of Tunica, Mississippi, have come to rely on this insecticide for dependable cotton bollworm protection.

"I can count on the dual modes of action in Besiege to give me bollworm control in cotton," says Fyfe, who's also a retail representative at Nutrien Ag Solutions. "The added residual gets me through the worm flights in my cotton fields."

Cotton bollworm moths lay eggs across cotton, corn and other crops. The light green to light brown larvae, which are 1.5-inch-long caterpillars, feed on squares, blooms and bolls. This feeding causes delicate tears that may become infected with rot



"I HEAR THE CORN ROOTS HERE ARE TO DIE FOR!"

organisms and disease. Typically migrating from corn to cotton in July, these pests cause damage for farmers across the Midwest and South.

FIGHT BACK AGAINST ASIAN CITRUS PSYLLID

In the battle to defeat a pest that doesn't have an economic threshold, the challenge is to scout intensively, then control it with products that maximize residual performance and minimize disruption of beneficial insect populations.

"Asian citrus psyllid [ACP] is endemic in Florida citrus and is intensively managed because it vectors citrus greening," says Florida Syngenta Agronomic Service Representative John Taylor. "Since its introduction, Minecto® Pro insecticide quickly established itself as an industry standard for managing ACP. Its combination of abamectin and cyantranilprole also targets a number of other citrus insect pests."

Minecto Pro provides extended residual control of ACP as well as other overlapping citrus pests, such as citrus leaf miners and citrus rust mites. Its use in Florida citrus also is supported by the Syngenta Citrus Intern Scouting Program, which offers 90



FEEDING TIME IS OVER

ACP
THREAT:
Vectors Citrus Greening

COLORADO POTATO BEETLE
THREAT:
Larvae and adult beetles defoliate plants

NAVEL ORANGE-WORM
THREAT:
Damage to tree nuts

DEFENSE FOR THE ABOVE:
Minecto Pro insecticide

days of scouting services to Florida citrus growers, providing them with key information to make better-timed foliar applications in citrus groves to reduce the impact of ACP and other damaging citrus pests.

THE POWER OF TWO HELPS REDUCE NAVEL ORANGEWORM PRESSURE

Unfortunately for California tree nut growers, 2020 is developing into a year when navel orangeworm pressure likely will be heavy.

To help deal with this pressure, Garrett Gilcrease, a Syngenta agronomic service representative in California, suggests tree nut growers consider Minecto Pro insecticide for the May spray in their insect control programs. "Minecto Pro combines two active ingredients to provide enhanced control of navel orangeworms, giving growers more bang for their buck than a solo material," he says. At the May timing, Minecto Pro offers effective, fast knockdown and essential residual on leaves and developing nuts. Minecto Pro is also effective as a first hull split spray for mite knockdown, protecting nuts from pests.

After crop harvest, Gilcrease advises growers to remove mummies from trees to reduce the risk of navel orangeworm infestations the following growing season. These mummies become a food source for navel orangeworms that lie in wait for the next season's nuts. For more information on managing navel orangeworms, go to www.syngentaus.com/actnow.

GROWER RESCUES CROP FROM COLORADO POTATO BEETLE

Resistance to many common insecticides is making one of the most destructive pests in potatoes even deadlier. Just ask AJ Bussan, Ph.D., director of agronomy for Wisconsin-based Wysocki Family of Companies. He recounts how extreme Colorado potato beetle pressure nearly destroyed their potato crop in 2018. "We lost fields to defoliation five weeks prior to maturation," he says.



PEST PATROL HELPS ISSUE TIMELY WARNINGS AND EXPERT ADVICE

Reacting quickly to this pest pressure, Bussan and his team were able to apply Minecto Pro insecticide and severely reduce the impact of Colorado potato beetles on the rest of their potato plants.

“Minecto Pro is the first product that has two complementary modes of action and is highly efficacious on the Colorado potato beetle,” says Jeff Zelna, Syngenta agronomic service representative in New York. “Over the past 10 years, most new products sold in the potato market included a combination of either a pyrethroid or neonicotinoid. Minecto Pro is the first product that does not contain either chemistry. Instead, it contains a Group 28 diamide and Group 6 abamectin, both efficacious on the Colorado potato beetle.”

From Maine to Idaho, the Colorado potato beetle can decimate whole fields of tubers. With the ability to damage plants immediately upon emergence, this pest winters underground in potato fields and can lay up to 350 eggs per generation. Larvae and adult beetles feed on leaves, tubers and roots and can completely defoliate plants.



MANAGING THE EVER-EVOLVING SOYBEAN APHID

While the soybean aphid has wreaked havoc on Midwestern and Southern soybeans for nearly 20 years, its continuous evolution brings new challenges to growers and resellers every year.

“This pest continues to evolve, and parts of Minnesota have populations showing signs of pyrethroid resistance,” says Syngenta Agronomic Service Representative Tim Dahl from Minnesota. “The good news is that Endigo® ZC insecticide is highly effective in controlling these populations.”

University trials consistently show that Endigo ZC outperforms its generic counterparts against these resistant soybean aphids populations.* “Endigo ZC is the real deal,” says John Koenig, insecticide product lead at Syngenta. “Generics can’t touch it.”

The soybean aphid originated in Asia and feeds on the newest growth of a soybean plant, causing



TAKE THAT, SOYBEAN APHIDS
THREATS:
 Reduced seed count and lower yields

DEFENSE:
 Endigo ZC insecticide

damage primarily between late May and August. Large populations of soybean aphids can reduce seed count and lower yields by as much as 10% to 15%.

A HELPING HAND

Whatever pests emerge during the 2020 growing season, growers and resellers across the country can take comfort in knowing that solutions backed by a team of experts are available.

“The wheels of innovation are continually turning in agriculture,” says Lisa Moricle, head of insecticides and fungicides at Syngenta. “When it comes to insects, Syngenta is helping growers face these challenges head-on with cutting-edge insecticides and traits, awareness programs, and education.” See “Pest Patrol Helps Issue Timely Warnings and Expert Advice,” below. 🌱

*University of Minnesota, Extension. “Foliar-applied insecticide control of the soybean aphid.”

Southern growers looking for expert opinions on threats to their yields have relied on the Syngenta Pest Patrol Program for the past 12 years. Pest Patrol offers timely updates on local outbreaks, weather, current pest levels and treatment recommendations.

Agronomy experts across the South provide this information, which is delivered via text alerts and online at the Pest Patrol

website. In 2020, the program is continuing to expand by adding more voices to the conversation, including Syngenta agronomic service representatives and Extension entomologists and pathologists.

“Pest Patrol started as a platform for university entomologists to alert the agricultural community about potential or real insect outbreaks across all crops and

the need for intensified scouting,” says Jeff Mink, a Syngenta agronomic service manager. “Today, it remains a critical tool in several geographies and not only warns of outbreaks but offers solutions to mitigate threats and prevent yield loss.”

For more information about this year’s Pest Patrol Program, go to www.syngenta-us.com/pest-patrol.



Top 10 Tips for Managing Continuous Corn

**WITH A WELL-THOUGHT-OUT MANAGEMENT PLAN,
CONTINUOUS CORN CAN PAY DIVIDENDS.**

By Darcy Dougherty Maulsby



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Tom Fink gets the most out of his continuous corn acreage by implementing the right management practices on his farm in Chadwick, Illinois.

OM FINK IS NO STRANGER TO GROWING CORN ON CORN.

His father raised continuous corn on the family's northwest Illinois farm for decades. The 1988 drought pushed Fink to a corn-soybean rotation, and he returned to continuous corn after 2006 to capture more profit potential.

"We grow really good corn in Carroll County," says Fink, who farms near Chadwick, Illinois. His average yields over the past two years have ranged from 215 to 245 bushels per acre. "It comes down to management," he says.

Continuous corn can be unforgiving. "About 15 years ago, nearly two-thirds of the growers around here had at least 75% of their acres in continuous corn," says Blake Miller, a Syngenta agronomic service representative (ASR) in Illinois. "Many got burned by agronomic failures after three or four years."

Making continuous corn work means knowing what you're up against. "We have to go into continuous corn with a higher management level than we would with other cropping systems," says Mark Licht, Ph.D., an assistant professor and cropping systems specialist with Iowa State University Extension.

Getting the basics right is essential, notes Kevin Scholl, a Syngenta ASR who farms in Illinois. “You don’t want to let your corn have a bad day. Everything you do should help reduce plant stress.”

Reducing plant stress includes:

1 Location. Fields selected for continuous corn should have good drainage, high water-holding capacity, good fertility, no compaction problems, and low insect and disease pressure.

2 Residue management. Healthy, high-yielding corn can produce increased residue levels that can hinder emergence, seedling establishment and yield potential of the next crop. Typically, yield drag is between 5% and 15%, although it can reach 30% in some cases, Licht notes.

“Residue can also create a large source of inoculum that can contribute to increased disease pressure,” says Andy Heggenstaller, head of agronomy at Syngenta Seeds.

Appropriate residue management starts at harvest. Fink uses a stalk-chopping head on his combine. So does Matt Kellogg, who raises continuous corn near Yorkville, Illinois. “The particle size of the residue is closer to the size of a postage stamp, so it breaks down faster,” says Kellogg, who also uses a chisel plow in the fall to help manage residue.

3 Soil fertility. Use soil tests to determine whether you need to add lime and/or additional phosphorus and potassium. “Be sure to fertilize to at least maintenance levels,” says Randy

Kool, a Syngenta ASR in Iowa. Additional nitrogen, he notes, is often required as well for maximum yield potential.

4 Hybrid selection. Choose hybrids designed for high-residue situations. Also, consider hybrids’ emergence scores, stress-tolerance ratings, seedling vigor and root/stalk scores. Invest in a strong, defensive disease package, since prior-year residue can harbor disease pathogens, including northern corn leaf blight, gray leaf spot, Goss’s wilt, and *Diplodia* stalk rot. “The Syngenta Seeds portfolio includes hybrids that are particularly well-adapted to continuous corn,” Heggenstaller says.

5 Planting conditions and seeding rates. A slight seeding rate increase of 5% to 10% may offset stand establishment challenges that can occur in fields planted to continuous corn. “We’re fairly aggressive with our seeding rates, which are in the upper 30,000 seeds-per-acre range,” Kellogg says.

Recommended seeding rates also depend on the tillage system involved. “With strip-till or conventional tillage, you typically don’t need to increase the seeding rate, but you may want to consider it with no-till,” says T.J. Bins, a Syngenta ASR near Leoti, Kansas.

6 Stand establishment. Seed placement is critical for uniform spacing and emergence, and that requires proper residue management. In the spring, Kellogg uses a disk finisher to get the seedbed as level as possible. “You need good seed-to-soil contact for proper stand establishment,” Scholl says.



Trivapro fungicide, stored in a bulk container on Tom Fink’s farm, helps him manage disease pressure.

“OUR AREA HAD A LOT OF ISSUES WITH TAR SPOT IN 2018. GROWERS HAD GOOD RESULTS BY APPLYING A FUNGICIDE WITH THEIR POST-EMERGE HERBICIDE APPLICATION.”

—KEVIN SCHOLL
Syngenta Agronomic Service Representative

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NITROGEN REQUIRES CAREFUL MANAGEMENT

Since the immobilization of nitrogen is a potential hurdle, continuous corn is more subject to nitrogen stress than corn in a rotation with soybean.

“Soil microbes use nitrogen as an energy source to break down residue,” says Mark Licht, Ph.D., an assistant professor and cropping systems specialist with Iowa State University Extension. “Continuous corn often requires 30 to 50 pounds per acre more nitrogen than corn following soybeans.”

Applying more nitrogen requires careful management. “It’s important to feed your corn crop at key points during the growing season,” says Andy Heggenstaller, head of agronomy at Syngenta Seeds.

The process can start with stabilized nitrogen applied during the fall, says Blake Miller, a Syngenta agronomic service representative in Illinois. Nitrogen applied preplant and then side-dressed during the growing season also helps increase plants’ nitrogen-use efficiency in a continuous corn system. “That’s what helps you beat yield drag,” Miller adds.

glyphosate-tolerant corn. “Layering in preemerge herbicide and residual herbicides goes a long way toward controlling weeds until the crop canopy takes over,” Scholl says.

7 Disease management. While seed treatments protect seedlings from root and shoot infections, foliar fungicides help protect the plant during the grain-fill period. “Our area had a lot of issues with tar spot in 2018,” Scholl says. “Growers had good results by applying a fungicide with their post-emerge herbicide application.”

Kellogg relies on Trivapro® fungicide. “It did a good job of controlling tar spot and northern corn leaf blight,” he says. With three active ingredients (Solatenol® fungicide, azoxystrobin and propiconazole), Trivapro can be applied between the V4 and V8 growth stages for longer-lasting control of tar spot, gray leaf spot, northern corn leaf blight and other diseases.

“Then at VT to R1, you may want to do an aerial application of Miravis® Neo fungicide,” Miller says, referring to the Syngenta fungicide that provides broad-spectrum disease control in corn and soybeans.

8 Insect control. Weekly scouting for insect pressure is critical to success with continuous corn, Fink says. Protect against corn rootworms and European corn borers by using traits that help control above- and below-ground insects.

Growers concerned with corn rootworm should have a multiyear corn rootworm management plan in place for each field that includes multiple control strategies, including crop rotation, corn-rootworm-traited corn hybrids, soil-applied insecticides and adult beetle management.

“When I was scouting fields, areas with the highest pressure from corn rootworms were almost always in continuous corn,” Licht says. “Also, these growers were using the same trait year after year. It’s important to diversify the insect traits you use.”

By offering both Agrisure Duracade® and Agrisure® 3122, Syngenta is the only provider offering trait stack choice with differing dual-mode, corn-rootworm-control protein combinations.

Kellogg prefers the Agrisure Duracade trait, which contains a unique mode of action to help control corn rootworm. He also uses Force® Evo liquid corn insecticide. “Using a combination of Agrisure Duracade and Force Evo helps us control the bugs,” he says.

Another option is Force® 6.5G insecticide, a high-load granular formulation that gives you proven corn rootworm control with fewer stops to refill, Scholl says.

9 Weed management. Controlling weeds is vital to maximize yield potential in continuous corn. “You’ve got to keep your fields clean,” Fink says. “I use Acuron® herbicide upfront.”

With four active ingredients, Acuron controls the tough weeds other products miss. Acuron can be followed with Halex® GT herbicide to deliver post-emergent weed control, with residual that lasts until crop canopy in

10 Controlling volunteer corn. Like any other competing plant or weed, volunteer corn can reduce yield in continuous cornfields by robbing the crop of available light, nutrients and water. Even though they could potentially help offset these losses by contributing to yield, Scholl says, volunteer plants just don’t have the ability to produce the amount of grain that hybrid corn does.

Because volunteer corn is selective to corn herbicides, controlling it in continuous corn is difficult. The best management strategy is to reduce stalk lodging, kernel losses and ear drop-page that lead to volunteer corn, Kool says. Growers can also adjust their fall tillage strategy to help mitigate volunteer corn the next year. By allowing seed to stay on the soil surface in the fall, growers may be able to reduce populations the following season so that germination takes place prior to freezing temperatures, which will kill the emerging volunteer plants.

Working with Syngenta has helped Kellogg get excellent results with continuous corn. “It’s easy to get the answers you need,” he says. “When I’ve had a question about a specific Syngenta product, I’ve been able to talk to the scientist responsible for it. The Syngenta team wants to stay connected to the farmers they serve.” 🌱



Bringing Mental Health Out of the Darkness

Agriculture is finally talking about mental wellness on the farm – a topic once shrouded in silence and shame.

Depression and anxiety on the farm are pressing problems that have long simmered in relative secrecy with little attention or open discussion. Shelby Watson-Hampton knows this too well; her older brother, Russ, who almost always appeared outgoing and energetic, silently battled depression and anxiety. Suicide claimed his life in 2003. Watson-Hampton farms in Maryland with her family on their fourth-generation family farm, Robin Hill Farm & Vineyards.

“Suicide was very stigmatized then. It just wasn’t talked about,” she says. “So I think we did what a lot of farm families do: We just shut down a little bit.”

In fact, the issues of anxiety and depression have been — and continue to be — widespread in ag. High percentages of farmers and farmworkers say financial issues (91%), farm or business problems (88%) and fear of losing the farm (87%) impact their mental health, according to a 2019 poll sponsored by the American Farm Bureau Federation. They just haven’t been talking about it. “Rural people take pride in taking care of themselves and handling situations,” says Ted Matthews, director of Minnesota Rural Mental Health. “That positive thing can become a negative when they need help and they have too much pride to ask for it. That happens far,

far too often. Farmers will say, 'I can still handle this.' And my question is, 'Why?' If you can feel better, why wouldn't you? We can only handle so much. The problem is, none of us knows how much that is."

Signs of Trouble

When it comes to warning signs of depression and anxiety — whether in yourself or someone else — David Merrell, M.D., says one of the main things to look for is a loss of enjoyment. "You stop doing the things that you enjoy doing, the activities, the fishing, whatever it is," says Merrell, the on-site medical doctor for Syngenta in Greensboro, North Carolina. "Individuals who are starting to face depression and anxiety find there's a mounting weight on them that makes those activities no longer enjoyable."

Weight gain or weight loss can be another sign, as is increased emotionality, such as becoming tearful over simple interactions. "Maybe deadlines are being missed where they never used to be missed — fields aren't getting planted when they used to," Merrell says.

Marriage issues and alcohol or opioid abuse also can be symptoms, and Matthews often hears about people isolating themselves, withdrawing from family and friends. "People start talking less and less, and they're left to their own thoughts. They feel alone."

Additional signs indicating that a person might need help include:

- Decline in care of crops, animals and farm
- Deterioration of personal appearance
- Buying more life insurance
- Increase in physical complaints, difficulty sleeping
- Giving away prized possessions
- Making statements such as "I have nothing to live for" and "My family would be better off without me."

Giving and Getting Help

Many experts suggest that listening nonjudgmentally, with care and concern, is often the most effective way people can help someone facing anxiety or depression. "Communication is hugely important, but you have to learn how important it is by actually doing it," Matthews says. If someone in your life needs to talk, be sure to listen — don't blame, he adds. "No two people are alike, so you can't say, 'Why can't this person handle this?'"

Like many problems, it "takes a village" to help solve the mental health crisis in rural America. "All of us in rural communities are in this together," Matthews says. "If people don't know what to do, they do nothing. More medical doctors and psychologists would be helpful. But without community involvement, little progress will be made."

For the person suffering from depression, proactively finding that kind of support system is crucial, Merrell says. "This I cannot stress enough: Find somebody you can confide in to say, 'I'm having a hard time,'" he says. "That person might be a friend, a spouse, a clergy member or a mental health professional who will be able to give you tools and say, 'Hey, next time this comes up, here's what you've got to do.'"

These conversations don't always require going into an office. "There are a lot of telehealth opportunities so you can seek help from professionals over the phone," Merrell notes.

Today, there are more outlets for help and more awareness than ever before. "It is really refreshing, in the last five years, to see that a lot of groups in the ag community have realized mental health can be a real problem," Watson-Hampton says. "Major land grant universities, extension agencies, commodity groups, agribusinesses — they're all looking at it now. It comes up at almost every ag conference I've gone to in the last year or two, which is a huge change. There are farm crisis centers and farm resources like Farm Town Strong, which is a collaboration of the Farm Bureau Federation and National Farmers Union to combat opioid addiction."

This greater acceptance of mental health issues has helped lift the stigma she felt after her brother's death and has brought the issues into the light. "We all struggle with something," Watson-Hampton says. "Mental health, just like physical health, is a part of our overall well-being, and it needs attention sometimes. It's so much better to be fully functioning, healthy and alive than it is to fight this dark battle on your own or to give into it. There are so many opportunities for help, and needing it is so normal." 🍀

STORY BY SUZANNE BOPP

"Suicide was very stigmatized then. It just wasn't talked about. So I think we did what a lot of farm families do: We just shut down a little bit."

— SHELBY WATSON-HAMPTON
Maryland Grower

RESOURCES

To get mental health counseling or to learn more about mental health issues, contact these organizations:

- American Foundation for Suicide Prevention, afsp.org
- Employee Assistance Program, www.workhealthlife.com
- Make It OK, makeitok.org/resources
- National Alliance on Mental Health, www.nami.org
- National Suicide Prevention Lifeline, **1-800-273-8255**
- Ted Matthews, www.farmcounseling.org

Speaking Up for Agriculture

During a time when agriculture needs as many voices as possible, the Leadership At Its Best program is helping develop the leaders of today and tomorrow.

When farmer Dave Walton testified before the U.S. House of Representatives Committee on Small Business in May 2019, he shared a sobering reality: The crop some farmers were planting at that time might be their last. As Walton outlined challenges facing agriculture, he shared what farming meant to his family, his community and his fellow U.S. farmers.

The prospect of sharing his story before Congress was unnerving; but Walton, an American Soybean Association director, embraced the opportunity with confidence and humility, thanks in part to his participation in the 2019 Syngenta Leadership At Its Best (LAIB) program, where he received an education in ag policy, as well as training on message delivery. “I learned that if we, as growers, don’t tell our stories, someone else will — and we may not like how they tell them,” he says.

Empowering growers to be public advocates for agriculture is the central premise of LAIB, an initiative Syngenta launched in 1986. Over the past 34 years, more than 4,600 participants have attended the weeklong workshop, which is designed to help leaders from key agricultural groups improve their ag advocacy skills. Many LAIB alumni are now in leadership roles in their organizations — and some serve as elected or appointed officials in national, state and local government.

The Value of Firsthand Storytelling

In January 2020, nearly 50 ag leaders convened in Research Triangle Park (RTP), North Carolina, and Washington, D.C., for the 2020 LAIB workshop, which came on the heels of one of the most difficult farming years in recent history. From challenging market conditions to calamitous weather events, the 2019 season is one that this class of LAIB participants will not soon forget.

“Growers throughout the country faced a lot of headwinds in 2019, and there wasn’t a region in the country that didn’t face adversity,” says Andrew Lauver, manager of industry relations at Syngenta. Add to that the negative public



perception attached to modern agriculture, and it’s easy to see why growers might shy away from leadership roles.

Lauver, however, has a different — more positive — philosophy. He encourages growers to view the spotlight and the public’s increased interest in farming as opportunities to bring more visibility to the challenges farmers face. “It’s true that agriculture is increasingly under the microscope,” says Lauver, who helped organize the 2020 LAIB program. “But it’s also true that this scrutiny has created a platform for growers to tell their stories.”

And there are no better people to deliver those stories than farmers— like Walton — who can speak firsthand to the benefits of modern agriculture and the challenges facing the industry.

A Shared Passion for Ag

For Michael Crowder and many of his fellow 2020 LAIB participants, there is little distinction between their professions and their advocacy efforts. “My professional activities and volunteer roles almost completely overlap in many forms,” says Crowder, who serves as president-elect of the National Association of Conservation Districts and also manages farming operations in multiple geographic locations, including Illinois, Washington state and Indiana, where he is the third generation on the family farm. “While traveling around the



Clockwise from left: Mauricio Garcia of the American Soybean Association (left) expresses his appreciation for one of the conference's activities; Jennifer Cross of the American Farm Bureau Federation (left) and Michael Crowder of the National Association of Conservation Districts (right) prepare to tour the Advanced Crop Lab; Andrew Lauver and Mary Kay Thatcher, both of Syngenta, discuss plans for the conference; a booklet of conference materials helps keep Leadership At Its Best participants on track and organized.



SEE MORE PHOTOS.
www.syngentathrive.com/policy



nation talking to producers and conservation district folks, I can talk about experiences I've had and conservation projects I've implemented on my own ranch in Washington state and on the Midwest farms that I manage."

While the 2020 LAIB participants represented a wide range of crops, geographies and professions that help farmers, they found unity in the challenges that members of their respective organizations face — challenges like trade, immigration, crop technology acceptance and the urban-rural divide.

The urban-rural divide is intensely palpable for Shannon Higginbotham, a New Jersey-based grower who was selected by the American Farm Bureau Federation Women's Leadership program to participate in LAIB. Higginbotham and her family produce more than 50 different types of crops, giving credence to her state's famous "Garden State" moniker. The roadside produce stand that she and her family operate, located in a sprawling suburb outside Philadelphia, helps bring a face to agriculture to those most removed from it.

For Higginbotham, LAIB helped augment her ag policy knowledge base, and she delighted in having access to experts who discussed some of the most pressing matters of the day. The Syngenta leaders she met at the RTP Innovation Center and Advanced Crop Lab equally

impressed her. "Seeing how much energy and passion Syngenta employees have for their jobs was incredible," she says. "I was able to see how much Syngenta cares about the world, the people in it and the environment. And their views on the future of agriculture are all tethered to that." 🌱

STORY BY KARYN OSTROM

CLASS ACTS

The following organizations participated in the 2020 Leadership At Its Best program:

- Agricultural Retailers Association, www.aradc.org
- American Agri-Women, www.americanagriwomen.org
- American Farm Bureau Federation Women's Leadership Program, www.fb.org/programs/womens-leadership-program
- American Soybean Association, www.soygrowers.com
- Independent Professional Seed Association, www.ipseed.org
- National Agricultural Aviation Association, www.agaviation.org
- National Association of Conservation Districts, www.nacdnet.org
- National Association of Wheat Growers, www.wheatworld.org
- National Corn Growers Association, www.ncga.com/home
- National Potato Council, www.nationalpotatocouncil.org
- National Sorghum Producers, www.sorghumgrowers.com

Stepping Up to the Plate, Season After Season

A retailer in America's Heartland puts the power of long-standing relationships to work for his customers.



The positive working relationship between Syngenta Sales Representative Mary Johnson (left) and Wilbur-Ellis Consultant Marvin Wiles (right) is evident as they inspect a bulk tank at the Wilbur-Ellis facility in Plattsmouth, Nebraska.

A Business Built on Relationships

Like most successful retailers, Wiles understands the close working relationships he forms with customers and suppliers help him deliver the customized solutions his farming community needs. His career, which spans more than four decades, is a testament to the power of those partnerships. In 1976, he helped establish Wiles Brothers Fertilizer, a small custom spraying operation in southeast Nebraska. During 2019, Wilbur-Ellis Company LLC, a recognized leader in providing precision agriculture, crop protection, seed and nutritional

solutions to farmers, acquired the assets of Wiles Brothers Fertilizer Inc., which was one of the top independent agriculture retailers in the state.

Wiles, who now serves as a consultant to Wilbur-Ellis Plattsmouth, has worked with Syngenta sales representative Mary Johnson for more

“To help growers succeed, you have to have your ear to the ground. ... We help our customers manage change — and stay ahead of it.”

— MARVIN WILES
Ag Retailer and Consultant
Wilbur-Ellis

Grower Brett Adams is an early riser. During the growing season, he wakes long before dawn to run his fifth-generation corn and soybean operation in southeast Nebraska and northwest Missouri. Although those dim hours before sunrise are quiet, Adams is never without help; he knows he can rely on the assistance of Marvin Wiles, his ag retailer and consultant.

“Marvin knows that if I’m calling him at an odd hour, I probably need something,” Adams says. “He’s always there and available. He’s the sort of guy that if you have a problem with your crop, he’s going to help you find a solution and he’s not going to quit until he does. We have a great relationship.”

Wiles and Adams have been working together for nearly 25 years, since Adams was in high school. Over those years, they have built a strong partnership. Adams considers Wiles to be a mentor and a friend. That kind of close relationship is essential to how Wiles conducts business.

“Our customers are our neighbors and our friends,” Wiles says. “To help growers succeed, you have to have your ear to the ground and know what’s going on out in the market. We help our customers manage change — and stay ahead of it.”

than 30 years. Their relationship dates back to Johnson’s days with Syngenta legacy company CIBA-Geigy, which she joined in 1982, her first year out of college.

“Syngenta has always had quality products backed by quality people,” Wiles says. “Our long-term relationship with and the great service provided by Mary Johnson and Agronomy Service Representative Bob Kavinsky make it easy for us to offer Syngenta products to our customers. It’s nice to have those kinds of long-term relationships. As things change in the market, you’ve got to have trusted allies to help you cope with those changes.”

Johnson notes the partnership has been successful because of a shared passion for collaboration and farmer success. “It’s been a win-win, and that’s why it’s worked,” she says.

Marvin is farmer-fluent, Johnson adds. “He can help farmers find solutions,” she says. “Wiles Brothers has always been very

good at introducing new products and technologies to the area, often after trying them on their own farm first. For example, they tried Tavium® Plus VaporGrip® Technology herbicide on their farm last year. Because of the excellent results, Wilbur-Ellis Plattsmouth is a bulk account for that product this year.”

Getting Started

When Wiles got out of college, his father was farming about 900 acres, which wasn't enough for all of his sons to come back to the farm. For the Wiles brothers, it was a love of agriculture that led them into the ag retail business.

“We started spraying for a few neighbors,” Wiles says. “Over several decades, the business grew to where we were custom-applying crop protection products on more than 250,000 acres per year.”

The Nebraska Agribusiness Association recently honored Wiles for his 25 years of service as a Certified Crop Adviser.

A Local Pioneer in Aerial Application

According to Wiles, one of the most successful collaborations between his company and Syngenta was when Wiles Brothers Fertilizer initiated an aerial campaign to treat diseases.

“Quit Xcel® fungicide helped put us on the map, and now we've gone on to Trivapro® and Miravis® Neo fungicides,” says Wiles, whose company currently applies between 70,000 and 110,000 acres of corn and soybeans per year by air, depending on disease and insect pressure. “Syngenta worked closely with us during pre-season meetings with the FAA [Federal Aviation Administration] and regulatory groups to help us get off to a strong start. That was an example of how Syngenta goes the extra mile. It's important because we're all in this together.”

Practicing What They Preach

Wiles is no stranger to the daily challenges a grower might face. He and his brother Glenn farm more than 15,000 acres themselves. “We use a lot of Syngenta products on our own farm,” Wiles says. “We don't make recommendations to others to use certain products and not use them ourselves. The test plots we've run on our farm over the years have helped to inform and validate our recommendations. Farmers like to be shown.”

Wiles adds that financing available through the AgriEdge® grower program is another significant benefit of doing business with Syngenta. “It's something we take advantage of ourselves, and it has worked very well. There are a number of financing alternatives out there, but Syngenta just steps up to the plate and does it all.” 🌱 STORY BY BRAD BREMER

EDITOR'S NOTE: This article is the first in a series celebrating the strong partnerships that help propel agriculture forward. Look for additional stories in upcoming issues of *Thrive* magazine and online at www.syngentathrive.com/community.

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Ripple Effect

Account lead joins board of directors of Potato Sustainability Alliance. Seed Company receives Syngenta FarMore® Vision Award. Smithsonian Museum exhibit honors women in business.

SUSTAINABILITY


Syngenta Strengthens Its Commitment to Sustainability in Potatoes

Tommy Jackson, sustainability solutions account lead for Syngenta Crop Protection, LLC, was recently elected to the board of directors for the Potato Sustainability Alliance, an organization that aims to improve the environmental, social and economic aspects of potato production in the U.S. and Canada.

"It's an honor for Syngenta to contribute to assisting farmers on sustainability best practices,"

Jackson says.

"This opportunity enables us to work shoulder to shoulder with others who are passionate about enhancing both environmental stewardship and productivity within the potato industry."



An aerial applicator flies low and sprays potato fields in Idaho. Left: Tommy Jackson, sustainability solutions account lead, joins the board of directors of the Potato Sustainability Alliance.



Participating partners in the alliance include potato growers, grower organizations, potato processors, fresh packers, buyers, input suppliers, university researchers and environmental nongovernmental organizations. For more information on Syngenta products and initiatives in potatoes, go to www.syngenta-us.com/crops/potatoes.

AWARDS AND HONORS

Skagit Seed Services Earns FarMore Vision Award

Skagit Seed Services recently received the Syngenta FarMore® Vision Award for its commitment and contributions to the seed treatment industry. Owned by Tom and Jack Hulbert, Skagit Seed Services is a global third-generation farm and seed provider based in northwest Washington. The innovation, stewardship and product excellence of the Hulberts' operation has helped growers maximize their seed investments for decades.

"Syngenta is proud to work with the people of Skagit Seed Services," says Todd Edgington, Syngenta Seedcare product management lead. "They earned this award because of their continued excellence in the field."

Onions are a key crop for Skagit Seed Services, and the Hulbert brothers report their customers see exceptional results with FarMore FI500 Onion seed treatment.

"Once FarMore got out into the marketplace, growers liked it," Tom Hulbert says. "And growers do have a choice. There's a competitor in the market, but they tend to stay with FarMore." He cited performance as a key driver for growers who choose FarMore products to treat their seeds.



Skagit Seed Services received the FarMore Vision Award from Syngenta representatives during a company celebration in La Conner, Washington. From left to right: Jack Hulbert, Micah Scanga, René Hulbert, Andrew Fisher, Tom Hulbert, Todd Edgington and Becky Hastings.



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Cautionary Statement Regarding Forward-Looking Statements

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Making a Difference

A new Smithsonian exhibit recognizes Syngenta scientist Mary-Dell Chilton and other pioneering women in business.

Mary-Dell Chilton, Ph.D., has long been recognized in the plant science community for her pioneering work in genetic engineering. Starting this year, the Smithsonian's National Museum of American History in Washington, D.C., will introduce her to a much broader audience through an exhibit featuring eight women, including Chilton, who broke barriers in business. "The Only One in the Room" offers the public a yearlong opportunity to explore the trials and triumphs experienced by these women along their journeys to success.

"For the few women who do obtain the highest levels of success, they often find themselves alone — the only one in the room," says Peter Liebhold, curator for the museum's

division of work and industry. "We hope that sharing these women's stories can help our visitors feel like they, too, can succeed and make a difference."

Chilton's story is particularly impressive. Currently a retired distinguished science fellow at Syngenta, she spearheaded research that led to the commercial development of the

first genetically modified trait in corn. Her groundbreaking molecular research showed scientists how they could insert genes from another organism into plant cells to produce crop varieties with innovative traits — traits that could protect plants from environmental stresses, enhance yield, improve nutritional content and complement traditional plant breeding in very precise ways.

As a result of this innovative work, Chilton was honored in 2013 as a World Food Prize Laureate, a prestigious award given to individuals who have contributed to the improvement of the world's food security. And in 2015, she was inducted into the National Inventors Hall of Fame, which honors U.S. patent holders whose technological advancements have changed the world through human, social and/or economic progress.


"Her work in agricultural biotechnology opened a whole new industry and changed how we produce food," explains Qiudeng Que, a senior group leader in the Syngenta Seeds Research Unit in Research Triangle Park, North Carolina. "By genetically engineering crops to tolerate insects and produce greater yields, she's helped make farmers' lives easier and agriculture more sustainable."

As important as this breakthrough proved to be, Chilton says the first time she felt the sense of "breaking the glass ceiling" was in 1983, when she was hired to launch the CIBA-Geigy Agricultural Biotechnology Research Unit. CIBA-Geigy is a Syngenta legacy company.

"I was hired based on my scientific abilities and became CIBA-Geigy's executive director of agricultural biotechnology," she says.

She oversaw construction of the laboratory facility, the recruitment of 50 scientists and the development of a portfolio of projects that would address the needs of CIBA-Geigy's agricultural businesses.

"As a scientist and pioneer in agricultural biotechnology, she's in a small group of brilliant academics," Liebhold says. "She also proved her abilities as an outstanding administrator."

For more information on "The Only One in the Room" exhibit, go to americanhistory.si.edu. 

STORY BY LYNN GROOMS

"Mary-Dell Chilton's work in agricultural biotechnology opened a whole new industry and changed how we produce food."

—QIUDENG QUE
Senior Group Leader
Syngenta Seeds Research Unit





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