

Growing Together

»»» 4Q | 2014

# thrive<sup>®</sup>

## Triple Threat

Seed Treatments Protect Against Nematodes, Diseases and Insects

➤ THE PLAIN FACTS ABOUT  
GMO CROPS

➤ 2014 FARM BILL PRESENTS  
CHALLENGES, OPPORTUNITIES

syngenta<sup>®</sup>

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**thrive**   

Even if you love your print edition of *Thrive*, you'll still want to 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](http://www.syngentathrive.com).

**ON THE COVER** Iowa grower Roger Elmore credits Syngenta seed treatments for helping his corn and soybean plants produce healthier root systems. Photo: Mark Kegans

**THIS PAGE** Treated soybean seed in Beaver Creek, Nebraska. Photo: Bob Ervin

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

Please send them to [thrive@syngenta.com](mailto:thrive@syngenta.com). For more information, visit the FarmAssist website at [www.farmassist.com](http://www.farmassist.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, services and solutions, and to provide them with the information they need to succeed in today's complex marketplace.



# Complete Solutions


Imagine a world without cellphones, the Internet, Doppler radar or GPS. The same era that marked the launch of these life-enhancing technologies also witnessed the advent of seed treatments. Each of these remarkable advancements from the 20th century's final decades has provided simpler, more convenient solutions to complex challenges—from quickly accessing critical information and each other to protecting crops from pests.

It's, of course, the latter challenge that our line of Seedcare products began tackling more than 35 years ago, when we helped usher in this revolutionary approach to pest management. Since then, our quest to discover new active ingredients (a.i.s) has intensified. What started as a single fungicide seed treatment has grown into the Syngenta family of multiple a.i. combinations that manage damaging diseases, insects and nematodes in a targeted way. But when your reputation as a supplier depends partially on our seed treatments, you deserve so much more than a product that contains proven pest-control ingredients. You also deserve unwavering, dependable service and industry-leading expertise.

Behind every Syngenta seed treatment stands a team of product managers, scientists, application experts and field specialists who are dedicated to earning your trust every day. Our network of Seedcare experts, who collaborate in the lab, at your business and on the farm, has mastered the art of formulation and recipe development. Their work enables us to adapt our seed treatments to specific environmental conditions, customer needs and local treating equipment. They make sure the right combination of a.i.s, polymers, colorants and other crop enhancements will not only stick to the seed but also flow through the planter.

Much of our testing takes place at the Syngenta Seedcare Institute in Stanton, Minnesota, which is featured in this issue of *Thrive*. Through hands-on training sessions, the team at Stanton shares its findings with seed company employees and retailers who provide onsite treating services. Our ultimate goal is to share best practices that will maximize the effectiveness of applications while minimizing their environmental impact.

Some of our most promising innovations, including Clariva™ Complete Beans and Avicta® Complete Corn seed treatments, take center stage on the pages that follow. Both are combinations of multiple a.i.s that work together to provide unprecedented early-season protection and crop-sustaining root health.

As the 2015 season approaches, a new era of seed-applied technology is dawning, in which the option of protecting high-value seeds is becoming a necessity. Syngenta will continue its commitment to build complete solutions that are precisely delivered onto the seed better than anyone else in the marketplace. With exceptional customers and industry partners like you, we can't imagine settling for anything less. 

**“As the 2015 season approaches, a new era of seed-applied technology is dawning, in which the option of protecting high-value seeds is becoming a necessity.”**



BRUCE HOWISON



**BRUCE HOWISON**  
Head, Seedcare Product Line  
Syngenta

 Read article online at [www.syngentathrive.com](http://www.syngentathrive.com).



# What's in Store

New technologies and product updates help boost yields and protect crops; news keeps ag professionals up to date.

## NEW TECHNOLOGIES

### > Better Disease Protection, Stronger Roots

Syngenta is introducing Vibrance® seed treatment fungicide for use on corn. It will be sold with Avicta® Complete Corn nematocide/insecticide/fungicide and marketed as Avicta Complete Corn with Vibrance, a combination of separately registered products. The addition of Vibrance to the already robust Avicta Complete Corn package provides a new mode of action against *Rhizoctonia* for best-in-class disease protection and stronger, healthier roots. By helping to increase root surface area, this seed treatment can improve a plant's ability to absorb water and nutrients and manage stress.

Beginning in 2015, Syngenta will treat all new U.S. corn seed production with Avicta Complete Corn with Vibrance. "We chose to adopt Avicta Complete Corn with Vibrance across our seed portfolio because it's the most comprehensive seed treatment on the market," says Eric Boersma, head of corn seed product management at Syngenta. "It's important to use a complete seed treatment package that provides instant, consistent, reliable protection of each grower's seed purchase investment." For more information, go to [www.avictacomplecorn.com](http://www.avictacomplecorn.com).



A combine harvests a crop of grain corn in Iowa.



## PRODUCTS UPDATE

### > 1 Million Acres and Counting

Following the limited commercial launch of Artesian™ hybrids in 2012, the demand for these water-optimized hybrids has increased steadily. In 2013, there were 400,000 acres of Artesian corn; and in 2014, that number grew to 1 million acres.

“This is a significant milestone for Artesian hybrids and the Syngenta corn portfolio,” says Duane Martin, commercial traits lead for Syngenta. “Artesian hybrids convert water to grain more effectively than other hybrids, and growers across the Corn Belt continue to embrace this class of hybrids that can deliver top-end yields, whether the crop receives enough water or not.”

For more information about the elite lineup of Artesian hybrids, visit [www.agrisureartesian.com](http://www.agrisureartesian.com).



### >> Nationwide Preview of New Corn Herbicide

With registration anticipated for the 2015 growing season, new Acuron™ herbicide was trialed in 167 locations across 35 states in 2014, giving growers and retailers the opportunity to preview its performance. Trials included 95 Syngenta locations, 54 university locations and 18 distributor locations.\* This broad-spectrum corn herbicide, which is expected to control more than 70 broadleaf weeds and grasses, features three modes of action and four active ingredients, including new bicyclopyrone. For more information, visit [www.acuron-herbicide.com](http://www.acuron-herbicide.com).

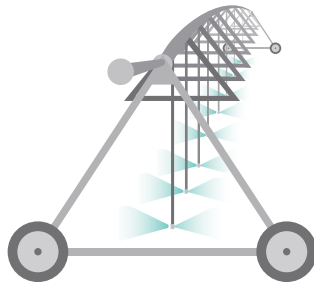


\* Trial locations are approximate and reflect numbers as of May 1, 2014.

All trials are for data collection or demonstration purposes. The corn in these trials will be destroyed to comply with EPA guidelines.

## >>> Water+ Intelligent Irrigation Platform Reaches Milestone

The geographic footprint of Water+™ Intelligent Irrigation Platform has exceeded 40,000 acres in 2014, its first commercial year. Bringing together market-leading agronomic products, irrigation technologies, and services from Syngenta and irrigation system provider Lindsay Corporation, this water-optimization solution represents the industry's first commercial effort to integrate all components of an agronomic system.



**Water+ Intelligent Irrigation Platform improves yield with up to 25 percent less water compared with other programs.**

"Since Water+ Intelligent Irrigation Platform is a customized solution that varies to accommodate a grower's unique needs, 40,000 acres represents a significant sales and support effort and demonstrates our commitment to helping farmers grow more corn with less water," says Chris Tingle, head of water optimization at Syngenta.



## >>>> More Ethanol per Bushel

To maximize the efficiency of its ethanol production processes, the Quad County Corn Processors (QCCP) ethanol plant in Galva, Iowa, developed a process that uses the fiber in corn kernels and converts it into ethanol, improving overall ethanol yield per bushel of corn by 6 percent. When Enogen is combined with Cellerate™ technology, it significantly increases the efficiency of the ethanol plant by increasing throughput up to 15 percent and reducing energy usage by as much as 20 percent. QCCP expects to produce an additional 2 million gallons of cellulosic ethanol per year by combining Cellerate technology with Enogen® corn enzyme technology. This combination is expected to create synergistic benefits for ethanol plants beyond what can be achieved through either technology alone. For more information, go to [www.enogen.net](http://www.enogen.net).



## NEWS AND EVENTS

### > Drive to Thrive Crosses the Finish Line

Earlier this year, we asked our readers to tell us what makes their farms or agribusinesses thrive. Our panel of judges chose the following 10 Drive to Thrive finalists:

- Bobby Byrd**, Plainview, Texas
- Jim Cuddeback**, Washington, Iowa
- Gary Heyerdahl**, Cooperstown, North Dakota
- Mark Lynch**, Barnum, Iowa
- Wade Ostrander**, Indianapolis, Indiana
- Edward Silva**, Davis, California
- Stacey Stearns**, Storrs, Connecticut
- Robert Subart**, Robinson, North Dakota
- Dean Taylor**, Blissfield, Michigan
- William Garrison Thompson**, Georgetown, Kentucky

Syngenta has awarded each finalist with a touchscreen tablet. To read their winning entries and find out which of them is the grand prize-winner of a \$500 gas card, go to [www.syngentathrive.com](http://www.syngentathrive.com).

## Trade Shows and Conferences

At industry gatherings across the country, Syngenta will preview its 2015 lineup of technologies and solutions. To find out more, please visit our booth at any of the upcoming events below:

### OCTOBER 2014

- 19–21 **CAPCA Conference & Agri-Expo**, Anaheim, California
- 27–Nov. 1 **ASFMR Annual Meeting/AgroNomics, Vision for 2015**, Tucson, Arizona
- 29–Nov. 1 **National FFA Convention & Expo**, Louisville, Kentucky

### NOVEMBER 2014

- 12–14 **NAFB Convention**, Kansas City, Missouri

### DECEMBER 2014

- 2–4 **ARA Conference & Expo**, New Orleans, Louisiana
- 8–11 **NAAA Convention & Exposition**, Louisville, Kentucky
- 9–11 **Great Lakes Fruit & Vegetable Farm Market EXPO**, Grand Rapids, Michigan
- 9–11 **Almond Conference**, Sacramento, California
- 8–12 **ASTA CSS 2014 & Seed Expo**, Chicago, Illinois

### JANUARY 2015

- 7–9 **Potato Expo**, Orlando, Florida
- 14–17 **National No-Tillage Conference**, Cincinnati, Ohio

# Truth Be Told

Two experts explain the true story behind genetic engineering, one of agriculture's least understood methodologies.

**Q. How can the ag industry debunk the myths about genetic engineering?**

**A. Greg Conko, executive director, Competitive Enterprise**

**Institute:** Our challenge is not the message, because we have a good story to tell already. It's getting that message into the types of media that grab people's attention. If I have the opportunity to sit down and talk to people who have not made up their minds about the technology, I can alleviate some of their concerns with scientific facts. But the challenge is I can't sit down and talk to 300 million Americans or 7 billion people on the planet and give them the same level of attention. We must find a way to get our message into places where



**“We don't oppose labeling. We oppose laws that force producers to put scientifically irrelevant information on labels.”**

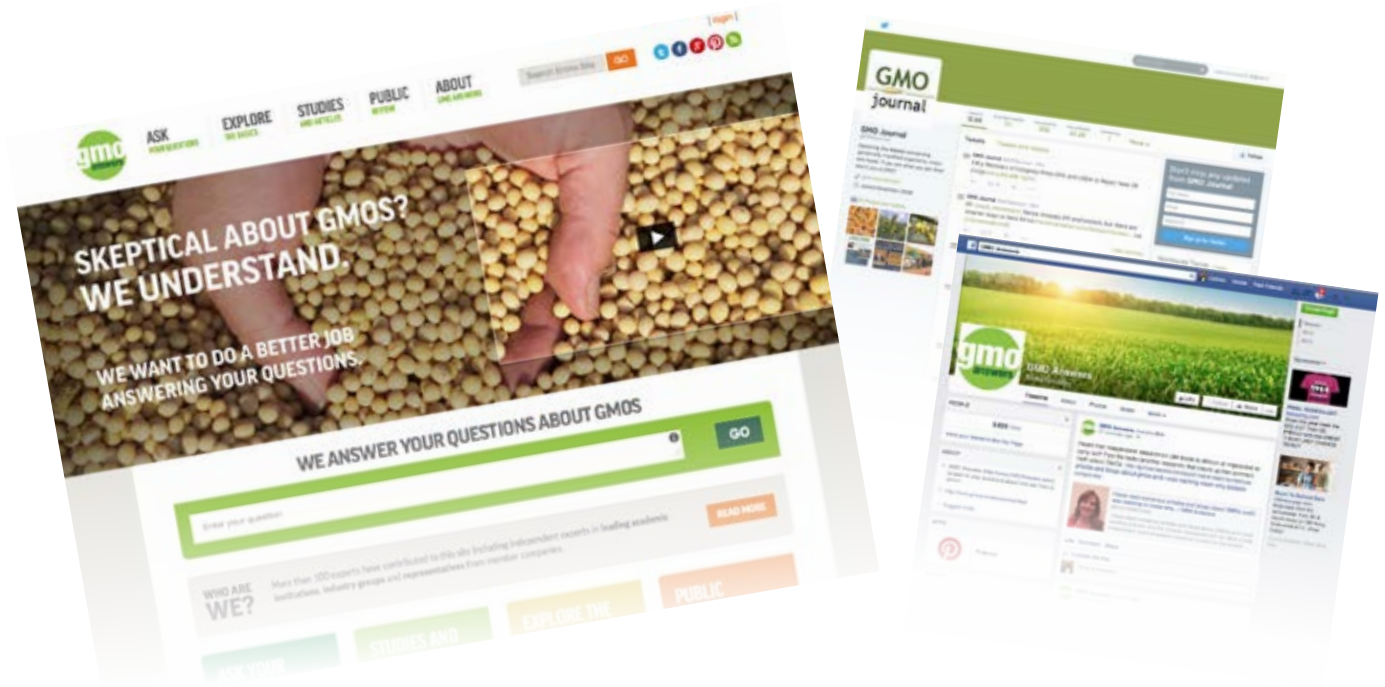
—GREG KONKO

people will see it. Even in the science section of *The New York Times* or in *Popular Science* magazine, you read very positive things about GMOs (genetically modified organisms). The problem is most people aren't reading that section of the paper. They're reading the sports or lifestyle sections.

Part of the answer is the creative use of humorous, entertaining YouTube videos that will enable us to incorporate scientific information into a package that people are going to watch, instead of a talking-head scientist lecturing the audience. Also, in the same way we've spent 15 or 20 years reaching out to those *Popular Science* reporters with some success, we now have to start chipping away at the edges of food and pop-culture sections of newspapers and magazines. *(continued on page 6)*



**GREG KONKO**  
Executive Director  
Competitive  
Enterprise Institute



GMOAnswers.com reaches out to the public through its website, Twitter and Facebook pages to answer questions about biotechnology.

**A. Cathleen Enright, Ph.D., executive vice president, food and agriculture, Biotechnology Industry**

**Organization:** We have to tell our story. For too long, opponents have defined us, and our failure to engage consumers has left a deep deficit of trust. Last summer, Syngenta and other members of the agricultural biotechnology industry made a public commitment to openness and transparency, launching GMO Answers ([www.gmoanswers.com](http://www.gmoanswers.com)) to create a dialogue that's driven by consumers' questions and their desire to learn more about where their food comes from. In the past 12 months, experts have responded to more than 600 questions posted to GMOAnswers.com, and we've engaged in hundreds more conversations through Twitter and Facebook. We've seen a positive shift in the tone of media coverage and an increase in the volume of supportive voices. This is only the beginning. We are literally opening the door to our industry by organizing Open-Door Tours at our members' facilities and fields. We'll continue to crisscross the country, hosting discussions, participating on panels and talking with folks who bring different views to the table.

**Q. How do you know GMOs do not cause health problems in humans?**

**A. Conko:** Most of the major scientific bodies in the U.S., Europe and Asia have looked thoroughly at the literature and have concluded there is no evidence

of harm. More importantly, we can predict that there will be no harm because of what we know about genetic engineering. In plant or animal breeding, the purpose is to move genes around within an organism or between organisms to give them new characteristics. With genetic engineering, you're moving a very specific gene. Testing it for safety is relatively easy and straightforward, certainly more so than testing an entire organism bred by more conventional methods. I think because a lot of laymen don't understand what genes are or how they work, they don't trust what we're doing. But plant geneticists understand these systems extraordinarily well and can test the safety of the gene or the resulting product fairly easily. Getting that across to the general public is the real challenge.

**A. Enright:** Today's GM products are the most researched and tested agricultural products in history—and not just by industry. Health and science organizations around the world, including the Food and Drug Administration (FDA), National Academy of Sciences, World Health Organization and European Food Safety Authority, have widely rejected claims of health concerns and determined that food derived from genetically engineered ingredients is as safe and nutritious as food derived from other production methods, such as conventional or organic. Real-life experience is also on our side. For more than 16 years, billions of humans and livestock



around the world have eaten GM foods with no scientific evidence of health problems related to their consumption.

**Q. Why does agriculture generally oppose GM labeling requirements?**

**A. Conko:** We don't oppose labeling. We oppose laws that force producers to put scientifically irrelevant information on labels. There are lots of breeding techniques used to change the genetic makeup of plants and animals, and some of these are actually far more invasive or disruptive than genetic engineering. The FDA's current policy requires producers to say on their labels any time a food has been changed in a meaningful way, such as fewer nutrients or an added allergen, and to say what's been changed. But the labeling advocates seem to only be interested in putting a label on genetically engineered plants that just says they've been changed but not how, which doesn't make sense if their stated purpose of giving consumers information and letting them choose is truthful. I would argue that the FDA's current policy combined with a voluntary labeling system for producers who want to tout the "GE-free" status of their products is far better.

**A. Enright:** When my daughter was young, she suffered from an allergy to soy, so I know firsthand the importance of food labels. It's critical that labels are factual, verifiable, understandable and not misleading. Any food, including GM food, should be labeled if it raises a safety or health issue, like the presence of an allergen. But we cannot support the mandatory labeling of safe and nutritious GM food just because the food on the supermarket shelf was produced using genetic engineering. Labeling for the presence or absence of GM ingredients is best left to the marketplace, where companies use voluntary labels such as "certified organic" or "non-GMO" to promote their products.

**Q. What are the key benefits of GMOs in agriculture?**

**A. Conko:** GM agriculture enables growers to produce more food with fewer inputs, which results in a cheaper, more abundant and more varied food supply. We're currently using one-third of the world's land surface to produce food. If we reverted back to 1950s' technology, we would use two-thirds of the world's land surface area to produce the same amount of food. In the last 60 years, we have more than doubled global agriculture output while using less land because of modern agricultural technology—and not just GM technology. Advanced farm machinery, synthetic

**“Real-life experience is also on our side. For more than 16 years, billions of humans and livestock around the world have eaten GM foods with no scientific evidence of health problems related to their consumption.”**

—CATHLEEN ENRIGHT

**CATHLEEN ENRIGHT, PH.D.**

Executive Vice President  
Food & Agriculture  
Biotechnology Industry  
Organization

fertilizers and agricultural chemicals, including insecticides and herbicides, have all contributed. Everyone benefits because agriculture has a much smaller environmental footprint.

**A. Enright:** We've barely scratched the surface on the positive impact of GMOs. Currently, many of the benefits accrue directly to growers: producing more on less land, using fewer inputs and spending less time on their tractors. Society benefits indirectly because the technology helps combat deforestation, reduce farm runoff and decrease carbon dioxide emissions. With newer agronomic traits being developed for more efficient nitrogen usage, drought tolerance, flood tolerance and increased plant yield, we'll continue to see the economic and environmental benefits multiply.

In the end, we have to keep telling our story. With the realities of extreme weather, population growth and malnutrition, there is a lot more we can and must do to improve agriculture, increase access to affordable and nutritious food, and ensure we have a healthy planet to pass on to future generations. 🌱

INTERVIEWS BY SUSAN FISHER



# Maintain the Grain

Storing harvested grain may offer convenience and increase marketing opportunities, but there are several factors to consider.

Putting grain into storage has always been a common practice, and the need to store grain grows after a season or two of above-average production—right now, for instance. “Grain producers had pretty good harvests the last two or three years,” says William Edwards, a retired Iowa State University Extension economist. “There’s been more grain and more money.”

But it’s not just about finding a storage spot for increased yield. There are financial reasons for growers to hold on to some of their grain, rather than selling it all immediately after harvest. Storing grain adds flexibility to marketing.

“The grain market is better in January,” says Craig Abell, a Syngenta business development manager. “If you’re not locked into the local elevator, you can shop around.”

Additionally, a grower who has grain throughout the year may be a more appealing supplier to the expanding ethanol market. “Ethanol producers would rather not store grain on site; they’d rather have it delivered throughout the year,” Edwards says. “In order to work with them, producers have to do the storage.”

## Storage Options

Given all of these factors, it’s no surprise that new storage bins are appearing on farms across the country. In fact, there’s more on-farm storage today than there ever has been, Abell says. “One reason is harvest efficiency: The elevator might be open from 7:30 to 5, but on the farm, you can unload on your own schedule.” There may also be tax benefits to building storage; in many cases, growers can expense the purchase.

But while on-farm storage in a traditional upright storage bin is one possibility for storing grain, it may not be for everyone, says Jeff Spence, grain division manager at Crystal Valley Co-op in Lake Crystal, Minnesota. “If you’re looking toward retirement, you might not want to spend the money,” he says. “But if you’re expanding, you might. The more aggressive growers are out there purchasing acres.”

“The grain market is better in January. If you’re not locked into the local elevator, you can shop around.”

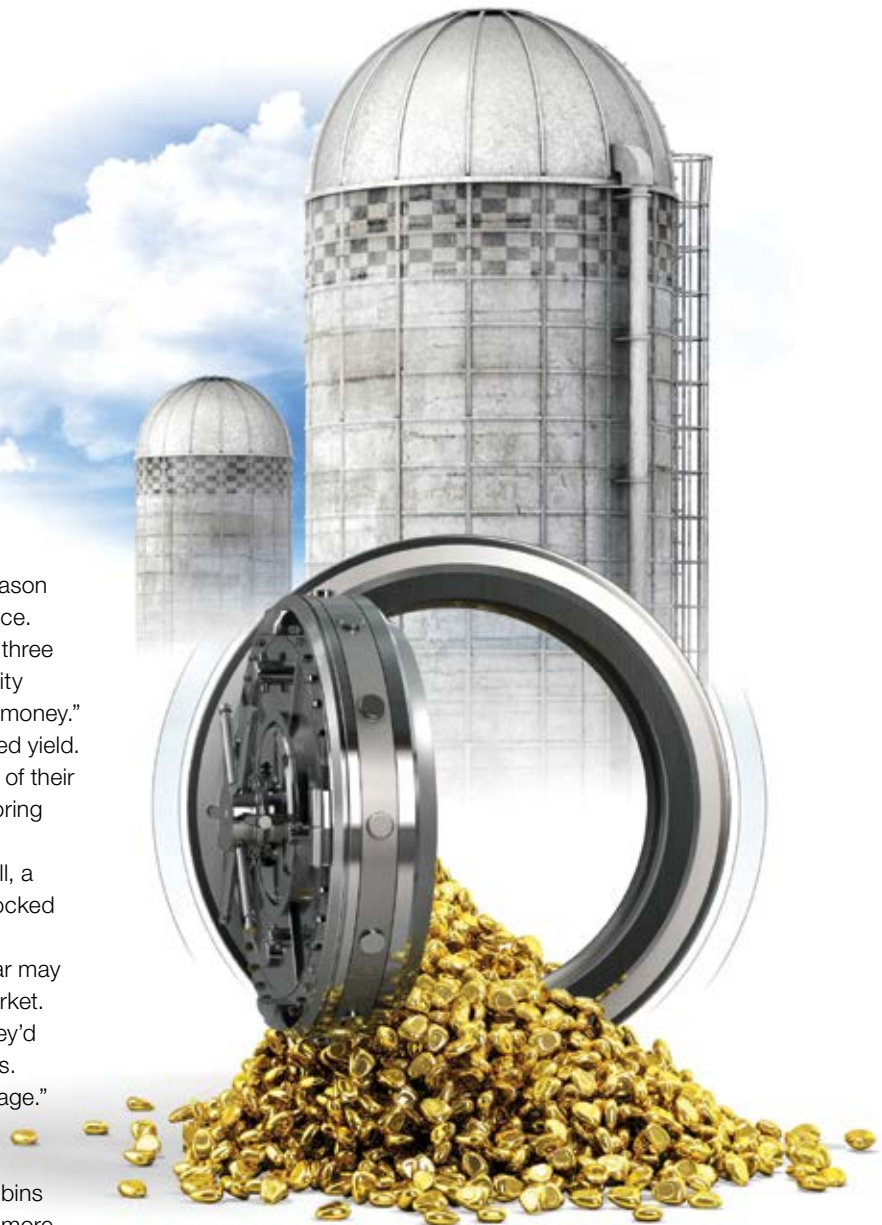
—CRAIG ABELL

The potential downsides of storage bin ownership include the cost (financing may be available from the Farm Service Agency) and the time needed for maintenance and monitoring.

Another on-farm option is the one-time-use plastic bag. “If you have a big crop, it’s a really economical way to have temporary storage, compared to a \$250,000 grain bin,” Abell says. And for growers who rent

acreage, renting on-farm storage space may be possible.

For off-farm storage, investing in condominium storage space or renting storage space built by commercial elevators are two alternatives. Elevators can usually build storage space at a lower



per-unit cost than a grower can, and the elevator takes on maintenance duties. "But condo storage offered by commercial elevators has become less popular in the last few years, probably because of ethanol becoming more important," Edwards says. "Farmers don't want grain tied up at an elevator and to be committed to selling to that elevator. They want more flexibility."


### Storage Challenges

With all the potential benefits to storing grain, why isn't everyone doing it? The biggest challenge, aside from the cost to build or rent the storage infrastructure, is managing stored grain throughout the winter and spring to minimize spoilage.

"On the farm, you're responsible for it," Edwards says. "Last fall was challenging; it was very wet and the harvest was late. Farmers were faced with decisions about harvesting at high moisture and then drying, or leaving it in the field, waiting for it to dry down and risking the weather turning."

In his Minnesota region, the cold winters can make for good storage conditions, Spence says. "But some people don't look at the grain until the next summer. They use the 'snow method.' If there's snow on the roof, they think the grain's OK. But I say, 'If the bin had \$100 bills in it instead of corn or soybeans, you'd be looking at it every day.' You've still got to monitor it and know when to turn the fans on and what moisture to store it at."

Abell compares on-farm storage to having children on the farm. They both require care. "The mechanical things have to be managed; you need to check the grain every 10 to 14 days. You have to service the fan, the dryer, the spreader. It seems basic, but I can't tell you how many situations I've seen where the bin is full of grain and then the dryer won't work."

Ultimately, the best storage option or combination of options for a grower will depend on the relative costs and how each fits into a farm's overall system, which is the most important point to remember, Edwards says. "Don't look at storage in isolation," he says. "Make sure harvesting, storage and transportation all fit together."  STORY BY SUZANNE BOPP

**FOR MORE INFORMATION**, please visit these websites:

- > "Grain Drying Energy Efficiency Checklist and Tips," [www.extension.org/pages/31542/grain-drying-energy-efficiency-checklist-and-tips#.U7K77BbjJFI](http://www.extension.org/pages/31542/grain-drying-energy-efficiency-checklist-and-tips#.U7K77BbjJFI)
- > "Grain Handling Specialist Offers Tips for Protecting Stored Grain," [www.purdue.edu/newsroom/releases/2013/Q4/grain-handling-specialist-offers-tips-for-protecting-stored-grain.html](http://www.purdue.edu/newsroom/releases/2013/Q4/grain-handling-specialist-offers-tips-for-protecting-stored-grain.html)
- > Grain Storage Investment Comparison, [www.extension.iastate.edu/agdm/decisionaids/dscd.html](http://www.extension.iastate.edu/agdm/decisionaids/dscd.html)
- > "13 Grain Bin Checkup Tips," [www.agriculture.com/crops/grain-handling-and-storage/grain-bins/13-grain-bin-checkup-tips\\_184-sl33071](http://www.agriculture.com/crops/grain-handling-and-storage/grain-bins/13-grain-bin-checkup-tips_184-sl33071)

Help growers take a stand  
against soybean cyst nematodes.



As soybean cyst nematodes have adapted to the most widely used source of genetic resistance, growers increasingly need effective, season-long protection against SCN. Help your customers take back control with Clariva™ Complete Beans, the only seed treatment proven to offer direct and lethal activity against SCN to maximize yield potential. Clariva Complete Beans helps minimize hidden and costly damage from SCN independent of environmental conditions, and builds on the unsurpassed early-season insect and disease protection that growers trust from market-leading CruiserMaxx® Beans with Vibrance® seed treatment.

Contact your Syngenta representative  
or visit [ClarivaCompleteBeans.com](http://ClarivaCompleteBeans.com) and  
help growers take back their fields.

 **Clariva™ Complete Beans**

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# Seeds

**Innovative seed treatments protect growers' investments in traits and help deliver higher yield potential.**

*By Darcy Maulsby*

# entries



Syngenta Sales Representative Marc Oostenink (left) and Sheila Hebenstreit, field sales agronomist with Farmers Cooperative Company, examine a soybean crop in Boone, Iowa.

**R**etailers and other seed experts realize that growers only have one chance to give their valuable crops the best start possible. That's why Sheila Hebenstreit, a field sales agronomist with Farmers Cooperative Company in Gowrie, Iowa, is such a big believer in seed treatments.

"I consider seed treatments to be a best-management practice," says Hebenstreit. "They contribute to healthier plants, which give growers the best opportunity for higher production."

Hebenstreit is also an advocate for early soybean planting, which has the potential benefit of higher yields. "I know the weather doesn't always cooperate, especially if it's wet and cool. That's why I don't like to see any soybean seed leave our facility without at least a fungicide treatment."

The market continues to grow for seed treatments, which provide a safer, sustainable, targeted way to deliver crop protection. Five years ago, approximately 50 percent of the U.S. soybean crop was treated, notes Tim Kroenke, head of Seedcare for Syngenta. By 2013, around 80 percent of U.S. growers reported treating their soybeans with an insecticide/fungicide seed treatment. "We see more room for growth," adds Kroenke, who believes the overall percentage of treated soybeans could rise by more than 10 percentage points in the near future.

As seed prices increase and new trait technologies promise higher yields and better agronomic performance of seeds, more retailers are prescribing seed treatments and more growers are relying on them to protect their valuable investments. A recent survey from CropLife America notes

that seed treatments helped contribute to nearly \$80 billion worth of value for American corn growers in 2011, through increased protection and greater crop yields. In addition, modern seed hybrids combined with effective seed treatments can provide a nearly 100 percent crop stand, according to the same survey. That's why most seed companies now treat all corn hybrids with a comprehensive package of seed treatment products to ensure top performance under variable growing conditions.

"There's no question that today's seed treatments are helping America's growers achieve greater yields and healthier crops, while reducing potential risks to the environment," says Andy LaVigne, CEO/president of the American Seed Trade Association.

### The Evolution of Seedcare

As growers increasingly invest in seed treatments, especially for soybeans and cereal crops, more retailers continue to add seed treatment equipment to their operations. This allows them to tailor seed treatments to their growers' unique needs, Kroenke says. This flexibility has become more important as seed treatments have become more intensive, evolving from fungicides only to fungicide/insecticide combinations and fungicide/insecticide/nematicide treatments that help protect growers' profit potential.

"As Syngenta develops new seed treatments, it's important that we deliver solutions that allow growers to secure a valuable return on their seed treatment investment," Kroenke says.

University research studies have shown the value of Syngenta seed treatments. Shawn Conley, Ph.D., a University of Wisconsin Extension soybean and wheat specialist, and his colleagues put Syngenta soybean seed treatments to the test in 2012 and 2013. They researched nine Wisconsin locations planted in 15-inch rows within the first three weeks of May. "Our studies found differences in yield, profitability and economic risk due to seed treatment and seeding rate," Conley says.

Researchers discovered that reducing seeding rates when using no seed treatment or a fungicide-only seed treatment may be too risky and provided minimal profit gains. In contrast, the study showed that CruiserMaxx® Beans, a fungicide/insecticide seed treatment combination from Syngenta, reduced economic risk and increased profits across an array of environments, seeding rates (80,000 to 140,000 seeds/acre) and grain sale prices (\$9/bushel and \$12/bushel).

"We work hard to develop innovative, convenient seed treatment solutions to get crops off to a strong, healthy



**"We work hard to develop innovative, convenient seed treatment solutions to get crops off to a strong, healthy start."**

—DANA STUBBENDECK

Soybean leaves in the early-morning light

start,” says Dana Stubbendeck, a Seedcare key account lead for Syngenta.

### Providing New Solutions

Several of these new solutions have transformed the seed treatment market, Stubbendeck says.

- > **Vibrance**<sup>®</sup> seed-applied fungicide defends roots against a wide range of pathogens, including devastating soilborne diseases like *Rhizoctonia* root rot, which is the No. 2 soybean disease behind *Pythium*. “*Rhizoctonia* doesn’t normally kill the plant but damages tiny root hairs,” Stubbendeck says. “This damage hinders the plant’s ability to take up water and nutrients. Vibrance protects roots to enhance emergence and plant growth, resulting in more consistent and higher yields.”
- > **Avicta**<sup>®</sup> Complete Corn nematocide/insecticide/fungicide seed treatment offers triple protection against nematodes as well as early-season insects and diseases. “This seed treatment combination provides comprehensive early-season protection up to V5 or V6, which sets the crop up for higher yield potential since much of it is determined early,” Stubbendeck says. In 2015, Syngenta will add Vibrance to the Avicta Complete Corn package and will treat all new U.S. corn seed production with this powerful combination.
- > **Clariva**<sup>™</sup> Complete Beans is a nematocide/insecticide/fungicide seed treatment combination of separately registered products that protects soybeans against soybean cyst nematodes (SCN), all the major early-season insects, as well as diseases, such as *Rhizoctonia*, *Fusarium*, *Pythium*, and *Phytophthora*. It includes a revolutionary nematocide that offers season-long protection against SCN, the No. 1 robber of soybean yields in many areas. In fields with moderate-to-high SCN pressure, Clariva Complete Beans consistently improved yields by an average of 4.1 percent, compared with an insecticide/fungicide check.

This is good news for Hebenstreit, who considers SCN to be one of the biggest yield robbers in her area. “Clariva Complete Beans is a perfect fit for growers who face SCN challenges but want to keep soybeans in their rotation,” she says.

Hebenstreit also appreciates the technical support she receives from the Syngenta team, including Marc Oostenink, her local sales representative. “We will continue to offer innovative solutions and are committed to supporting our retailers,” says Oostenink, who is based in central Iowa.

This support includes industry-leading training for those



### Sharing the Art and Science of Treating Seed

There’s a science and an art to maximizing the value of seed treatments. That’s why Syngenta supports a global Seedcare Institute network to provide customized training for retailers and seed company employees who work with a variety of crops, including corn, soybeans, wheat, cotton, rice, sunflowers and sugarbeets.

“Our Seedcare Institutes are centers of excellence for product application, training, seed science and biology, says Palle Pedersen, Ph.D., Seedcare technology manager for Syngenta. “We’re continuing to expand our facilities as our Seedcare business continues to grow.”

At the state-of-the-art Seedcare Institute in Stanton, Minnesota, Syngenta specialists train customers about the company’s Seedcare products and the right way to use them. “Environmental conditions have a big impact on seed treatments,” notes Pedersen, who is based in Stanton. “We have rooms where we can adjust the conditions to demonstrate what to do and not do for best results.”

In addition to training that helps maintain the integrity and performance of treated seeds, Syngenta team members also listen to customers’ needs. They develop customized “recipes” for high-quality seed treatments that offer proven results, seed safety and ease of use, including improved flowability and less dust. “We stay very busy year-round,” Pedersen says.

This is true throughout the Seedcare Institute’s network of 12 facilities around the world, including its three major locations in Minnesota, Switzerland and Brazil. An additional four Seedcare Institute facilities are slated to open in the near future, says Pedersen.

“New seed treatment solutions that are coming down the pipeline at Syngenta are very exciting,” Pedersen adds. “We’re currently working on new fungicides, insecticides and nematocides that will significantly improve the products’ efficacy and period of protection. These seed-applied solutions will set the farmers of the future up for success.”

retailers and other ag professionals who treat seed. “We are always looking for ways to increase the intensity and utility of our service to retailers,” says Bruce Howison, head of the Syngenta Seedcare product line. “A part of that service is providing hands-on training when it comes to physically applying the treatment to the seed.”

For all retailers, whether they offer onsite treating services or not, Stubbendeck says Syngenta will make sure they have the knowledge they need to prescribe the best Seedcare solution for each grower’s field. “We’ve focused on seed treatments for 35 years and will continue to develop the most robust seed treatments on the market to help maximize yields.”



# DESIGNER VEGGIES

Commercial and home garden vegetable teams are bringing breeding breakthroughs to market. | *By Michael Johnson*

**T**he sweet aroma of a juicy tomato. The waxy feel of a fresh-picked bell pepper. The weight of the season's first seedless watermelon in your arms. These are some of the sense-inducing rewards that come from picking the harvest you worked so hard to grow.

Whether it's a large commercial grower producing multiple vegetable crops on thousands of acres or a back-porch gardener tending tomatoes out of a container, the feeling of pride that results from a bountiful season is the same.

"Home gardeners want to bring the farmer's market to their backyards," says Jeannine Bogard, business lead for home garden vegetables at Syngenta. "And we want to help make that possible."

At the same time, commercial growers want to deliver something unique and appealing that consumers will demand at their local grocery stores. "We understand this goal," says Scott Langkamp, Syngenta head of vegetables. "Our breeders continuously seek new ways to help growers deliver innovative varieties that directly address supply chain needs and consumer preferences."





### Understanding the Market

Through deep-rooted experience, both the Syngenta commercial and home garden vegetable teams glean valuable insight into the needs of the grower, the home gardener and the consumer.

“One of the biggest drivers in home gardening is innovation,” says Bogard. “‘New and different,’ and ‘better and improved’ are phrases that grab the market’s attention.”

Not surprisingly, the biggest drivers for commercial growers are the same. Like home gardeners, growers are seeking high yields, easy-to-grow plants and a robust disease-resistance package to be successful. Syngenta understands that consumers have a large influence on which traits are developed and introduced for commercially grown vegetables; however, the needs of growers play an equally important role.

“There’s always a balance between the grower and the consumer,” says Motti Schramm, pepper and tomato portfolio manager for Syngenta. “And, in fact, the breeder needs to address both.”

A Syngenta researcher evaluates pepper plants in Naples, Florida.



**“Syngenta is the culmination of numerous mergers and acquisitions over the years. It’s one of the reasons why we are able to provide best-in-class genetics to every vegetable line in our portfolio.”**

—JOHN DAVIS

## Good Things Come in Small Containers

It may take acres of land to operate a commercial farm, but you only need a small container to grow your own vegetables. Container gardening is a growing trend and a feasible hobby, even for city dwellers. Syngenta is working with big-box stores like Walmart, The Home Depot and Lowe's Home Improvement to make vegetable transplants readily available for the next generation of home gardeners. In many instances, transplants are already in containers.

"We have a whole generation who has no experience with gardening," says Jeannine Bogard, business lead, home garden vegetables at Syngenta. "Their grandparents and parents didn't garden, so the most logical place to start is at the big-box stores, where this generation does its grocery and home-improvement shopping."

Syngenta is currently running a container trial called How Small Can You Grow, in which growers are able to see how

well Syngenta vegetable varieties perform in various-sized containers. "It's kind of like recreating the garden and how people plant in a different context," Bogard says. "We look at container vegetables as being a gateway to gardening. We need to reach out to these newbie gardeners and show them how fulfilling it can be." This hands-on experience with plants among general consumers also may bring a greater appreciation of what growers bring to the table, she notes.



A colorful Syngenta display at the California Spring Trials event shows how home gardeners can grow vegetables and ornamentals in the same container.

While consumers are demanding important traits, such as flavor, color and shape, commercial growers are also focused on other traits, including improved disease resistance, yield, vine holding and shelf life. It's these traits that address their needs as well as the needs of each link in the supply chain, from the packager and shipper to the consumer. For example, Syngenta currently has plans to bring a pepper with highly desirable disease resistance to tomato spotted wilt virus to the western U.S. market.

"Our breeders are aiming for a variety that will be more adaptable, better yielding and have better fruit quality than anything else on the market," says Schramm.

### It's All About the Genetics

Both teams can trace each market success to the same winning formula: hiring the best breeders, adopting the most innovative techniques and developing some of the most advanced gene pools in the world.

"Syngenta is the culmination of numerous mergers and acquisitions over the years," says John Davis, active greenhouse portfolio manager at Syngenta. "It's one of the reasons why we are able to provide best-in-class genetics to every vegetable line in our portfolio."

On the commercial side, that commitment was recently illustrated by the acquisition of lettuce germplasm from Eagle Research & Development Inc. "Our intent with this acquisition was to bolster our iceberg germplasm, broadening the possibilities for desirable crosses," says Rick Mitchell, vegetables business manager for Syngenta.

Dave Williams, former owner of Eagle Research & Development, spent nearly 40 years breeding lettuce for the California and Arizona markets, making significant contributions along the way. For instance, he helped enhance tipburn resistance in lettuce, a trait that provides strong market appeal. "His breadth of experience, knowledge and insight into the market is extremely helpful to us," adds Mitchell.

Syngenta commercial breeders are also making progress in how they address consumer preferences through the introduction of varieties focused on convenience. For example, the company plans to introduce the Angello™ snacking pepper, already popular in Europe, to the U.S. in the near future.

"Angello is a global example of how Syngenta is innovating," says Davis. "People want healthier food alternatives, but they don't have a lot of time anymore.



If you go to the grocery store and see a nice package of produce that's ready to eat, whether small grape tomatoes or maybe snacking peppers, that's so much more convenient than taking home a full-sized bell pepper and preparing it."

Unrivaled science, technology and genetic background led to the development of superstar Syngenta watermelon variety Fascination.

### Seizing Seedless Opportunities

Similarly, Syngenta is pushing the envelope when it comes to breeding seedless watermelons. Dean Liere, watermelon portfolio manager at Syngenta, recalls how they were originally introduced. "Our breeders saw something unique with consumer benefits, quality and disease resistance that they could use to differentiate our line in the marketplace," he says. "Today, the demand for seedless varieties has skyrocketed, and Syngenta continues to lead the way in introducing advanced, innovative offerings to commercial growers."

A case in point is Fascination, a Syngenta seedless watermelon variety, first introduced in 2010. Liere reports that 2013 sales exceeded all expectations, and Fascination is now the No. 1 seedless variety in the U.S. "With Fascination, we've used our background, our science and our technology to create something that the market demanded."

Whether introducing varieties for the commercial or home garden grower, Syngenta vegetable experts deliver market breakthroughs that are helping to feed the world, one harvest at a time. "There's a reason we have become market leaders in vegetable innovations," Liere says. "It's not because our varieties look so different. It's because they are so different—very uniquely different." 🍉



"Our breeders continuously seek new ways to help growers deliver innovative varieties that directly address supply chain needs and consumer preferences."

—SCOTT LANGKAMP

# NEMATODE



# KNOW-HOW

**A cutting-edge tool in the SCN management toolbox reaps positive results for soybean growers.**

*By Kara Kotecki*



**Left to right: Brett Goecke, Syngenta Seed Advisor; Roger Elmore, grower; and Mitch Lobeck, Syngenta sales representative, examine soybean plants in Gladbrook, Iowa.**



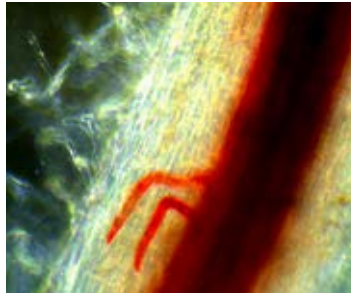
“Roots are of equal importance to the health of the plant above ground. Without strong roots, the foliage will suffer, leading to potential yield loss.”

—GREG TYLKA



Clockwise from top left: SCN damages soybean roots; new seed treatment with game-changing nematicide offers hope; SCN juveniles invade soybean root.

Like many soybean growers, Roger Elmore of Gladbrook, Iowa, has battled soybean cyst nematode (SCN) on his 1,230-acre farm for years. But the story of his struggle against this below-ground pest took a dramatic turn for the better in 2014, when a revolutionary seed treatment from Syngenta became commercially available.



Clariva™ Complete Beans seed treatment, a combination of separately registered products, provides direct, lethal, season-long protection against SCN, a pest that costs U.S. growers \$1.5 billion annually. It also includes the market-leading insect and disease protection of CruiserMaxx® Beans with Vibrance® seed treatment—separately registered products that help shield soybeans against damage from all major early-season insects, as well as diseases, such as *Rhizoctonia*, *Fusarium*, *Pythium* and *Phytophthora*.

“Clariva gives my soybeans the protection they need when and where they need it,” Elmore says. “It’s an investment I can’t afford not to make.”

Because the treatment is on the seed, Clariva Complete Beans starts working beneath the soil surface, where crop emergence begins. That’s important, notes Greg Tylka, Ph.D., because SCN live and multiply underground. “SCN is a hidden culprit that can cause significant damage to the roots,” says Tylka, professor and nematologist at Iowa State University. “By the time above-ground symptoms are visible, SCN numbers often have increased to very high levels.”

### Root of the Problem

Without healthy, vigorous root systems, soybean plants lack the foundation to fully grow and develop. “Roots anchor the plant to support the pods and seeds,” Tylka

says. “Essentially, they are the lifeline of the plant, providing minerals, nutrients and water from the soil.”

While it’s easy to recognize and identify the importance of healthy leaves for photosynthesis, Tylka has found that the role of the root system is often overlooked, probably because of its limited visibility. “Roots are of equal importance to the health of the plant above ground,” he says. “Without strong roots, the foliage will suffer, leading to potential yield loss.”

Not only do vigorous root systems make for better nutrient and water uptake from the soil, but they also increase the resiliency of the plant. Enhanced crop development triggered by strong root systems helps soybean plants better withstand environmental stresses, including drought, wind and heat. It’s simple: the stronger the roots, the stronger the plant, the higher the yields.

Root systems are compromised when SCN enters the picture. SCN-infected roots are smaller, and as the passageway for nutrition shrinks, the probability of yield loss increases. In the soil, SCN juveniles hatch from eggs, find a point of entry to the root and begin feeding on it. Adult females continue feeding on the root. As their bodies swell, they burst through the root’s outer layer. Injury caused by this SCN invasion stunts growth and increases the soybean plant’s susceptibility to other soilborne pathogens.

## Game Changer

Unfortunately, Elmore has witnessed the telltale signs of SCN on his farm more times than he'd like to remember. Over the years, the withdrawal of older chemical solutions has left a huge gap in his SCN management plan—until 2014 when Clariva Complete Beans became a game-changer on his farm. "I planted 100 percent of my soybean acres with Clariva Complete Beans," he says. "Hands down, it was the best management decision I made all season."

Like any grower, Elmore wanted proof that his investment was reaping positive results. To check on the seed treatment's performance, he pulled a few soybean plants out of the ground. "The root system appeared more robust, more vigorous, with more nodulation," he says. "The results I saw confirmed what my Syngenta sales representative said about Clariva: unmatched root protection."

Thanks to the triple pest protection of Clariva Complete Beans, Elmore could see an obvious difference between his acres and the surrounding fields. "I noticed yellowing in my neighbor's soybeans, while my plants remained healthy and green," he says. "It proves to me that Clariva is doing its job, even above ground. I have observed overall faster emergence and better stand in my fields with Clariva."

Following the recommendations of Tylka and other soybean experts, Elmore practices an integrated pest management strategy to combat SCN pressure in his fields. He rotates his corn and soybean acres and plants SCN-resistant varieties, but it's Clariva Complete Beans that has made the most noticeable difference.

"I don't know why anyone wouldn't treat their seed," he says. "SCN populations are a problem for the majority of soybean growers, and Clariva is an easy way to enhance the performance of the plants and reduce the stress from the nematode. I'm happy with the seed treatment's performance and am most certainly treating all of my soybeans with Clariva again in 2015."

Dale Ireland, Ph.D., soybean and corn Seedcare technical product lead for Syngenta, echoes Elmore's confidence in the performance of Clariva Complete Beans. "2014 has been a fantastic growing season and continues what we have seen since field testing began in 2010," he says. "Root size, root mass and above-ground biomass of the soybeans treated with Clariva show improvement compared to nontreated soybeans."

## Trendsetters in Corn

Root health is important in maximizing the yield of any crop. One of the first steps in stimulating root health in corn is finding a way to successfully manage nematodes.

"Passively dealing with nematode pressures through conventional measures is no longer sufficient," explains Bruce Howison, head of the Seedcare product line for Syngenta. "The problem of nematodes in corn is getting worse, so we need to take an active approach."

Beginning in 2015, Syngenta seed brands, including Golden Harvest®, NK® and Enogen®, will lead the trend in treating all corn seed with a nematicide. The treatment of choice is Avicta® Complete Corn nematicide/insecticide/fungicide, a convenient, seed-delivered technology that works instantly to protect corn seedlings. This move will especially benefit growers with a corn and soybean rotation.

"Most of the products currently available simply repel nematodes," says Howison. "That's why Avicta Complete Corn is so exciting. It's not merely a repellent, but rather a lethal substance to the nematode."

Because multiple nematode species invade corn crops, Avicta Complete Corn is a particularly good fit, Howison adds. "Avicta



Grower Roger Elmore inspects an ear of corn.

technology is built to target all early-season nematode species for effective, broad-spectrum pest protection," he says. "As a result, crop damage decreases while yield potential increases."

To promote even stronger root systems, Syngenta has added Vibrance® fungicide seed treatment with best-in-class *Rhizoctonia* protection to the already robust Avicta Complete Corn package, just in time for the 2015 planting season. For more information, visit [www.avictacomplecorn.com](http://www.avictacomplecorn.com).

## Yield Booster

As a result, yields are increasing as well. "When using Clariva under SCN pressure, we've seen more than a 4 percent yield increase compared to the check treatment over the last several years of field testing," explains Ireland. "And well over 75 percent of our customers have experienced a yield increase compared to a check."

Pushing past the yield ceiling is the goal of any grower in any field. "I incorporate the Syngenta product portfolio in all of my corn and soybean acres," says Elmore. "Its products are a good fit for my fields, regardless of pest pressure. That's certainly true for Clariva Complete Beans. With this advanced seed treatment, I have an increased level of SCN protection in my fields and anticipate bumps in yield season after season." 🌱

**FOR MORE INFORMATION**, please visit these websites:

- > Clariva Complete Beans product page and animation, [www.ClarivaCompleteBeans.com](http://www.ClarivaCompleteBeans.com)
- > Soybean Insider, [www.FarmAssist.com/SoyInsider](http://www.FarmAssist.com/SoyInsider)
- > Soybean Virtual Classroom, [www.Soybeans.FarmAssist.com](http://www.Soybeans.FarmAssist.com)



# Rules of the Game

The 2014 farm bill changed many policies regulating agriculture, creating new opportunities and new challenges.

**T**he long-awaited Agricultural Act of 2014, commonly referred to as the 2014 farm bill, sets forth policies that create opportunities and challenges for both growers and their industry partners, set within a framework of overall reduced agricultural spending. A new farm bill always brings with it the chance for growers to re-evaluate their program participation, and the choices growers make this fall will impact their operations for years to come.

Bruce Knight, principal and founder of Strategic Conservation Solutions, sees the trends in the 2014 farm bill—fewer government mandates and more grower choice—as positive, but says the decision-making process for farmers on whether or not to participate is more complicated.

In the past, growers could walk into their local USDA Farm Service Agency (FSA) office, explain their situation,

and be told, “You have choices, but ‘B’ is the best choice.”

But Knight says, “This doesn’t feel the same way now. FSA folks may not be able to assist farmers in making decisions like they have in the past. These decisions are complicated and personal to each operation.”

## Opportunities for Growers and Retailers

Changes in the 2014 farm bill’s conservation title mean the Conservation Reserve Program (CRP) total-acreage cap will be reduced from the statutory level of 32 million acres to 24 million acres over five years.

Knight says the reduction will make more than 5 million acres nationwide available for grazing or farming. He’s seen a steady outflow movement of higher-quality land that had been enrolled in CRP but probably didn’t really need to be in the program.



Younger farmers looking for land or those who want to expand should benefit as those acres return to production. “Access to resources, such as land, that are scarce is a huge opportunity for both retailers and growers,” he says.

The 2014 farm bill also provides an opportunity for retailers to help qualify growers for conservation programs like the Conservation Stewardship Program, which helps growers adopt or maintain conservation practices to address resource concerns. Now that retailers are designated as “eligible” partners, they can help their customers comply with those conservation programs.

“This is really big,” explains Rex Martin, head of external affairs for Syngenta. “Ag retailers have wanted to do this for a long time.”

### Challenges Ahead

Many in the agricultural community were hoping the 2014 farm bill would address how the Clean Water Act affects certain pesticide applications. Although the House version of the bill included a provision to eliminate the need for permits to apply certain aquatic pesticides, the Senate version did not. Ultimately, the provision was not included in the final bill. The Federal Insecticide, Fungicide, and Rodenticide Act already regulates the pesticides in question. Failure to include the provision in the farm bill was a large loss, Martin says.

“The farm bill was a great opportunity to get that through,” he explains. “However, we are still pursuing passing it as a solo bill.”

But the details of the greatest challenge facing agriculture from the 2014 farm bill are still to come. At press time for this publication, the USDA was still in the process of writing the final rules that will determine how the agency implements two traditional farm programs that the 2014 farm bill reformed—Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC).

Given the pace of rule-making and then training USDA employees, it is likely growers will be making the one-time, irrevocable decision to enroll specific commodities in these programs during harvest. Winter wheat growers may have to plant their 2015 crop without first seeing the final rules.

The success of Average Crop Revenue Election (ACRE), the revenue protection program in the previous farm bill, has made farmers more accepting of revenue safety net programs, says Jon Doggett, vice president for public policy with the National Corn Growers Association.

## HIGHLIGHTS OF THE NEW FARM BILL



### Trade

Reauthorizes **\$200 million** a year for **international market development**.



### Renewable Energy

Continues **\$880 million** authorization for **energy program** established in 2008 farm bill.



### Conservation

Ties basic **conservation practices** to **crop insurance premium subsidy** for highly erodible lands and wetlands.



### Next-Gen Farmers and Ranchers

Underwrites **Beginning Farmers and Ranchers Development Program** with **\$100 million**.


Yet they still need to take the time to become familiar with ARC and PLC—once the USDA announces the final rules—to learn how these programs differ from ACRE. ARC covers losses at either the individual farm level or at the county level. PLC provides payments when the price of a crop drops below a reference price.

Doggett also encourages growers to ask what crop insurance products are available (growers who elect ARC cannot purchase Supplemental Coverage Option Insurance), how the programs will fit with their operations and, if applicable, what their landlord prefers. Producers also need to be clear about what risks they are attempting to manage—price, yield or quality.

“Price is important, but revenue is what keeps the operation in business,” Doggett says. “A target price doesn’t do any good if you don’t have a crop to sell.”

### Stay Informed

Given the complexity of the decisions growers will be making in the next few months, Doggett and Knight encourage them to talk with crop consultants, extension educators, marketing advisors and financial planners—as well as their local FSA office. Both are optimistic that the 2014 farm bill will be good for agriculture overall.

“This farm bill provides a certain amount of insurance and assurance to both farmers and retailers to be in business, to be bold, to try new things,” Doggett says. “It allows for more innovation when times are good and helps growers and retailers weather the challenges of the really tough times.”  STORY BY CINDY SNYDER

**FOR UPDATES AND TOOLS TO LEARN MORE** about the farm bill, visit [www.usda.gov/farmbill](http://www.usda.gov/farmbill).

This article is intended as information only and not as legal or business advice.

# Vital Connections

Blogs deliver timely, relevant information to an increasingly mobile industry.

**A**g professionals are always hungry for information, and they're looking for it online more than ever. For growers, keeping up to date with weather and pest patterns can mean the difference between a bumper crop or a bust. Syngenta offers several blogs to give its customers reliable resources at their fingertips.

## Knowing More Agronomy

Syngenta agronomists have long created local bulletins for agronomic issues in their areas, but these bulletins were not accessible to everyone, everywhere. Now they are. Launched in 2013, the Know More, Grow More (KMGM) agronomy blog features entries from Syngenta agronomic service representatives from around the country who provide timely, localized updates right from the field. Posts include general crop status updates and recommendations for agronomic issues.

"There is a lot of information out there on the Internet for growers. However, the advantage of KMGM is how quickly our agronomists are able to create entries and publish them online," says Syngenta Agronomic Service Manager Mike Leetch. "It's not just general information but specific advice on specific issues at various times of the season and local geographies." For example, in 2014, agronomists have addressed how to manage alfalfa winter injury in Pennsylvania in the spring, sugarbeet powdery mildew in the Pacific Northwest during the summer and preharvest evapotranspiration in Nebraska in early fall.

With 70 agronomic service representatives at Syngenta, the content on KMGM stays fresh and addresses issues across 20 crop categories and 12 growing regions. Posts

are also sorted by agronomic topics, such as seed selection, resistance management, stress mitigation and harvest. Additionally, site visitors can sign up to receive content specific to their interests with the Know More, Grow More Digest biweekly email.

"KMGM helps growers understand how their crops are interacting with the current environment—not just information about weeds, insects and diseases—but topics like how drought, hail or wet soil conditions are impacting what problems will be in their fields tomorrow," says Nebraska-based Agronomic Service Representative Shawn Hock. "We pride ourselves on getting out the right information at the right time."

The blog is also helping Syngenta reach growers at the local level. "Blogging via Know More, Grow More helps put a 'face' on Syngenta to the growers who use our products," says Glenn Letendre, an Idaho agronomic service representative. "Syngenta aims to help farmers grow more. This blog is a great example of how we are giving them the information they need to do just that, down to the local level." To visit the blog, go to [www.knowmoregrowmore.com](http://www.knowmoregrowmore.com).

## Soybeans From the Inside

While KMGM entries discuss issues impacting a wide variety of crops, Syngenta offers soybean-specific information via its Soybean Insider blog. Posts cover soybean news updates, crop protection application tips, and other general advice from Syngenta agronomists and product managers, as well as university extension experts.

"The Soybean Insider blog provides concise, topical advice on tools and tips for crop management issues,

"My yields were higher with this program."

"What's next for growers in my area?"

"Our local field day will highlight new products."

"Conditions are favoring disease."



such as early-season weed control and tank-mix recommendations,” says Bob Callanan, communications lead for soybeans at Syngenta. “Through these posts, we hope to help growers and those who advise them be more successful.”

Started in 2005 as a newsletter to help address concerns about Asian soybean rust, Soybean Insider eventually broadened its content to include other issues important to growers, retailers, seed treaters and Syngenta employees. Now, the newsletter highlights blog updates and is distributed to more than 5,500 subscribers. Because members of the agricultural industry are increasingly on-the-go, both the blog and newsletters were made mobile-friendly in 2012.

“We have a growing toolbox of resources for our customers to use,” Callanan says. “The Soybean Insider newsletter and blog often stimulate ideas for new ways we can help farmers grow more soybeans.” To start receiving Soybean Insider, go to [www.farmassist.com/soyinsider](http://www.farmassist.com/soyinsider).

### Wheat Growers, Retailers Get Vocal

The Voices 4 Wheat blog ([www.voices4wheat.com](http://www.voices4wheat.com)) offers a different perspective, telling the story of the wheat crop through growers’ and retailers’ firsthand experiences from the main wheat-growing geographies. This blog, which began in 2009, helps the general public understand professional farming, and, like KMG, it puts a “face” on ag professionals in the field.

One of those faces belongs to Jenny Rohrich, who farms wheat and other crops with her husband, Mark, in Zeeland, North Dakota. Posts on her personal blog about relocating from California to join him went viral, and the exposure helped her connect with other social media-savvy agriculturalists. “Our partnership with Syngenta through the blog helps us reach out to other growers who may benefit from our experiences growing wheat, such as late planting in 2014 or deciding when to harvest,” Rohrich says.

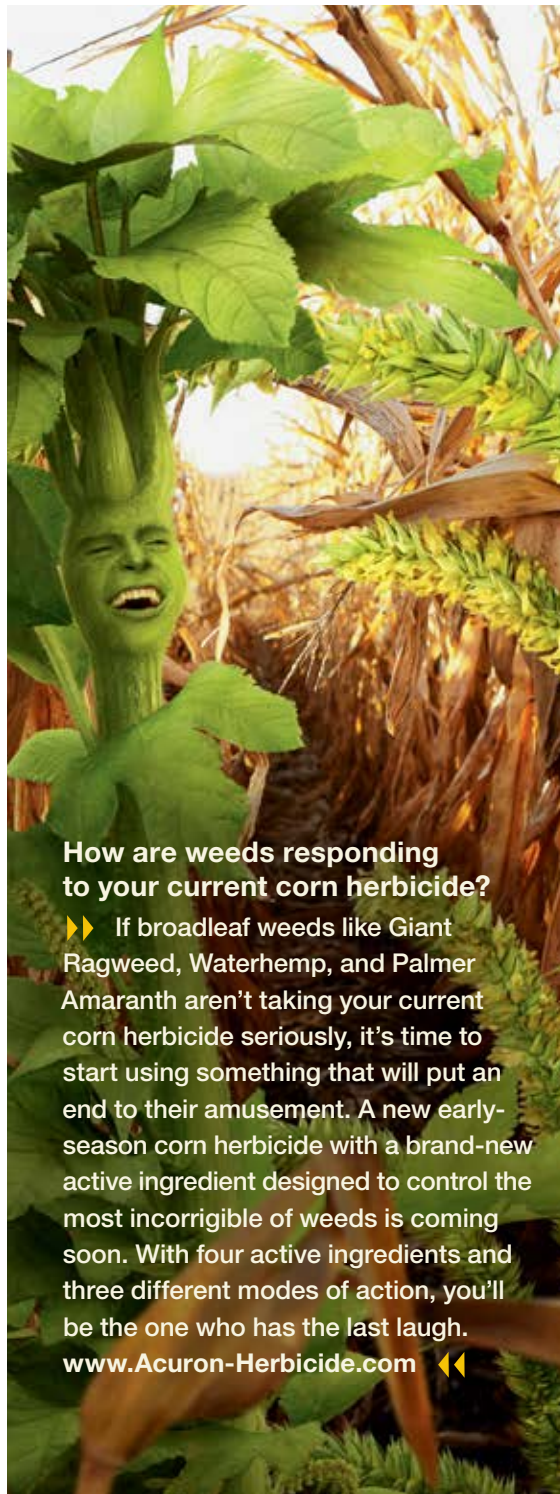
Other current Voices 4 Wheat bloggers are growers Danny Schnitker from Illinois and repeat blogger Mike Miller in Washington state, as well as Seed Retail Coordinator Daryl Wacker from Kansas. Syngenta remodeled the website, formerly Voices Across the Plains, in spring 2014. Readers can now join the conversation online by leaving comments or using the #Voices4Wheat hashtag on Twitter.

### Different Voices, Same Vision

While the focuses of Syngenta blogs vary, the end goal is the same: Provide timely, useful information for readers to digest.

“Smartphones were once targeted to business executives and teenagers,” Letendre says. “That’s not the case anymore. At Syngenta, we are working to make new mobile connections with growers, retailers and other industry professionals, so we can give them the agronomic tips and product information they need when they need it.”

STORY BY JOE VAILLANCOURT



### How are weeds responding to your current corn herbicide?

▶▶ If broadleaf weeds like Giant Ragweed, Waterhemp, and Palmer Amaranth aren't taking your current corn herbicide seriously, it's time to start using something that will put an end to their amusement. A new early-season corn herbicide with a brand-new active ingredient designed to control the most incorrigible of weeds is coming soon. With four active ingredients and three different modes of action, you'll be the one who has the last laugh. [www.Acuron-Herbicide.com](http://www.Acuron-Herbicide.com) ◀◀

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TM



# Ripple Effect

Syngenta supports agriculture through initiatives designed to enhance productivity, educate and build key infrastructure.

## PROGRAM UPDATES

### > Syngenta Takes on the Weather

An ongoing drought in California. A hard freeze along the East Coast this spring. Weather, which greatly impacts a farm's profit, is the one factor that is largely beyond the grower's control when it comes to good crop management. Abiotic stresses, such as drought, heat and cold, reduce agricultural potential for growers by at least \$100 billion globally per year. In 2012, drought alone cost growers more than \$40 billion\* globally. These statistics clearly indicate that the agriculture industry must make variable weather conditions a key area of focus to help growers mitigate risks.

At Syngenta, Crop Enhancement is the global business centered on making plants more resilient to environmental stresses, including drought, heat and cold. It features a portfolio of Syngenta products and solutions that affect the physiology and metabolism of plants so that they can endure and recover faster from adverse weather conditions.

Crop Enhancement will help growers maximize yields and minimize risks, despite the weather. As a result, it will contribute to increasing the average productivity of the world's major crops by 20 percent. This goal is one of the core commitments of The Good Growth Plan ([www.goodgrowthplan.com](http://www.goodgrowthplan.com)), which Syngenta has launched to address the critical challenge of feeding a growing global population.

Look for more detailed information on how Crop Enhancement is tackling challenging weather conditions in upcoming issues of *Thrive*.

\*Source: Syngenta, "Our Industry 2014" report.



Crop Enhancement focuses on specific abiotic stresses and regional needs.



## >> Syngenta Backs Flex-Fuel Infrastructure

Syngenta recently donated \$108,000 to the renewable fuels industry to help make flex fuels more widely available through the expansion of flex-fuel pump infrastructure. The donation is part of a three-year commitment announced in 2013 to contribute \$1 to the ethanol industry for every acre planted with Enogen® corn enzyme technology.



“Syngenta is pleased to continue its support of the

ethanol industry,” says David Witherspoon, head of renewable fuels at Syngenta. “In 2013, the money was used to defend the Renewable Fuels Standard. The focus of the 2014 donation is to make flex fuels more accessible and provide consumers with a choice at the gas pump.”

According to Growth Energy, an ethanol advocacy organization, more than 170 million cars manufactured since 2001 are eligible to use E15, and more than 16 million flex-fuel vehicles are on the roads today, with more on the way. “The widespread availability of flex-fuel vehicles as well as those cars eligible to use E15 demonstrates that there is a market ready for a less expensive, higher octane, more environmentally friendly alternative fuel,” Witherspoon says. For more information, go to [www.enogen.net](http://www.enogen.net).

## EDUCATION

### > North American Root Health Forum

The Syngenta North American Root Health Forum in Vero Beach, Florida, will give Syngenta Seedcare experts and university researchers the chance to share insights about how key soilborne and seedborne diseases impact root health. Participants, including representatives of key Seedcare accounts, also will learn how seed treatments from Syngenta can contribute to enhancing RootingPower in a variety of crops.

“At Syngenta, we know that increased crop productivity lies in the plant’s root system,” says Kris Pauna, North American Seedcare product lead for Syngenta. “We look forward to sharing our latest research on root health and showcasing our technologies through field and other demonstrations at our Vero Beach Research Center.”

This North American event is the latest in a series of global root health forums sponsored by Syngenta. To learn more about root health and receive one CCA credit, complete our online training module at <http://bit.ly/RootHealth>.

# thrive

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### Cautionary Statement Regarding Forward-Looking Statements

This document contains forward-looking statements, which can be identified by terminology such as ‘expect,’ ‘would,’ ‘will,’ ‘potential,’ ‘plans,’ ‘prospects,’ ‘estimated,’ ‘aiming,’ ‘on track’ and similar expressions. Such statements may be subject to risks and uncertainties that could cause the actual results to differ materially from these statements. We refer you to the publicly available filings of Syngenta with the U.S. Securities and Exchange Commission for information about these and other risks and uncertainties. Syngenta assumes no obligation to update forward-looking statements to reflect actual results, changed assumptions or other factors. This document does not constitute, or form part of, any offer or invitation to sell or issue, or any solicitation of any offer, to purchase or subscribe for any ordinary shares in Syngenta AG, or Syngenta ADSs, nor shall it form the basis of, or be relied on in connection with, any contract therefore.

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# » Flower Power

A partnership between Syngenta and Delta F.A.R.M. will create habitats to promote pollinator health in the Mississippi Delta.

There's something reassuring about bees buzzing and butterflies floating above a colorful patch of wildflowers growing in an agricultural landscape. That's because a diverse habitat with a healthy population of pollinators helps support agriculture. Enhancing biodiversity is one of six key commitments of The Good Growth Plan from Syngenta, aimed at sustainably increasing global farmland productivity.

Less than a year since announcing The Good Growth Plan, Syngenta has joined with Delta F.A.R.M.—an association dedicated to conserving and enhancing northwestern Mississippi's wildlife and natural resources—to create habitats in which bees, butterflies and other pollinators flourish alongside traditional agriculture. Participating in a global Syngenta program known as "Operation Pollinator," Syngenta and Delta F.A.R.M. will establish seven Operation Pollinator sites in northwestern Mississippi. The sites will become the country's first commercial farmland enhanced for pollinators by the program. Syngenta and Delta F.A.R.M. plan to expand their efforts to more farms over the next two years.

Prior to this first commercial endeavor, Operation Pollinator was a research-focused effort in the U.S., with cooperation between Syngenta and universities in key pollination-dependent states, such as California, Michigan and Florida, explains Jeff Peters, digital farming lead at Syngenta. Syngenta and Delta F.A.R.M. plan to apply knowledge gained from this research—plus a decade

of Operation Pollinator research and commercial implementation in Europe—to the project in Mississippi. In the U.K. alone, Operation Pollinator efforts have contributed up to a 15-fold increase in pollinators, Peters says.

The Delta F.A.R.M. partnership is a good fit. "Syngenta already has a strong working relationship with growers participating in Operation Pollinator," says Reagan DeSpain, AgriEdge® manager. AgriEdge Excelsior® program specialists and growers will use the Land.db™ software's mapping program to locate the best sites for pollinator plots—where land is marginally productive for crops but well-suited to pollinator habitat. Syngenta also will provide guidance on cost-effective program establishment and maintenance.

Maintaining pollinator sites is not very different from managing farmland, says Trey Cooke, executive director of Delta F.A.R.M. Growers may need to disc and apply herbicides and burndown to keep pollinator forage, like calliopsis, partridge pea and milkweed, thriving. Syngenta has enlisted experts at the Natural Resources Conservation Service and Applewood Seed Company to recommend species and supply seed to optimize pollinator habitat.

In The Good Growth Plan, Syngenta—in partnership with like-minded growers and organizations—has promised to enhance biodiversity on more than 12 million acres globally by 2020. The collaboration with Delta F.A.R.M. is just one example of how Syngenta is dedicated to this worthwhile commitment. ■ STORY BY LYNN GROOMS

## WHY ARE POLLINATOR PLOTS CRITICAL?

Caydee Savinelli, Ph.D., pollinator and integrated pest management stewardship lead at Syngenta, shares these important insights:

**70**  
percent of the world's top 100 food and fiber crops rely on insect pollination.

Insect pollination facilitates **one out of every three** mouthfuls of food we eat.



**90**  
percent of wild plants use insect pollination for reproduction.



## The Good Growth Plan

Under The Good Growth Plan, Syngenta commits to six goals:

1. **Make crops more efficient.**
2. **Rescue more farmland.**
3. **Help biodiversity flourish.**
4. **Empower smallholders.**
5. **Help people stay safe.**
6. **Look after every worker.**

To learn more about The Good Growth Plan, visit [www.goodgrowthplan.com](http://www.goodgrowthplan.com).

A bumblebee feeds on the nectar of a chaste tree flower.

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