Ready or Not, It's Almost Planting Time p.18 Diving Into the Age of Digital Agriculture p.22

Ohio Soybean News MARCH-APRIL 2016

Groundwork for Growth

Exploring the Innovation of the 1950's-1980's. Page 14

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OHIO SOYBEAN ASSOCIATION, 918 Proprietors Rd., Suite A, Worthington, OH 43085





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The Ohio Soybean Council was founded in 1991 to manage the Soybean Research and Promotion Program, commonly referred to as the soybean checkoff. Soybean farmers pay one half of one percent of the bushel price to the soybean checkoff when they sell soybeans. Half is sent to the United Soybean Board and half is invested right here in Ohio in soybean production research, marketing and promotion, new product

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March-April 2016

Ohio Soybean News—3

Perspective



Tommie Price Ohio Soybean Association Chairman Putnam County soybean farmer

Happy 50th Anniversary, Ohio Soybean Association!

Planting season is officially upon us and I'm sure you are as anxious as I am to get back out in the field. Spring also means Statehouse visits for Ohio Soybean Association (OSA) board members. Every year OSA travels to the Statehouse to meet with legislators and elected officials to build relationships and strive to influence state and national farm policy. These face-to-face meetings are extremely important and allow us time to represent Ohio soybean farmers' best interests.

As I mentioned in the last issue of the Ohio Soybean News, OSA is celebrating its 50th anniversary. This is an exciting milestone! To celebrate, OSA will feature articles that highlight OSA's history and accomplishments over the years. This issue's featured article focuses on the Ohio soybean industry during the 1950s-1980s. David Wing and John Sawyer, two instrumental Ohio soybean farmers who served as presidents of the American Soybean Association and later went on to organize the creation of OSA are also recognized. Whether you are a history buff or not, the information is sure to be educational. This issue's featured article also highlights that as production and demand for soybeans grew over the years, so did soybean genetics research. These are just a few topics addressed, so be sure to check out pages 14-17 for more. In addition, the Ohio Soybean Council (OSC) is celebrating its 25th anniversary and is also included in this celebration. The two organizations work hand in hand and improve profitability for Ohio soybean farmers. I hope you enjoy the March-April Ohio Soybean News and best of luck as you begin planting!

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WHICH SOYBEAN VARIETIES BOUNCED BACK BEST FROM OHIO'S WET SPRING?



Yields approaching 70 bushels per acre weren't uncommon last year, despite one of the wettest springs on record. See all 2015 Ohio Soybean Performance Trial results, managed by Ohio State University Extension at **soybeanrewards.org**.



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Biodiesel Production Rises in 2015 as Consumers Seek Cleaner Fuels

S. consumers used a record of nearly 2.1 billion gallons of biodiesel in 2015, reducing America's carbon emissions by at least 18.2 million metric tons, according to new Environmental Protection Agency (EPA) data released.

Biodiesel industry leaders said the year-end figures demonstrate biodiesel's rising popularity and its continued success as America's first and only EPA-designated Advanced Biofuel to reach commercialscale production nationwide.

"We're seeing it take hold across the country. Consumers are seeking out cleaner alternatives to fossil fuels and they see biodiesel as a high-performing, cost-competitive alternative to petroleum diesel," said Joe Jobe, CEO of the National Biodiesel Board (NBB)."These numbers also show without question that the Renewable Fuel Standard is delivering significant volumes of Advanced Biofuel to the American people. They prove that the Renewable Fuel Standard (RFS) is absolutely working."

"Biodiesel is still a young industry, but it is becoming a mainstream American fuel that's having a real impact in helping us cut pollution, create jobs and diversify the fuels market."

Made from an increasingly diverse mix of resources such as recycled cooking oil, soybean oil and animal fats, biodiesel is a renewable, clean-burning diesel replacement used in existing diesel engines. It is the first and only commercial-scale fuel produced across the U.S. to meet the EPA's definition as an Advanced Biofuel — meaning the EPA has determined that it reduces greenhouse gas emissions by more than 50 percent when compared with petroleum diesel.

According to the data, fuel companies reported producing 2.09 billion gallons

of biodiesel in 2015, up from about 1.97 billion gallons in 2014.

The figures, however, continue to show a troubling trend in which imports are increasingly flooding the U.S. market and undercutting U.S. production. According to the data, domestic production remained flat at about 1.42 billion gallons, compared with about 1.47 billion gallons in 2014 and 1.50 billion gallons in 2013. Meanwhile, imports rose from 510 million gallons in 2014 to an estimated 670 million gallons in 2015, a jump of more than 25 percent.



"While the overall numbers are positive, we are increasingly seeing subsidized, predatory imports undercutting U.S. production — in part by taking advantage of U.S. policies aimed at building up the domestic industry," Jobe said. "This is exactly what we have been warning would happen, and it will continue until we take steps to level the playing field, including by reforming the biodiesel tax incentive as a domestic production credit."

NBB has urged Congress to reform the \$1-per-gallon biodiesel tax incentive from a blender's credit to a producer's credit. Under the existing blender's structure, biodiesel that is produced overseas and blended in the U.S. is increasingly taking advantage of the incentive, sending U.S. tax benefits to foreign producers. Most of the imports already receive valuable incentives overseas, while U.S. companies are typically barred from taking advantage of those overseas incentives.

"We welcome competition but U.S. companies can't fairly compete against foreign companies that are doubledipping on overseas and U.S. incentives while not letting U.S. producers compete in their domestic markets," Jobe said. "This reform is a simple fix that would appropriately focus U.S. tax dollars on creating jobs and stimulating economic development here at home instead of overseas."

While the threat of rising imports continues, Jobe said industry optimism is being fueled by stronger policies implemented late last year. In November, after several years of damaging delays, the EPA finalized new Biomass-based Diesel standards under the RFS requiring 1.9 billion gallons in 2016 and 2 billion gallons in 2017. Additionally, in December, Congress reinstated the biodiesel blender's tax incentive through the end of the year. It had lapsed in 2015.

The reported volumes are made up mostly of biodiesel but also include renewable diesel, a similar diesel alternative that uses a different production technology. The data show volumes of biodiesel (1.58 billion gallons) and renewable diesel (510 million gallons) reported under all categories of the RFS, the federal policy requiring increasing volumes of renewable fuels to be incorporated into the U.S. fuel supply. The data can be found on the EPA's website, www.epa.gov.



OSA Highlights Soy-Specific Elements of White House Budget, Pledges Renewed Defense of Crop Insurance

he Ohio Soybean Association (OSA) recently reviewed the budget proposal for fiscal year 2017 issued from President Barack Obama. OSA expressed strong opposition to a proposed \$18 billion cut to crop insurance and a lack of funding for infrastructure improvements. OSA noted the budget contains funding for multiple soybean farmer priorities, including increased resources for oversight

at the Commodity Futures Trading Commission (CFTC) and full funding for the Market Access Program and Foreign Market Development program.

One of those includes a cut in crop insurance. OSA has strongly opposed any attempt to target farm bill programs for additional cuts, and believes a quick glance at the farm economy will showcase the need for a stronger safety net for farmers, not weaker ones.

Richard Wilkins, American Soybean Association (ASA) president also pointed out the association's disapproval in the budget's 22 percent cut to funding for the Army Corps of Engineers, which oversees the maintenance and construction of locks and dams on the nation's waterways. Specifically, the budget cuts more than 41 percent from the Corps' construction account, \$2.7 billion from the operations and maintenance account, and fails to fund the Navigation Ecosystem Sustainability Program (NESP), a priority for ASA.

"We're disappointed with this budget's neglect of investments in



waterways infrastructure, which is vital to rural economies as it is a means of efficient transportation of soybeans and a key component of our global competitiveness in export markets," said Wilkins. "Infrastructure investments should not be limited to highways, mass transit, and high speed rail, but should include those aspects important to rural America too. ASA will continue to work with industry partners and Congress to build on the successful increases in investments achieved in Fiscal Year 16 Appropriations for our ports and waterways operations & maintenance and infrastructure improvements."

While noting the association's displeasure in the infrastructure and crop insurance provisions in the budget, Wilkins did point out several areas in which the budget addressed and increased funding for farmer priorities.

"Clearly we absolutely oppose any cut to crop insurance, and the proposed hobbling of the Corps funding, but there is plenty in the president's budget that we support, including \$330 million in funding for commodity market oversight at the CFTC," said Wilkins. "Market integrity is not front-of-mind until something goes wrong, and adequate resources for oversight of futures markets are an important priority for farmers."

The budget's continued funding for programs that promote trade with both emerged and developing markets is also something OSA and ASA welcomed, and will fight for in future budgets.

The Market Access Program and Foreign Market Development programs are an essential part of our industry's work to establish and expand the beachhead for American soybeans in foreign markets. That money helps to fund valuable research and market development work by the U.S. Soybean Export Council, which translates directly into increased exports and revenue for American soybean farmers.

From a legislative standpoint, the president's budget is a non-starter in an election year and with a Republicancontrolled Congress, however the release of the budget can start a productive conversation on the importance of funding many of the programs critical for soybean farmers.

"Farmers need to continue to increase face-time with lawmakers so that they understand these programs aren't simply line items on a budget, but rather working tools that help farmers operate more efficiently and successfully." said Adam Graham, OSA presidents and soybean farmer from Logan County.

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SOY TALK

Prepping soybean fields in a corn-soybean rotation

Soybeans offer many economic and agronomic benefits and complement corn production when used in a rotation.

"While each rotation is different and each field may have different needs, there are several reasons to consider a corn-soybean rotation," says Justin Dillon, Mycogen Seeds commercial agronomist.

- **Reduce disease risk.** Crop rotation can decrease the risk of certain crop diseases by breaking the cycle of many overwintering, yield-limiting diseases.
- Manage pest populations. Corn-soybean rotations can break pest pressure and protect the efficacy of Bt traits.
- **Rotate weed control.** Using multiple modes of action reduces the risk of herbicide-resistant weeds and can decrease production costs.
- **Supply nitrogen (N).** Corn residue immobilizes higher concentrations of soil N than soybean residue. Corn following soybeans benefit from more available N.
- Improve soil health. Rotating corn and soybeans improves soil aggregation, especially in no-till systems, which can improve soil health and soil tilth.

Consider soil inoculants when rotating to soybeans. When a field comes out of a corn rotation, as a general rule of thumb an inoculant is not needed if soybeans have been grown in the field within the past three to five years.

"While an inoculant isn't always necessary, it is never going to harm your yield. It's just additional insurance," Dillon says. Besides using inoculants, Dillon says, growers should consider how to manage crop residue in the field. Corn residue can be tricky when planting soybeans.

"Whenever you plant into crop residue, there is concern about what we call 'hair pinning' — when bits of crop residue become trapped in the seedbed," he says. "You need to have a good furrow opener to ensure proper seed-to-soil contact for germination."

When it comes to seed treatments, Dillon says, the most important thing to understand is that treatments provide a protective coating for the soybean seed, potentially allowing growers to plant earlier and protecting seeds planted into cooler soils.

For more tips on successful soybean production and other agronomic topics, visit Mycogen.com/Agronomy.

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Ohio Senators Oppose Soybean Farmer-Backed Trans Pacific Partnership

The Ohio Soybean Association (OSA) is a supporter of the Trans Pacific Partnership (TPP) agreement, which represents more than a third of the world's gross domestic product, and both emerging and major soybean export markets along the Pacific Rim. The negotiations for the TPP have been ongoing for 5 years. On October 5, 2015, Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam completed a deal which sought to lower trade barriers such as tariffs, establish a common framework for intellectual property, enforce standards for labor and environmental law, and establish an investor-state dispute settlement mechanism.

For the past 5 years the American Soybean Association (ASA) and the OSA have been working closely with Ohio's Congressional delegation to gain support for the TPP. TPP has been widely researched and heavily supported by the entire agriculture industry.

"It's critical for Ohio farmers to continue contacting both Senator Sherrod Brown and Senator Rob Portman about the importance of supporting TPP," said Adam Graham, OSA president and soybean farmer from Logan County. "Hearing from farmers and agriculture industry leaders is the most important part of insuring that we can grow our economic markets to include the 95% of the world's consumers living outside the United States."

On February 3rd the TPP agreement was signed in New Zealand, but the deal does not go into effect until Congress considers the agreement. It is critical that farmers do their part by explaining how trade will create opportunities in rural Ohio. Talking to business leaders and community leaders are important if farmers can generate support for passage of TPP.

Please contact Senator Brown at (202) 224-2315 and Senator Portman at (202) 224-3353, and ask them to support America's farmers and pass TPP.

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Scott Isler of Marion County Named Beck's Young Farm Leader

t some point in their childhood, many kids dream of having a job just like their dad. Often times they change their mind or find a different path, but Scott Isler has stayed the course and is poised to take charge, alongside his brothers, as part of the new generation at Islercrest Farms.

Being farmers makes them part of a very small group that is often scrutinized. Scott's willingness to step up as a leader and tell his story has earned him the honor of being a Beck's Young Farm Leader — a program that celebrates young farmers who are getting involved in the industry and their communities.

"Young farmers are essential to ensuring a bright future for the agricultural industry. We know they are the next generation of leaders and encourage them to get involved," said Bruce Kettler, Director of Public Relations at Beck's Hybrids.

Scott's dad and uncle played a big role in making Islercrest Farms what it is today. As their generation looks to retire, Scott and his brothers — David and Nathan — have eagerly taken over the day to day operations of the more than 2500 acres of soybeans, corn and wheat along with the responsibilities of caring for nearly 1200 pigs.

"We all kind of have our area that we work in, but often times we all have to work together as well; especially when it's harvest and planting season or when it's time to load out hogs," said Scott. "We've managed to just about double our swine production in the last 5 years and try to pick up some more land each year."

As livestock farmers, the Islers appreciate the quality protein source that is found in soymeal and utilize it as a staple for consistent animal nutrition at their operation.

"Soy is a great source for livestock feed and we need to continue to meet our own growing domestic needs, but at the same time we need to be able to compete with other countries in the export markets," said Scott. "A lot of grain farmers understand their grain goes for animal agriculture and are supportive, but it can be an ongoing struggle to get everyone together and realize that we definitely need both sides of agriculture to be working together as much as possible. A lot of times people don't understand the livestock side or vice versa, if they're not working in both."

Scott attended The Ohio State University, earning a degree in Animal Science with a minor in Production Agriculture. He and his wife, Tracie, have two kids and have taken on a number of leadership roles over the years including serving as 4-H advisors for a club with nearly 60 members.





Isler Family: Scott and Tracie Isler have two children, Logan and Gracie, who enjoy growing up in the country and being part of the family farm.

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Previously, they have been involved at Ohio Farm Bureau serving as the Young Agricultural Professionals State Committee Chairs and being honored as the Excellence in Agriculture winners. In addition, Scott currently serves on the Ohio Pork Producers Council and is involved locally in both pork producers and the county Farm Bureau.

"It's easy to see Scott thinks of the agricultural industry as more than a job and we're excited to honor him as a Beck's Young Farm Leader," said Adam Graham, OSA president and soybean farmer from Logan County. "Being both a grain and livestock producer, he understands the importance of both sectors working together to ensure a bright future for all farmers and make sure the next generation has the same opportunity. We enjoy honoring young people in agriculture and encourage more farmers to nominate themselves or someone they know for the Beck's Young Farm Leader program.

Interested in applying or nominating someone for the Beck's Young Farm Leader Program? Visit **www.soyohio. org/becksyoungfarmleader**.



ASGROW[®] PRODUCTS IN OHIO TARGET PHYTOPHTHORA DISEASE, SOYBEAN CYST NEMATODES

Twenty Asgrow[®] Roundup Ready 2 Xtend[™] Products Will Be Available in 2016 for Regional Farmers

This season, Ohio farmers will have the opportunity to purchase Asgrow[®] Roundup Ready 2 Xtend soybeans[™]. Built on Genuity[®] Roundup Ready 2 Yield[®] technology, farmers can count on the same exceptional yield performance with this new technology.

The Asgrow brand will offer the largest selection of Roundup Ready 2 Xtend soybean products for planting in 2016, with 25 products spanning all eight maturity groups. Included will be 20 products for farmers in Ohio and the Northeast U.S. In addition, the new products will provide resistance packages against nematodes and Phytophthora root rot.

Despite challenging growing conditions in Ohio last year, Asgrow soybean products demonstrated strong performance. For 2016, the Asgrow lineup features the latest genetics that combine high yield potential with defensive traits to help Ohio farmers continue to maximize performance.

Brad Miller, Asgrow DEKALB[®] technical agronomist in Ohio, cited two leading Asgrow products, both introduced in Ohio last year – AG2836 Brand and AG3536 Brand – that have two genes to offer improved Phytophthora disease resistance.

Miller said the benefits of Asgrow defensive packages were demonstrated last year when prolonged rain contributed to soybean diseases in many parts of the state, including Phytophthora root and stem rot and sudden death syndrome.

He noted that many Ohio farmers plant Asgrow with Acceleron[®] Seed Treatment Products, which offer effective fungicide protection against early-season plant diseases that are associated with cool, wet weather. "Acceleron Seed Treatment Products enabled Asgrow products with high yield potential to better tolerate the extra wet conditions," Miller explained. "The result was better stand establishment and strong early-season vigor."

He added that all Asgrow products in Ohio also offer different levels of resistance to soybean cyst nematode, which was another issue farmers had to contend with in some parts of the state. "When soybean farmers begin selecting products for next year, it's important to choose those which offer good nematode resistance," he said.

Miller said other Asgrow products being planted this season in Ohio that combine strong agronomics and high yield potential include AG2535 Brand, AG2935 Brand, AG3231 Brand, AG3832 Brand and AG3936 Brand.

Breeding Advances

These and other high-performing Asgrow products result from the brand's industry-leading, global breeding program. New genetics and advanced biotech traits are developed specifically to meet local farming conditions, providing higher yield potential protected by disease and pest resistance.



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Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. Roundup Ready 2 Xtend Soybeans contains genes that confer tolerance to glyphosate and dicamba. Glyphosate herbicides will kill crops that are not tolerant to glyphosate berbicides will kill crops that are not tolerant to dicamba. Contact your Monsanto dealer or refer to Monsanto's Technology Use Guide for recommended Roundup Ready® Xtend Crop System weed control programs. Acceleron®, Asgrow®, Asgrow and Design®, DEKALB®, Genuity®, Roundup Ready®, Roundup Ready 2 Yield® and Roundup Ready 2 Xtend TM are registered trademarks of Monsanto Technology LLC. All other trademarks are the property of their respective owners. ©2016 Monsanto Company

Investing Checkoff Dollars



Innovation Leads to Long-term Ohio Soybean Success

Soybeans have been grown in Ohio as an annual crop since the 1890s. And as much as times have changed during the last century or so, some things have remained the same. That includes a focus on innovation and a commitment to soybean profitability that continues to energize the longterm capabilities and promise of the state's soybean industry.

The year 2016 marks the 25th anniversary of the Ohio Soybean Council (OSC) and soybean checkoff and the 50th anniversary of the Ohio Soybean Association (OSA).

OSA was founded in 1966 to provide leadership for Ohio soybean farmers in promoting effective policies and legislation to ensure a growing and profitable soybean industry.

Since 1991, OSC's vision has been to assure the long-term viability of Ohio soybeans farmers. OSC invests soybean checkoff funds to maximize farmer profit opportunities.

To commemorate both anniversaries, the Ohio Soybean News will publish a special series that recounts the story of soybeans in the U.S. and Ohio, as well as reflects on the notable moments in the history of OSA and OSC.



Groundwork for Growth

Ohio soybean farmers expand and organize in the 1950s-1980s.

I maginations could not stretch far enough to envision the innovations that would lead to major milestones for the state of Ohio and the Ohio soybean industry during the 1950s–1980s. But looking back, it's clear those decades laid the groundwork for considerable growth and accomplishment.

The Ohio Turnpike was completed in 1955, and the St. Lawrence Seaway, connecting Ohio cities on Lake Erie to international trade opportunities, opened in 1958. Both transportation feats continue to provide opportunities today to help move Ohio soybeans to customers.

About the same time, soybean production began moving from the southern U.S. into the Corn Belt. Ohio soon became one of the primary production states.

"The soybean sector began to play a larger role in Ohio in the 1950s and 1960s, and became a huge part of the state's agriculture. Animal feed and human use grew throughout those years," says Amy Sigg Davis, whose family was one of the first in Ohio to plant soybeans. Davis is an Ohio Soybean Association (OSA) and Ohio Soybean Council (OSC) board member and long-time soybean producer.

In fact, Ohio soybean farmers harvested about two million acres in 1965, then saw acreage skyrocket to nearly four million by 1985.

Other Ohio accomplishments in the 1960s were literally out of this world. In 1962, native son John Glenn became the first American to orbit Earth, and in 1969, Ohioan Neil Armstrong became the first person to walk on the moon.

USDA data show U.S. farmers dominated world soybean production through the 1950s, '60s and '70s, growing more than 75 percent of global supplies to meet various worldwide needs.

Better Genetics, Better Management. As production and demand grew, so did soybean genetics research. Brian Diers, University of Illinois soybean breeder, says national average yields began increasing about one-third of a bushel per acre per year. One of the reasons, he says, is because newer varieties were developed with longer maturities than their 1950s and 1960s counterparts. Protein and oil content in modern varieties also began to increase, and now is significantly higher than in the 1920s.

Jim Beuerlein, retired Ohio State University Extension crop specialist, remembers soybeans transitioning from a hay crop to oilseed crop during the 1950s. He says soybeans were planted in mid-June in Ohio at the time, using a high seeding rate because seed quality was so poor. Farmers were later advised to plant soybeans in 30-inch rows so they could cultivate them to remove weeds.

"There was a slow pace to soybean breeding in the 1950s and 1960s that later accelerated," continues Beuerlein. "By the mid-1950s, Phytophthora root rot was developing, so researchers focused on breeding a resistant gene into soybean varieties. Weeds became more of a problem into the 1960s."

The book *Soybean Pioneers* notes that by the 1960s, tillage and herbicides became popular management strategies to control weeds. Chemical control was considered a "significant technical advancement in soybean production between 1965 and 1975."

Ohio farmers first began using preemergence herbicides that were germination inhibitors, like Treflan and Amibin, in the early 1970s, says Beuerlein. By the end of the 1970s and into the 1980s, postemergence herbicides, including Basagran and Poast, were part of the mix. Perennial weeds were a major issue until Roundup came on the market in the 1990s.

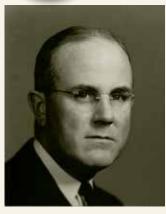
"Basic research into no-till soybeans began in the 1970s. By the early 1980s, it was a very doable practice," says Beuerlein. "We had to change production systems to make up for the loss of tillage. No-till led to more soilborne diseases, so we started using seed treatment fungicides and narrower rows. We had to make adjustments for firmer, wetter spring soils. We did reduce soil erosion and some big-seeded broadleaf weeds became less of a problem for awhile."

Big changes came to the state of Ohio during the 1970s as well, including approval of the first state income tax and the state lottery. And as the Blizzard of 1978 was recorded as the worst in \rightarrow





Investing Checkoff Dollars



David Wing

David Wing served as president of the American Soybean Association from 1941-1943. He was later instrumental in helping organize Ohio soybean farmers in 1966 to create the Ohio Soybean Association.

Ohio's history, the soybean industry made a big flurry towards better soybean breeding.

"We went from few pests in the 1950s to many pests in the 1980s, as soybeans became acclimated to this country," says Beuerlein. "The focus was on variety development and disease control, and then we began to also research soybean quality and protein and oil content."

Anne Dorrance, Ohio State University plant pathologist, adds that Phytophthora root rot remained a major disease challenge in the 1980s, as the pathogen adapted to resistant genes in soybean varieties. It continues to be a tough disease to control in Ohio today. "Soybean cyst nematode and sclerotinia stem rot expanded their presence, which has required breeders to compare different lines and genotypes to identify consistent responses," she says.

"Disease is still a challenge because nature operates more quickly than science," adds Beuerlein. "When we would see problems develop, we would try and fix them and then look at opportunities to increase yields. Every time we found a 'fix,' new problems developed."



John Sawyer

John Sawyer worked with David Wing in 1966 to organize the Ohio Soybean Association. Sawyer was president of the American Soybean Association from 1957-1959.

But the relationship between Ohio farmers and scientists has been critical to advances in research, says Dorrance. "Farmers tell us what to do. They bring problems forward and interact with us," she says. "The link is critical. For example, we do a survey with farmers on diseases, and then use a system of checks and balances with companies to get the right genes into the right varieties."

Consumer Focus, Organized Promotion. Greater worldwide demand for oils, lubricants, plastics and other products fueled soybean demand throughout the three decades.

The website **soyinfocenter.com** reports the first large-scale use of soybean oil for edible purposes was by margarine makers in 1930. In 1966, soybean oil passed butter to become the world's leading edible oil. Between 1960 and 1982, world production of soybean oil rose to where it accounted for 44 percent of the world's edible vegetable oils.

Rising soybean demand also fueled a farmer-based grassroots interest in promoting soy-based products to consumers. A meeting of those interested in organizing Ohio soybean production was held March 7, 1966, led by Ohio farmers David Wing and John Sawyer. Wing and Sawyer were both directors for the American Soybean Association (ASA), and Sawyer served as ASA president from 1957–59.

During the meeting, ASA Executive Secretary George Strayer gave a review of soybean development in the U.S., market expansion and an outlook for the future. With about 20 Ohio farmers present, OSA was subsequently created. Minutes from the meeting note organizers thought the group could be "beneficial with respect to political influence in determination of government programs and policies affecting soybeans." OSA also became an advisory group for the Ohio State Experiment Station and Ohio State University.

Larry Brubaker, Marysville, Ohio, was named the first OSA chairman, and Cap North, Groveport, Ohio, was elected vice chairman. Articles of Incorporation were filed with the State of Ohio Secretary of State, and organizers began a membership drive.

Doug Loudenslager remembers membership gains every year during his 1984–1987 tenure as executive director. "We had fun, spirited campaigns and good farmer leaders to promote OSA," he says. "Membership and promotion activities were funded through dues and ASA. We also participated in market development activities, including hosting 12 to 15 [foreign] country attaches to Ohio."

Loudenslager says the major thrust of the association during the 1980s was to get a state checkoff program in place. Over the years OSA tried six times to create a state checkoff to no avail.

The OSA office was moved from Marion, Ohio to Columbus, Ohio in 1987.

"Trying to pass a checkoff was challenging," says Keith Stimpert, OSA executive director from 1987–1996. "But it wasn't for a lack of effort. We just weren't able to communicate the vision to enough farmers representing enough production to establish the state program." Meanwhile, Stimpert says dedicated volunteer leaders helped move the needle and interest in things like biodiesel and food-grade soybeans. The Volunteer Soybean Promoters (VSP) was a key program in raising awareness among consumers about the potential of soybeans.

Davis, who also serves on the National Biodiesel Board (NBB), remembers biodiesel as a new concept and as a potential game changer the 1980s to increase soybean demand. "We were very excited about new soybean uses and where products would go," she says. "There was a big push for soybean oil to replace even more petroleum in fuels, soy ink, plastics and other uses."

And while a state soybean checkoff never passed, Stimpert says, "We should be proud of farmers during that time who used limited resources to develop good practices in funding important projects," he says. "There was a collaborative spirit among farmer leaders to engage everyone in improving soybean profitability. They worked hard to garner greater acceptance of the checkoff concept."

In the next issue of *Ohio Soybean News*, learn about efforts to start the national checkoff, when farmers like Bob Utz, David Younkman and Dennis Mesenburg, brought farmers from other Ohio groups together to write the next chapter on moving the soybean industry forward.



USDA Tracks Ohio Production Milestones

The smallest number of planted acres was **17,000** in 1925.

The lowest yield was **11.5 bushels** per acre in both 1924 and 1926.

The highest number of acres was **4.9 million** acres in 2015.

The highest yield of **52.5 bushels** was produced in 2014.

The greatest state production total was **254.1 million** bushels in 2014.

SOURCE: USDA-NASS

Ohio Yields Nearly Double as Acreage Rises





Investing Checkoff Dollars

Ready or Not, It's Almost Planting Time

Spring officially begins in March and is touted as a time of growth and renewal in nature. For farmers, it is also a time to take to the shop, or the barnyard, for some equipment maintenance before the demands and urgency of planting season take over.

"Good maintenance is key. You can't find everything, but you can get a catch a lot of stuff with an inspection to prevent breakdowns in the field," said Steve Hayes, who serves as the director of training for Evolution Ag's five central Ohio locations as well as a factory service trainer for Case IH and New Holland.

Common problems dealers see every year during planting season typically involve calibration, monitor settings and unforeseen part failure. And with the increased use of precision technology and sensors, there is even more to go over.

"The last 4-5 years there's been a pretty healthy increase of people doing more and more precision. With precision farming, a lot of times people have a misunderstanding that it's all about yield," said Hayes. "In reality, it's more about handling your input costs. If you can control inputs better, there is still profit in the end and that's huge."

Hayes mentioned a lot of dealerships offer winter specials or can have a technician come out to the farm and go over the equipment. Often times they will spend an hour or more checking for areas of wear and potential problems and then discuss their findings with the farmer. From that point the farmers can decide what areas to take action on.

For the do-it-yourself farmers, Hayes recommends the following preventative measures to catch minor issues before they become a major breakdown.

Start with an inspection:

- Check all ground engaging components, look for excessive wear
- □ Spin all parts with bearings, make sure they turn freely
- Check that all firming points for seed trenches are to specifications
- Check and adjust all chains
- Inspect all tires and check for optimal air pressure
- Ensure adequate lubrication on all parts of planter

Double check technology:

- Update precision farming maps and add any new fields
- □ Make sure all monitors are set up correctly
- □ Inspect all parts of seed meters, look for any wear or damage
- Install correct seed disc and make any needed adjustments
- Periodically dig up seeds when planting to check rate & depth

Go over your sprayer as well:

- Perform basic maintenance oil change, air filters, etc.
- □ Know your products and application rates.
- □ Adjust monitors and install correct spray tips
- Once in use, look for any inconsistencies in spray application

A tight profit margin with precise calibration for seeding and application.



Lean Profits Mean a More Hands-On Marketing Approach

Rarmers are risk takers, there is no argument about it. They put a lot of money on the line each spring with the hope that it will bring a profitable return in the fall. With today's markets remaining flat and input costs remaining high, profit margins seem to be continually shrinking, leaving many farmers wearing out their calculators trying to create a profitable scenario.

While crop insurance and programs administered by the Farm Service Agency can help offset losses, it will likely take some more marketing effort from farmers to make it a profitable year. Local grain elevators or marketing consultants can offer more comprehensive options tailored to a specific farming operation, but there are also some things farmers can do first to prepare and know more about what makes sense for their farm.

Arguably the most important number for producers to know is their breakeven point — the price it will take to cover all the costs associated with growing and harvesting that crop. Any grain sold higher than the breakeven point can be considered a profitable move. There will always be a chance the market will rise, but also the chance that prices will fall. It's important to weigh the probability and look at past trends as well as current forecasts in the market. Any grain sold at a profit is better than no grain sold at a profit.

It is also important to understand basis; the National Crop Insurance Service defines "basis" as the difference between the Chicago Mercantile Exchange Price and the local price offered. Checking the current basis against the average will tell if it is strong or weak. A strong or high basis may signal a better than expected price while a weak or negative basis is a signal that the local market is not looking for a lot of grain at the time. From there a producer has some options, including forward cash contracting or hedging. Hedging has a considerable amount of uncertainty, requires some knowledge of the futures market and involves a commodity broker. There can be a nominal cost per bushel associated with hedging and contracts are only offered in standard sizes, but there is typically a wider potential pricing period for the crop which can spread out the risk.

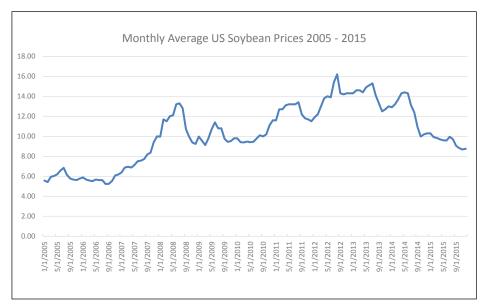
For those just getting started in marketing, forward cash contracting is less complex as it works on an established price within cash markets, offers variable sizes and is generally an option offered by local elevators. However, most contracts cannot be cancelled so you're locked in at that price and bushel amount for the crop delivery.

A crop insurance policy is still an important part of any risk management plan and complements marketing efforts by giving producers a minimum guarantee based on a projected price and something to compare to when looking at forward sales. If a farmer has crop insurance, they know their minimum revenue per acre and can make some moves throughout the year with confidence to increase profitability.

No matter the combination of risk management and marketing a farmer decides on, an important aspect to keep in mind is that the market may not reach that more desirable point they have in mind. For 2016, the goal may be more focused on simply minimizing losses and taking advantage of any profitable situations that arise.

Data sourced from USDA's National Agricultural Statistical Service.

While soybean prices are not at record lows, input cost and land rents that climbed with the prices in recent years have not declined at the same rate.





Opportunity for Ohio Food Grade Soybeans on the Horizon in China

uch like a farmer tends his crops, the Ohio Soybean Council (OSC) often visits with current and potential buyers of Ohio soybeans to plant seeds of information, build trust and grow relationships so that Ohio farmers may harvest the rewards of an increased demand for their high quality product.

Most recently, these efforts have taken OSC board members and staff to



One of the visits for Ohio representatives included a Nestle plant where they make many different types and varieties of soy milk as well as textured soy to be used as a protein substitute for soy-based versions of meat like sausage and salami.

Hong Kong, Shenzhen and Shanghai, China to cultivate relationships, develop better understanding of the evolving needs of the food grade market and identify new opportunities for both food and commodity grade soybeans. Representing Ohio farmers were Terry McClure, OSC Chairman; Steve Reinhard, OSC Vice-Chairman; and Barry McGraw, Director of Product Development and Commercialization.

"China is a huge importer of American soybeans; they're going to import a total 74 million metric tons this year and a projected 93 million metric tons by 2020. That's a 5% growth per year — that's a market we need," said McClure. "We go over to talk to them and make sure we're filling their needs, establish relationships and let them know we care about their needs and the quality of our soybeans."

Accompanied

by staff from the US Soybean Export Council (USSEC), the group visited many food processors and soybean crush facilities where they met with buyers and researchers who were eager to learn more about the potential for Ohio soy. Also on the itinerary were large and modern meat operations that are developing to keep up with the demand for more protein from a growing middle class. Whether it's meat from animals that were fed soy, soy beans or meal for livestock feed, or food grade soybeans for protein products such as tofu and soymilk, there is a huge need to fill and it will be a great opportunity for Ohio farmers.

"We are the largest non-GMO producer in the country. We raised nearly 24 million bushel of non-GMO soybeans in Ohio and a lot of those find their way to the pacific rim where people choose to use non-GMO in their tofu and soymilk. Ohio can be a good supplier of those soybeans as we tend to have a little higher protein than other parts of the country and that is very important in making those food products," said McClure.

Challenges for Ohio origin food grade soybeans continue to be in the food processing industry that will not risk inadvertent biotech contamination of food grade soybeans. While many processors were interested in developing



Another stop was at Fuyin Food Company, LTD who produces tofu and soymilk. They are interested in importing soybeans and the possibility of contracting with farms.

.....

relations and options to diversify their supply chain, the zero tolerance policy on unapproved biotech soybeans limits their ability to move forward. Policy changes or new approval processes would provide great opportunity for Ohio soybeans. Canada is a direct competitor in this area as they have already entered the market with non-GMO beans that are passing Chinese government restrictions.

"The trip brought to light the sheer size of the market," said McClure. "Their total domestic production in 2014 was 11.8 million metric tons and they consumed almost 84 million metric tons. Those are people that need us, they are using basically their entire domestic production for food and their consumption is someday going to eclipse that."

It's clear that the market for imported soybeans in China is going to be growing and by establishing relationships and providing value, OSC is making sure Ohio farmers are going to be poised to fulfill those markets with a high quality product.



OSC and Columbus Council on World Affairs Address Food Security

It's no secret the world population is increasing at a rapid rate; and agriculture is the industry tasked with increasing productivity to feed the over 9 billion people the global population is expected to reach by 2050. Earlier this year, the Ohio Soybean Council (OSC) partnered with the Columbus Council of World Affairs (CCWA) during the Signature Luncheon Series that brought this international issue to the forefront in a local setting.

Steve Reinhard, OSC Vice Chairman and soybean farmer from Crawford County, spoke briefly about the purpose of OSC, the global role Ohio plays in international soybean trade, and the educational programming efforts OSC has put together in an effort to reach educators and students. OSC projects

Group: Pictured (left to right) are CCWA President Patrick Terrien and CCWA Board of Directors Chair Mark Hartman, who hosted food security panelists Kimberly Flowers and Phil Karsting, with support from OSC represented by OSC Vice-Chairman Steve Reinhard and OSC Executive Director Kirk Merritt.

and partnerships, like GrowNextGen encourage students to look at the challenges facing the next generation as well as the careers and opportunities they have to make a difference in these global issues.

The panelists included Phil Karsting, current administrator of the USDA's Foreign Agriculture Service, and Kimberly Flowers, director of the Center for Strategic International Studies' Global Food

Security Project, and was moderated by Patrick Terrien of CCWA with additional questions taken from the crowd.

The overarching theme of global food security was defined as people having not only access to food, but access to food that is safe, affordable and nutritious — a combination that is often lacking in many parts of developing countries or subsets of the population in any nation. Panelists noted that global food security isn't just about a moral imperative, but an issue with direct ties to national security, economic growth and international trade.

Global food security is only made more complex with added issues of extreme weather. environmental sustainability and infrastructure. In addition, war and conflict have disrupted markets and systems that will take decades of international effort to repair. At



Panelists: Kimberly Flowers, director of the Center for Strategic International Studies' Global Food Security Project and Phil Karsting, current administrator of the USDA's Foreign Agriculture Service discussed issues of a food security related to a growing global population.

the same time a growing middle class is creating an increase in the demand for higher quality proteins.

Optimism of an end to hunger is kept alive with collaborative efforts such as the Zero Hunger Movement of the United Nations and broadened support beyond government organizations and into the private sector and charitable foundations.

Karsting spoke of the many benefits school nutrition programs have had in developing countries including increased health and better cognitive learning abilities. Additionally, by giving the same benefits to all children, more girls are being sent to school creating a generation with less gender disparity.

The only certainties are that it will take a concerted global effort and there will be no simple answers to this significant, multi-layered issue of food insecurity.





TECH TALK: Diving Into the Age of Digital Agriculture

ver the last several years, there has been a lot of talk about data, and more specifically big data. Today, almost every activity we do generates some type of data — every purchase we make, pass through the field, or social media post creates some type of collectable information. Precision agriculture and cloud-based technology tools collect and aggregate millions of pieces of on-farm data every day, all over the world. Typically, this information falls into three categories: agronomic data, machine data, and weather data (see **Figure 1**). All precision ag technologies utilized by farmers generate data. A study conducted by the Ohio Soybean Council (OSC) and soybean checkoff found that almost all Ohio soybean farmers surveyed are utilizing at least some components of precision ag, and thus generating data (see **Figure 2**).





Agronomic data: Information derived about activities and conditions on farm fields. Examples include soil analysis, nutrient information, hybrid selection, plant populations, and yield data.

Machine data: This information is associated with how equipment is functioning. Examples include fuel consumption, machine health indicators, hours running, diagnostic codes and engine performance.



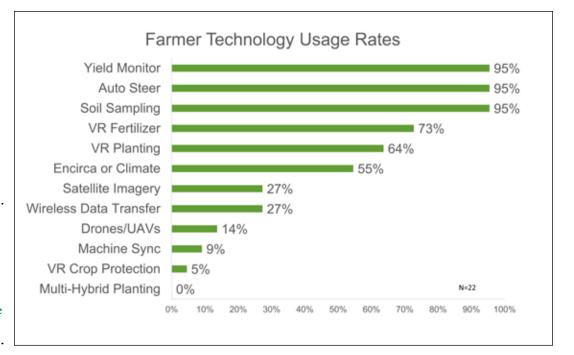
Weather data: Information about precipitation, wind, temperature and other climate conditions.

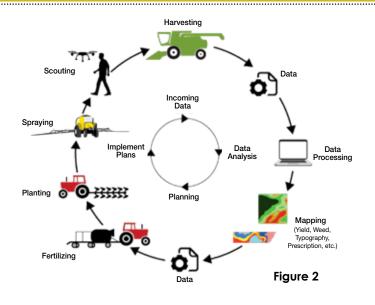
Figure 1

s this information is collected over time, it can be analyzed to identify trends, find patterns, and identify potential problems, all of which can be quite powerful. If used appropriately, it allows farmers to make objective, non-emotional decisions which can improve operational data ownership and privacy. Agriculture technology providers also find farmers' data valuable as it can give them insight into many things such as predicting a farmer's buying behaviors. Questions remain about a farmer's ability to get paid by these companies to utilize their data.

efficiency and increase potential profitability. Often, however, it is difficult for farmers to collect and analyze all of this information independently, creating the need to engage agriculture technology providers. These partnerships often raise questions about

Almost all Ohio soybean farmers surveyed are utilizing yield monitors, auto steer, and soil sampling. A lesser percentage are using newer and less proven technologies like variable rate crop protection and drones.





In a study conducted by OSC, farmers were asked to identify the biggest challenges facing their operation over the next 3–5 years. Data management and privacy was the most mentioned concern behind short term profitability and regulations. One Southwest Ohio Soybean Farmer said "the number one issue is managing all of the data and having it someplace that maintains the integrity and the security of my data." An American Farm Bureau Federation study that was completed in September of 2014 found that 81% of farmers believe they own their data (they are correct), and 77% are worried about their data security.

O o what can you do to protect yourself and your data?

The most important thing is asking key questions of your agriculture technology providers. Make sure you understand what information is being collected, who is in control, who else can see your data, if you can remove your data, can you be paid for your data, and what happens if there is a breach in security. It is always good to ensure your agriculture technology providers can address each of the areas outlined in the Privacy and Security Principles for Farm Data. This task should be getting easier for farmers as the American Farm Bureau Federation plans to release a new transparency evaluator tool in the coming months. It will evaluate company's answers to a series of questions, including: if the company goes out of business,

will the farmer get their data back and will the company share/sell farmer's data with other people.

If all of their answers are verified in their agreement the company will be verified as transparent. It will also provide a link to where in the contract the answer is located. This will help farmers find answers about agriculture technology providers in a quick, simple fashion.

Stay tuned: the next TechTalk article will focus on cell phone coverage / wireless access in rural Ohio, and the use of mobile technologies in agriculture.



Unlike the ownership of physical goods, the ownership of data is not as clear. Mary Kay Thatcher, Senior Director of Congressional Relations at the American Farm Bureau Federation says, "Ensuring a farmer knows they own their data is really important. Every farmer thinks he owns his data, and every company you ask says the farmer owns the data. However, there are many cases that challenge that." There are many things to consider such as owned vs. rented farm land, retailer applied products, and raw data ownership versus aggregate data ownership. Thatcher goes on to say, "It is critical to not just take the word of the company as gospel. As painful as it may be, read what the contract says about ownership and control of your data."

In 2015, a coalition comprised of agricultural groups, agricultural technical providers, and others developed the Privacy and Security Principles for Farm Data. It outlines key principles around education, ownership, collection access and control, notice, transparency and consistency, choice, portability, terms and definitions, disclosure, use and sale limitation, data retention and availability, contract termination, unlawful or

anti-competitive activities, and liability and security safeguards. Over 34 groups have signed onto the Privacy and Security Principles for Farm Data.

About TechTalks:

The Ohio Soybean Council (OSC) recognizes that these new technologies provide additional opportunity and concern for growers. Therefore, OSC conducted in-depth research on the current state of digital communication in rural Ohio. Over the next year, OSC's TechTalk series will take a closer look at issues that are important to you and the future of the industry. Future topics include:

Data storage options and their compatibility and privacy controls

Cell phone coverage / wireless access in rural areas and the use of tablets in agriculture

Broadband coverage and the impact of download and upload speeds on ease of use

Training for growers and a workforce to fill new in-demand positions, as well as unbiased sources to assist with informed decisions

 Use of robotics, remote sensing and UAVs in agriculture

It's an exciting time to be involved in agriculture and see what develops in the next 30 years to feed an ever-growing population and satisfy a changing consumer demand.

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