

Ohio Soybean News™

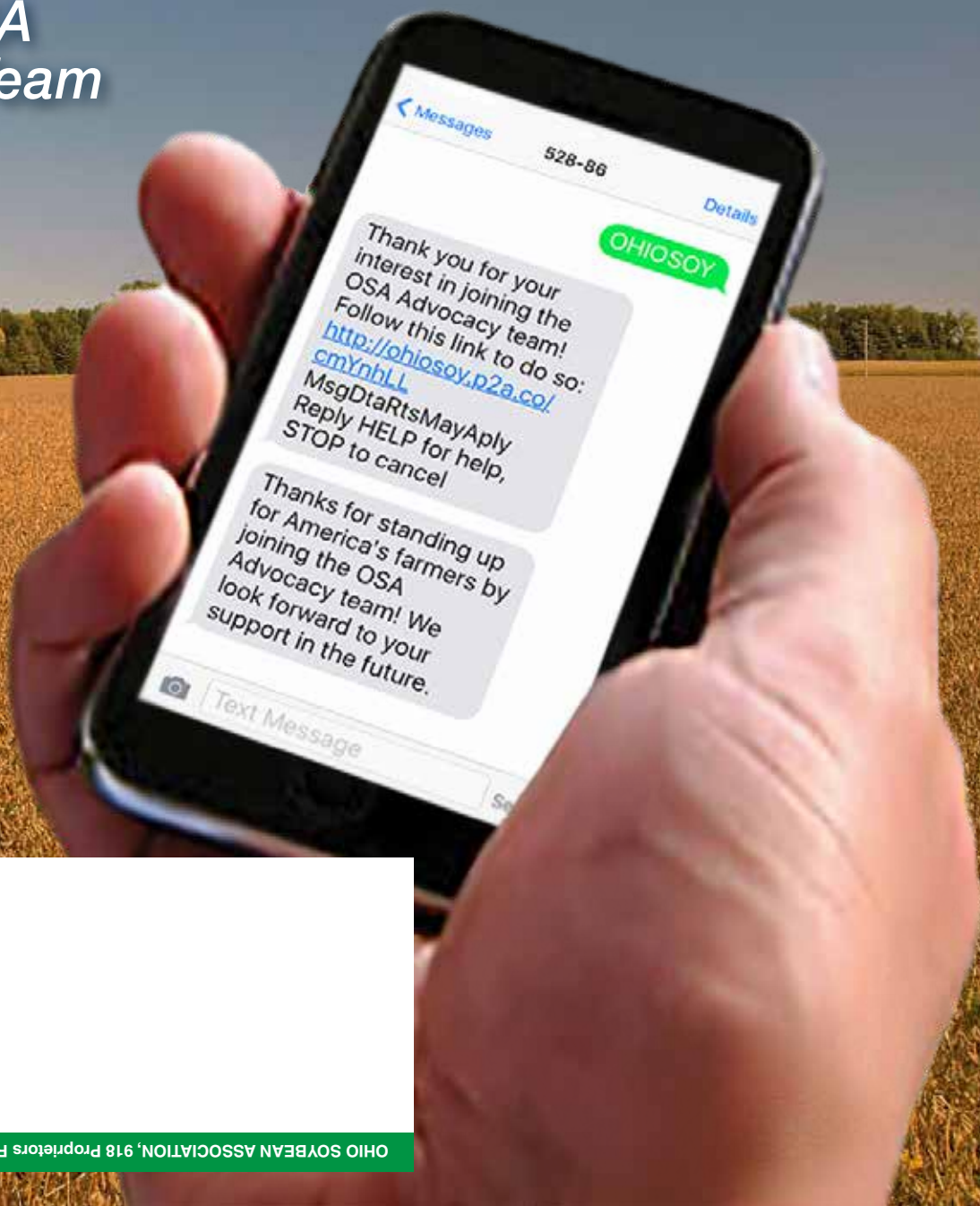
MARCH/ APRIL 2017

A PUBLICATION OF THE OHIO SOYBEAN ASSOCIATION

Making Your Voice Heard Wherever You Are

*Join the OSA
Advocacy Team*

Page 6



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National Ag Day: March 21, 2017

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The Agriculture Council of America is proud to celebrate the nutritious and plentiful contributions of our country's farms on National Agriculture Day.

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Ohio Soybean News

March – April 2017
Vol. 7, No. 2

A PUBLICATION OF THE OHIO SOYBEAN ASSOCIATION

COVER STORY:

At times it can be difficult to make your voice heard, but when it comes to soybean farm policy — not anymore. Phone2Action and the OSA advocacy team is a unique tool that allows you to voice your opinion on public policy issues that matter to you, right at your fingertips!

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Adam Graham

Ohio Soybean Association Chairman
Logan County soybean farmer

2016 was a great year for soybean exports! In fact, the 2015/2016 crop marketing year saw record U.S. export numbers. The U.S. exported 2.37 billion bushels of soybeans which is an increase of 60 million bushels over the previous year. Soybeans are exported to many countries such as Mexico, Egypt, Japan and Indonesia. And to put it in perspective, one out of every four rows of soybeans is exported

to our biggest customer, China. While customers abroad are important to U.S. soybean farmers, so are customers at the local and national level. The Ohio Soybean Association (OSA) is working to provide leadership for Ohio's soybean farmers in promoting effective policies and legislation here in Ohio and in Washington, D.C., which is why I'm excited to tell you about a new advocacy opportunity that YOU can get involved with.

The new program, OSA Advocacy Team using Phone2Action technology allows your voice to be heard on public policy issues that matter to you. The unique platform allows you to send an email, have a call patched through to your legislator's office or even interact through Facebook and Twitter. I'm enthusiastic about this new platform that allows everyone to get involved and make an impact on the Ohio soybean industry. Steps to signing up are simple and I encourage you to read more on page 6 of this issue of the Ohio Soybean News.

Speaking of contacting elected officials, several OSA board members will be traveling to Washington, D.C. in March to meet with elected officials for face-to-face meetings. We will discuss factors that might affect farmer's profitability including GMO labeling, export/trade negotiations, water quality, state budget, the 2016 state and national election results, farm bill and anything that directly affects farm policies and regulations. This is our time to meet with policy makers and I look forward to giving you an update on how those meetings went.

If you have input about the soybean industry in Ohio or are looking for ways to get more involved, don't hesitate to reach out to OSA at 614-476-3100. We welcome your ideas and want to make this another successful year for the Ohio soybean industry.

Sincerely,

Adam Graham

Ohio Soybean Association Chairman
Logan County soybean farmer



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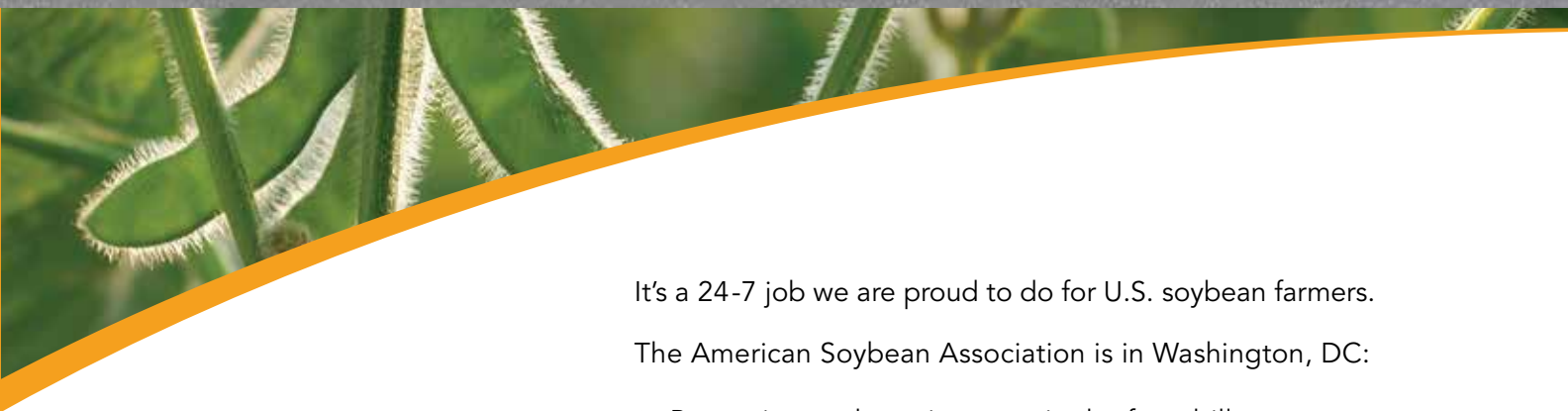
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Policy makers take notice of ASA.



It's a 24-7 job we are proud to do for U.S. soybean farmers.

The American Soybean Association is in Washington, DC:

- Protecting soybean interests in the farm bill
- Fighting against burdensome EPA regulations
- Growing soybean trade opportunities

That's why ASA matters.





Join OSA's New Advocacy Team!

At times it can be difficult to make your voice heard by lawmakers, but when it comes to soybean farm policy — not anymore. The OSA Advocacy Team using Phone2Action is a unique tool that allows you to voice your opinion on public policy issues that matter to you, right at your fingertips!

Phone2Action allows you to engage with your legislators in a variety of ways:

- ▶ You can send an email concerning a vote on an upcoming issue, or have a call patched through directly to their office.
- ▶ You can also interact with them through Facebook and Twitter, while gaining additional support through your own friends and followers.

text
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to 52886

No matter the issue, this tool provides an easy way to get involved.

This grassroots effort is only possible through your involvement. You simply provide your contact information and you'll be notified when there are opportunities to act, without taking much time out of your busy schedule.

If you are interested in joining the OSA Advocacy Team and making your voice heard, text OHIOSOY to 52886. A link will be texted back to you. Follow this link, making sure to fill in your name, email, and address so the app can link you to your legislators. OSA will never share or sell your information to third parties. If you have questions regarding the Phone2Action tool, call the OSA office at 614-476-3100. ♦

**Making your voice heard
wherever you are**

Join our advocacy team
Text OHIOSOY to 52886



YOUR MEMBERSHIP SUPPORTS YOU HERE.



Ohio soybean farmers consistently rank state and federal regulation as their top concern. The Ohio Soybean Association (OSA) provides leadership for Ohio's soybean farmers in promoting effective policies and legislation. OSA represents its members at both the state and federal levels, and works cooperatively with its national affiliate, the American Soybean Association. Soybean checkoff dollars cannot be used for lobbying and legislative activities. That's why your OSA membership is vital to making the soybean industry in Ohio successful and profitable for years to come.

**To learn more, visit
soyohio.org/membership.**



YOUR CHECKOFF SUPPORTS YOU HERE.



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 development and education to maximize profit opportunities for soybean farmers.

**To learn more, visit
soyohio.org/checkoff.**





American Soybean Association Launches Pod Policy Blog

The American Soybean Association (ASA) recently launched Pod Policy, a soybean blog that is dedicated to national policy issues affecting soybean farmers across the country.

More than an issue update or backgrounder, Pod Policy aims to dig deeper into policy questions while providing short format viewpoints on policy happenings on Capitol Hill and nationwide. Below is a snap shot of the latest posts. ♦

ASA Looks Forward to 2017

The American Soybean Association (ASA) will pursue an aggressive legislative and regulatory policy agenda in 2017.

Legislative efforts will focus on expected congressional action on the 2018 Farm Bill, tax reform, and transportation infrastructure, while regulatory work will focus on rolling back Obama-era regulations on water quality, improving the regulatory approval timeline in the U.S. and export markets for new biotech traits. ASA will also continue our effort to establish and expand trade relationships with our partners abroad.

► **Farm Bill** — ASA will look at ways to strengthen the risk management systems in place for farmers, and what changes need to be made within risk management programs so that they can function to their highest potential. This may include fixes to the ARC county-level option for corn and soy, and to programs for cotton and dairy.

Outside of Title 1, ASA will support increased funding for export promotion programs like Market Access Program and Foreign Market Development, Energy Title programs such as the Bioenergy Program for Advanced Biofuels, Biodiesel Education Program, and Biobased Market Program, as well as

for ag research and a stronger role for USDA in global food security programs. ASA will support a strong federal crop insurance system as well, and the continued inclusion

of nutrition programs within the farm bill. ASA will continue to oppose reduced funding, additional eligibility requirements, or means testing for conservation programs or crop insurance.

► **Tax Reform** — While comprehensive tax reform is a top priority of the Republican led Congress and President Trump, ASA will continue to push for extension and reform of the biodiesel tax credit, which expired at the end of 2016.

► **Regulations** — ASA will support withdrawal or block implementation of the Waters of the U.S. Rule.

► **Biotechnology** — ASA will work collaboratively with the Coalition for Safe and Affordable Food to implement the National Biotech Food Labeling Standard that will exempt products with ingredients derived through plant breeding techniques and that do not contain rDNA protein.

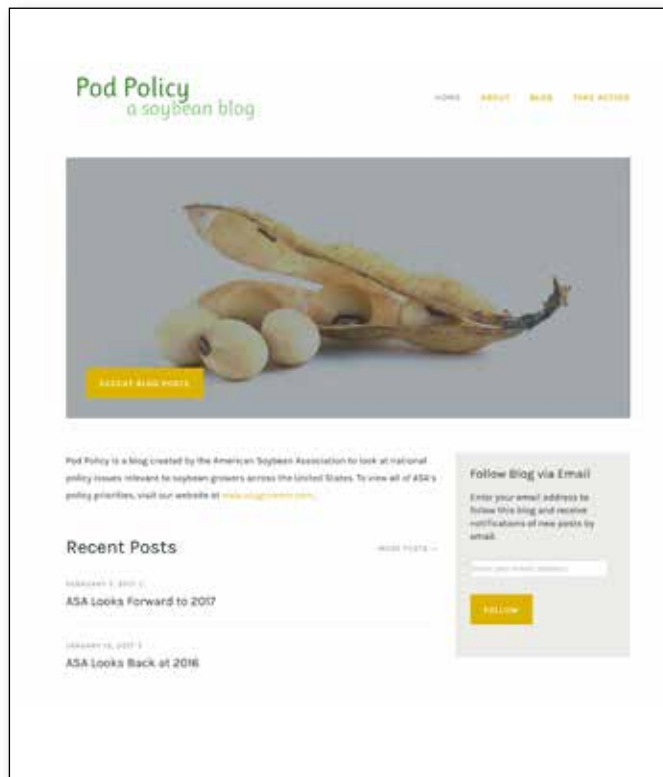
► **Crop Protection** — ASA will support the use of sound science in approving new

products, and we will continue to engage on pollinator health issues, including habitat restoration and pesticide registrations. We will keep a watchful eye on the ongoing trend of mergers within the agriculture industry.

► **Renewable Fuel Standards** — ASA will support maintaining and establishing appropriate annual volume requirements for biodiesel within the Renewable Fuel Standard (RFS). ASA will also support enforcement responses to trade violations by biodiesel importers.

► **Trade** — ASA will work directly with the Trump Administration to align its policies to reflect the dependence of U.S. agriculture, and soybeans in particular, on exports, including continuing regional and bilateral trade agreements and maintaining an open and positive trading relationship with China.

For more posts, visit asapodpolicy.wordpress.com. ♦





Soy Select Aims to Grow Leadership in Agriculture



Soy Select program participants during a Statehouse visit in November

Agriculture faces numerous challenges; from production methods to prices, conservation practices and the science behind it all. These challenges require strong leaders from diverse backgrounds and create a need to cultivate and engage people with fresh perspectives to take on critical roles in the industry.

A few years ago, the Ohio Soybean Association (OSA) Board of Trustees noticed the need for increased diversity and additional highly qualified leaders in their organization. That discussion led to the formation of a unique leadership program; coined as “Soy Select.” With several successful agricultural leadership

programs already in place, Soy Select strives to be unique with less scheduled group programming and more assistance or coaching for participants to map out their own leadership path.

“We engage each person and try to identify their goals and tailor the program to help them achieve success. It has been well-received; we’re still in our first year, but we have a good number of participants and are continuing to identify a few more,” said Todd Hesterman, OSA president and soybean farmer from Henry County.

Staff members will be working with participants over the course of a year or

more to curate training and opportunities to advance current skill levels and help them thrive as industry leaders.

“There are already some great leadership programs out there, for example Ohio Farm Bureau’s AgriPOWER and DuPont Young Leaders, that have set curriculum and goals for participants,” said Melanie Wilt with Wilt PR in Springfield, Ohio. “What we want is to inventory the leadership experiences individuals have been part of and work up from there with a focus on the goals of each individual.”

Participant goals may include sitting on a state or national board, becoming a visible thought leader or spokesperson in the industry, attending an international trade tour or developing better relationships in the world of politics. To help participants focus their goals, the first group session centered on finding individual strengths and determining which areas they are already at a high level with and what areas need developed.

The second program was a “State House Experience” with a line-up of speakers that offered something for all participants. Those who have previously worked with their legislators were able to develop more meaningful connections, while those who may have been at the Capitol for the first time were able to learn more about how they can make an impact and be an effective influence while representing agriculture.

“The politically driven session had a great set of speakers, I learned quite a bit that day. If all our sessions are as good as that, it’s going to be a great program,” said Trish Levering, a Soy Select participant →



Building Membership and Grassroots Advocacy

from Fredericktown, Ohio. “I chose to take advantage of the program because of how it is approached. I will be able to build on skills from leadership programs I’ve already been involved in and delve deeper into new opportunities as I move forward.”

Trish works as a Pioneer sales rep and licensed crop insurance agent in addition to working on the farm with her husband where they grow soybeans and corn and operate a cow calf operation. She is a long-time member of Farm Bureau, OSA, Ohio Corn & Wheat Growers and Ohio Cattlemen’s Association. In Soy Select, she is a more advanced participant having completed the AgriPOWER program and

serving in various roles with her county Farm Bureau — including four years as president — as well as serving as co-chair of the Ohio Beef Expo’s Junior Show Committee and participating in the DuPont Young Leaders program.

Crediting part of her commitment to involvement to her parents example, Trish says she was always told “If you’re not the one showing up and being involved in the



SOYSELECT

organizations that impact your operation someone else is making those decisions.”

That sentiment is likely shared by all participants and is exactly why programs like Soy Select are critical to the future strength of the agriculture industry. With many of today’s leaders preparing for retirement or handing the reigns over to the next generation, it is important that the next generation finds their passion and realizes the importance of stepping into leadership roles in these organizations that work at the state and national level to promote the industry and protect the rights of farmers every day. ♦

Soy Select program participants visit with Ohio political leaders Aaron Pickrell and Mike Hartley during Statehouse experience in November.

WHAT IS THE OPTIMUM NUMBER OF SOYBEAN SEEDS TO PLANT PER ACRE?

Keep up with the latest research from OSU, funded in part by your soybean checkoff dollars.
Go to soybeanrewards.org to learn more.



Brought to you by Ohio soybean farmers and their checkoff.

Soybean Rewards
Knowledge to Grow





WHETHER YOU'RE PLANTING YOUR FIRST SOYBEAN CROP OR YOUR FIFTIETH, THE CHECKOFF WORKS FOR YOU.

Photo Courtesy of the United Soybean Board

Whether you've been planting soybeans for years, or you're just starting out, the Ohio Soybean Council is investing in projects designed to help you maximize earnings on your farm now and for generations to come. From yield research to creating demand, your checkoff dollars are working hard for you. To learn about what the Ohio Soybean Council is doing for you, visit **soyohio.org**.



Brought to you by Ohio soybean farmers and their checkoff.



Soybean Farmers Back Bill to Reduce Regulatory Burdens

The Ohio Soybean Association (OSA) and the American Soybean Association (ASA) are putting their support behind the Reducing Regulatory Burdens Act (H.R. 953), introduced by Ohio Congressman Bob Gibbs.

The legislation aims to reduce burdensome regulations by eliminating duplicative permitting requirements for pesticide applications. Pesticide applications are already federally regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). However, a 2009 Federal

court decision requires entities to also obtain a National Pollutant Discharge Elimination System (NPDES) permit under the Clean Water Act when pesticides are sprayed on or near waterways. This legislation would remove that requirement.

The U.S. House of Representatives Committee on Agriculture held a mark up of this bill in February. Gibbs has introduced this bill in previous years with OSA's and ASA's support, along with the support of many other agriculture organizations. ♦



CONGRATULATIONS, OHIO SOYBEAN ASSOCIATION, FOR ADVOCATING ON BEHALF OF OHIO SOYBEAN FARMERS FOR THE LAST 50 YEARS.



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John Motter and Ron Moore Recognized at 2017 Commodity Classic



John Motter

Ohio soybean farmer
and United Soybean
Board chairman



Ron Moore

Illinois soybean farmer
and American Soybean
Association president

The American Soybean Association (ASA) and United Soybean Board (USB) recently honored John Motter, soybean farmer from Janera, Ohio who serves as chairman of USB and Ron Moore, soybean farmer from Roseville, Illinois who serves as president of ASA at the 2017 Commodity Classic.

John Motter previously served as vice chair, treasurer and secretary of USB. John serves on the Ohio Soybean Council Board of Trustees, where he previously served as chairman, vice chairman, treasurer and secretary. John is a member of Ohio Farm Bureau and previously served on the State Extension Advisory Board.

Ron Moore is a soybean farmer from Roseville, Ill., and past chairman of the Illinois Soybean Association. Moore previously served as vice president and secretary. He also serves on the Board of Directors of the United States Soybean Export Council (USSEC).

A joint reception brought together farmers from all across the United States to meet with their national leadership and celebrate their service to the national soybean industry. ♦

Thank you to our sponsors for their valued partnership!



2015/2016 Crop Marketing Year Sees Record U.S. Export Numbers

U.S. soybean farmers enjoyed another year of record export numbers in the 2015/2016 marketing year with the U.S. Census Bureau reporting more than 2.37 billion bushels of soybeans being exported, an increase of 60 million bushels over the prior year. When soybeans, soybean meal and soybean oil are all included, more than 60% of the U.S. soybean crop was exported to international markets.

While there are a number of contributing factors, the global demand for soybeans is growing and the U.S. is well positioned for soybean farmers to benefit from the U.S. soy industry's reputation as a consistent and reliable supplier. Soybean checkoff programs contribute heavily to the success of U.S. exports, especially through the efforts of the U.S. Soybean Export Council (USSEC) in more than 70 countries promoting the advantages of U.S. soy to buyers worldwide.

"In Ohio, export numbers tend to follow the national trend, so we would expect that about 60% of the Ohio soybean crop is exported. In addition, Ohio benefits from significant production of specialty and food grade soybeans. It varies yearly, but Ohio is consistently between eight to 15%, while most states are in the low single digits," said Kirk Merritt, Executive Director of the Ohio Soybean Council.

The Asian market — Japan, Taiwan, South Korea, Singapore, and Indonesia — favor Ohio specialty and food grade soybean exports making those markets particularly important to Ohio farmers.

While Ohio is a leader for food grade and specialty soybeans, according to Merritt, it is still the commodity market that drives record export numbers, with China being the largest market, taking

in more than all other export markets combined at over half of total exports.

"The volume of commodity market exports is extremely noteworthy and I think the impact on the bottom line for soybean farmers is hard to overestimate — it has been very substantial," said Merritt.

Ohio soybeans also tend to have a protein advantage. Whether for commodity use or food grade, the protein content is a large selling point and part of the package for direct marketing work that is part of the Ohio soybean checkoff. Promoting the quality, reliable delivery and protein content allows the Ohio Soybean Council to create a preference for Ohio soy and expand key markets. Recent projects have been focused in key Asian markets such as Japan, China, Taiwan, Indonesia, Vietnam, South Korea and Singapore.

The consistent growth of demand for U.S. soy can be attributed to the success of checkoff programs working to open new markets and the work of state and national leaders to overcome barriers and build opportunities through beneficial trade agreements.

It is truly a collaborative effort with each state checkoff program working individually, but also coming together with the United Soybean Board and supporting efforts of the U.S. Soybean Export Council to drive more soybean exports. In addition, OSC has worked with the U.S. Meat Export Federation to export U.S. pork to Japan, and the U.S.A. Poultry and Egg Export Council to promote U.S. chicken in Mexico and turkey in Central America.

"We're always trying to leverage our checkoff funds for the best returns, and sometimes that means working across industry lines with livestock and poultry to promote the export of products that add value for us through the consumption of soybean meal here at home," said Dave Dotterer, Chair of the Ohio Soybean Council's Demand Committee, and a soybean farmer from Wayne County.

International markets are very competitive, but U.S. soybean farmers are continuously able to provide a consistent and quality product that protects the status of U.S. soy as a favorite among buyers. ♦





Ohio Soybean Council

NOTICE OF ELECTION

Ohio Soybean Council Board of Trustees

Four Ohio Soybean Council (OSC) Board of Trustees districts are up for election in 2017. OSC Trustees serve three-year terms, and may be elected to as many as three consecutive terms. Two incumbents currently filling the seats up for election in 2017 are term-limited and two are eligible to run again.

District 3:

- Ashland, Ashtabula, Columbiana, Cuyahoga, Geauga, Lake, Huron, Lorain, Mahoning, Medina, Portage, Richland, Summit, and Trumbull Counties
- Jeff Magyar (incumbent) is eligible to run again

District 4:

- Defiance, Paulding, and Van Wert Counties
- Terry McClure (incumbent) is term-limited and not eligible to run again

District 6:

- Crawford, Seneca, and Wyandot Counties
- Steve Reinhard (incumbent) is term-limited and not eligible to run again

District 11:

- Clark, Greene, and Madison Counties
- Charlie Troxell (incumbent) is eligible to run again

Candidates must have grown soybeans within the last three years and must reside in one of the counties listed above to be eligible. If interested, candidates must complete a petition which can be accessed on the OSC website at www.soyohio.org. Petitions must be signed by at least 15 soybean producers in the district. The Ohio Department of Agriculture will verify petition signatures and thereby determine eligibility of candidates to run for the OSC Board. Elections will occur in the summer of 2017.

All petitions must be mailed directly to the Ohio Department of Agriculture and must be postmarked by July 3, 2017.

For more information on OSC's mission and activities, please visit our website at www.soyohio.org. For questions, please contact Kirk Merritt, OSC executive director at 614-476-3100 or kmerritt@soyohio.org.

Farmers Helping Farmers Goal of Precision Ag Review Website

Farming in the digital age means farmers must make decisions beyond which seed variety to plant or what row spacing is the best and are more frequently looking at topics like what autosteer system is most accurate or at what point variable rate spray application will pay off for their operation. While farmers can research product pricing and talk to a sales representative about functionality, when it comes to real on farm use and experience it is hard to find unbiased information.

The Ohio Soybean Council (OSC) and soybean checkoff program recently took notice of this gap in information and partnered with Heartland GIS to launch Precision Ag Reviews, a website dedicated to farmer reviews of precision agriculture products with a forum for users to further discuss their experiences and ask questions of fellow farmers.

“The idea originated during strategic planning around farm critical infrastructure,” said Barry McGraw, OSC’s Director of Product Development and Commercialization. “Precision ag is growing, but there was no complete or independent resource available for farmers to research products and decide what will bring value to their operation.”

To make the concept a reality, project leaders began research and development with farm visits that included a diverse group of farmers — taking into consideration age of farmers and diversity of operations. They discussed features to include, how to organize the ratings and information, what areas would be most helpful and what keeps them coming back to a website.

“Looking at commodity prices, there’s not a lot of room for farmers to make mistakes with these big-ticket purchases. Furthermore, many of these decisions will have a cascading effect as to what additional technologies are additionally available,” said Todd Tucky of Heartland GIS who serves as project manager for Precision Ag Reviews.

“This site intends to be a one stop shop for farmers to get reviews, seek expert advice and keep an eye on the horizon for new agricultural technologies.”

Today’s consumers place a high importance on consumer reviews made popular with business models like Amazon. In addition to listening to a sales pitch or reading a brochure they want to know how people who paid for a product feel about the purchase.

Precision Ag Reviews allows users to rank products based on cost, ease of use, technical support, customer service and overall value. They can also provide a paragraph on their experience with the product and whether it added value to their farm, or if it wasn’t a good fit for their number of acres or crop practices and how they feel about the return on investment.

“As profit margins continue to narrow, farmers are very aware of each area of expense for their operation. We hope this site will help them separate the technology or products that would be nice to have from those that will truly make a difference for their specific farm or situation,” said Terry McClure, Chairman of OSC Board of Trustees. “The key to its success depends on farmer participation; we encourage those farmers who have invested in technology to review products on the site and those who are considering purchases to use the forum to ask questions of fellow farmers.”

The site is pre-populated with common products, but also allows users to add products that aren’t listed. Reviews can be posted without registering on the site, while users must sign up to be a part of the forums. Registering also offers the option to opt-in to receive email updates on specific areas of technology that they choose. Administrators are also focused



Explore the new website on your desktop, tablet or mobile device at www.precisionagreviews.com

on user privacy and keeping information solely for use of the site with no third-party distribution.

Precision Ag Reviews also features an area for expert advice which will be a curated mix of the best information that is already available alongside new easy to digest videos and articles on precision ag practices and emerging technologies. The site also has a calendar that will include events such as Farm Science Review and other field days where farmers can see technology in action.

The site is monitored to prevent vendors from boosting their own products and forums will be moderated for appropriateness, but the goal is for users to have honest and open discussions. As an OSC project, the focus is on Ohio, but there is potential for it to grow as a nationwide resource and an online portal where farmers are helping farmers. ♦



General Motors Announces 20 for B20 in its Diesel Vehicle Lineup

GM Expands its B20 Biodiesel Capable Lineup with New Cars, Crossovers, Trucks

General Motors is taking bold steps to expand the U.S. diesel vehicle market beyond its traditional stronghold in full-size pickups, and providing more options than ever before for customers to reap the additional benefits of fueling up with B20 biodiesel blends, America's Advanced Biofuel. With eight new diesel vehicle options hitting the roadways in 2017–2018, General Motors now offers a full line-up of twenty different diesel models, from passenger cars, to pickups and SUVs, to commercial vans and low cab forward trucks — all of which are approved for use with B20.

John Schwegman, Director of Commercial Product and Medium Duty Product for General Motors, delivered the welcome news to an enthusiastic crowd at the National Biodiesel Conference & Expo today in San Diego.

“Diesel propulsion deserves wider consideration by fleet managers across the country,” Schwegman said. “With biodiesel production and retail distribution expanding, and so many proven benefits, we believe more fleets will embrace the technology as part of their sustainability plans. If our diesel customers fueled exclusively with biodiesel, we estimate that consumption of petroleum-based fuels

would be reduced by hundreds of million gallons annually.”

GM's announcement, along with additional new diesel model introductions this year, sends a strong signal that diesel remains an important option for meeting the current and future needs of U.S. drivers. Including 2017 and 2018 models, Chevrolet and GMC will offer one of the largest portfolios of vehicles capable of running on B20, a blend of 20 percent biodiesel and 80 percent ultra-low sulfur diesel.

Donnell Rehagen, CEO of the National Biodiesel, welcomed the news from GM by stating, “General Motors is a shining example of a company that is getting it right by continuing to invest in new technology diesel engines to meet consumer demands for powerful, clean and fuel-efficient vehicles capable of running on clean, renewable B20 biodiesel blends. We applaud GM for its efforts, and look forward to partnering with you in your continued support for biodiesel as your diesel vehicle product line continues to expand.”

Made from an increasingly diverse mix of resources such as soybean oil, recycled cooking oil, and animal fats, biodiesel is a renewable, clean-burning diesel replacement that can be 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 biodiesel reduces greenhouse gas emissions by more than 50 percent when compared with petroleum diesel. Americans used over 2.1 billion gallons of biodiesel last year. ♦



GM Fleet's B20 Capable Options Include:

- ▶ Chevrolet Express full-size vans (Cargo, Passenger, Cutaway)
- ▶ Chevrolet Low Cab Forward commercial truck
- ▶ Chevrolet Colorado mid-size pickup
- ▶ Chevrolet Silverado (2500HD, 3500HD, Chassis Cab) pickups
- ▶ Chevrolet Equinox crossover vehicle
- ▶ Chevrolet Cruze (Sedan, Hatchback) passenger cars
- ▶ GMC Savana (Cargo, Passenger, Cutaway) full-size vans
- ▶ GMC Sierra (2500HD, 3500HD, Chassis Cab) pickups
- ▶ GMC Canyon mid-size pickup
- ▶ GMC Terrain crossover vehicle
- ▶ In 2018, Chevrolet will add a fifth diesel-powered truck line: a new Class 4/5 conventional cab truck being developed jointly with Navistar.

Soybean Aphid Genome Complete

By Andy Michel, Field Crops Entomologist, Ohio State University

My laboratory at Ohio State University focuses on understanding how soybean aphids are able to overcome aphid resistance in soybean. Through this research, we hope to develop strategies that prevent the spread and increase of aphids capable of breaking aphid resistance. In the course of generating DNA sequences with projects funded by the Ohio Soybean Council (OSC) and the North Central Soybean Research Program (as well as USDA-NIFA and the Center for Applied Plant Sciences at Ohio State University), we were able to sequence the entire soybean aphid genome.

This genome represents the 4th aphid species with a completely described genome (in addition to the pea aphid, Russian wheat aphid, and green peach aphid). It will further

advance our ability to identify soybean aphid genes responsible for overcoming resistant soybean, and hopefully lead to a wider use of resistant soybean. In addition, as reports of insecticide resistance emerge from colleagues at Minnesota and Iowa, the genome will provide targets to understand resistance and potentially develop markers to monitor the frequency of insecticide-resistant aphids.

This work represents a tremendous effort and collaborations among my laboratory, Ohio State University, and land-grant universities, many of which are located within the North Central region. Our genome was constructed from soybean aphids collected across the North Central region, from collaborators participating in the soybean aphid

The soybean aphid was introduced into the United States sometime in the late 1990s. It was first observed in 2001 in southern Wisconsin and soon afterwards became noticed in most other northern soybean-growing states and Ontario.

research group led by Dr. Kelley Tilmon at Ohio State University.

None of this would be possible without the generous support for soybean production research from OSC and the North Central Soybean Research Program. I'd like to express my gratitude to these checkoff organizations and to the soybean farmers in Ohio and the North Central region.

For more information, visit www.ncsrp.com. ♦



OSC Reichhold Partnership Develops Two New Soy Opportunities

Soybeans don't always get a lot of recognition; they are masters of blending in with most any product they are added to, often improving sustainability and environmental stewardship without sacrificing performance. Recently, the Ohio Soybean Council (OSC) and soybean checkoff program partnered with Reichhold — a leading global supplier of resin polymers for paints and coatings — to research two new ways to incorporate soy into their resins targeted for specific end-use applications. The first project is a high performance water-borne oil modified urethane for residential and commercial hardwood floors; the second is an alkyd latex for water-borne stain blocking primers.

"Soybean oil is something that Reichhold has traditionally used over the years to manufacture many of our resins that require a balance of performance and economics, and it is a building block for many of our chemistries. The self-crosslinking of the soybean oil in the cured film provides improved performance properties through a molecular weight increase," said Scott Cooley, North American Coatings Technology Director at Reichhold. Soybean oil also assists with flow, leveling and adhesion that are essential qualities for any coating.



Reichhold does not make stains or paints themselves, but develops the resin formula for many major paint brands.

Reichhold's developmental efforts that are focused on a soy-based water-borne oil modified urethane are contrary to the customary solvent-borne offerings that have been heavily used in the wood flooring market. "Solvent-borne oil modified urethanes are the dominant product used in the wood flooring market, but there is a market need for better water-borne oil modified urethanes," said Cooley. "The existing oil modified water-borne urethane products are low solids and thus require multiple coats, which in turn increases the amount of time needed by contractors to achieve the desired finished film thickness."

Reichhold's novel high solids water-borne oil modified urethane approach allows for the coating to be applied at a higher film thickness while performing more consistently like a solvent-borne product. Currently the resin is in beta testing at select end use customers to verify these improvements. Reichhold is confident in this new approach and its ability to meet the latest environmental regulations and performance targets, and if testing goes as anticipated, then this water based oil modified urethane will help maintain soy's place in the wood flooring market as preferences change from solvent-borne to water-borne products.

The second project, development of an alkyd latex for water-borne stain

blocking primers, is still in the early phases of research and development with team members looking at the best technology approach. Stain blocking primers are frequently used to cover stains resulting from water and smoke damage or other hard to cover stains commonly found in older homes. The best performing stain blocking primers currently available are solvent-borne systems that are high volatile organic compounds and also high odor.

According to Cooley, current water-borne stain blocking primer options in the market do not work very well since many of the stains are water soluble which allows the stain to resurface in the top-coat. Reichhold's goal is to develop a resin that satisfies customers who are seeking a high performing product with low volatile organic compounds and low odor. This will require a brand new technology that doesn't exist in the industry today, but their researchers are working diligently to meet the challenge.

"Many solvent-borne systems have soybean oil in them already, and as we develop a new alkyd latex resin for water-borne stain blocking primers we plan to incorporate soybean oil to maintain the self-crosslinking properties," said Cooley. ♦

SCN Coalition: Take Two

Millions of dollars have been spent to combat the most damaging soybean pathogen in North America. The defense discovered decades ago is beginning to falter and researchers are concerned about the challenges ahead. As a consequence, nearly 40 university, checkoff and private scientists and growers gathered in mid-December to share management information and discuss the development of the second Soybean Cyst Nematode (SCN) Coalition.

“There’s a long history with the SCN Coalition because in the 90s when it originally started, SCN was causing a lot of yield loss and growers didn’t have the information to manage it,” said Sam Markell, Ph.D., associate professor and extension plant pathologist for North Dakota State University. “We’re in almost the exact same situation again because resistance is starting to fail. We need to look at it a different way.”

The original SCN Coalition lasted only a couple years, but in that time thousands of growers across the North Central United States began testing for SCN and actively managing it. However, those same management tools are not working as well as they used to, and many growers don’t realize that the pathogen is changing.

This issue doesn’t affect one state or even one region. As of December 2016, SCN had been confirmed in more than 30 states, Puerto Rico and Southern Canada. SCN continues to spread within the states and is being confirmed in new counties and fields every summer. Unfortunately, the pace of spread isn’t expected to slow down any time soon.

Not helping the issue are several challenges unique to the SCN pathogen and how it has been handled over the last few decades. The most concerning of which is

farmer’s apathy toward the situation. As part of a 2015 survey, researchers found that 45 percent of farmers didn’t think identifying SCN was important and of these farmers, 69 percent didn’t think SCN was a serious issue. This means not only is SCN the biggest yield robber for North American soybean farmers, but those same farmers aren’t aware of the damage being caused.

“Growers a generation ago quickly learned about SCN and started managing it with the best tools they had,” said Markell. “Once something is under control and being managed you don’t tend to actively think about it as much. The problem with SCN is that it’s been changing, so the old tools aren’t as good meaning the growers aren’t managing it as well as they thought.”



Other challenges facing SCN researchers include biology, math exercise and the definition of resistant. The way SCN attacks a soybean plant is through the roots, so until the damage is extremely severe, the leaves and canopy may appear healthy. This means casual scouting would not determine the issue. Soil sampling, testing and egg counts are necessary to determine how severe the problem is.

Math exercise

To explain how severe the SCN problem can get if not caught early, Greg Tylka, Ph.D., Iowa State University, offered a math exercise. If half a cup of soil starts with 100 eggs, around half of those eggs will be female and produce 250 additional eggs each. Even with a 95 percent egg mortality rate, after three generations there would be 24,414 eggs in that same half-cup of soil. Depending on the environment most north central states will experience 3-6 SCN generations in one growing season, so that number could be exponentially higher for some farmers.

“Every 24 days a new generation of SCN is born,” said Tylka. “That means they can go from below the threshold to problematic very quickly.”

Definition of Resistance

Many farmers who know they have an SCN issue are planting a ‘resistant’ variety, but what does resistant mean? In science the definition is less than 10 percent reproduction across a single generation, measured in a greenhouse test. Legally there is no definition for SCN resistance so a bag of seed with 75 percent (or higher) susceptibility could be labeled resistant.

Research presented at the coalition showed that in a greenhouse study examining the level of reproduction on 61 different soybean varieties, 58 of which were labeled resistant, all but one of them allowed reproduction above the 10 percent scientific threshold. With the same varieties in a field setting, 40 of the 61 varieties allow high rates of reproduction. In other words, the majority of those varieties tested were technically not resistant.

Genetics

Adding to the resistance problem is the fact that the nematode is overcoming the two most common soybean breeding lines, PI 548402 (commonly known as Peking) and PI 88788. Or stated another way, SCN populations are becoming resistant to the resistance. Reproduction rates of SCN on both sources of resistance has risen above the scientific threshold in most areas. In the early 90s there was almost no reproduction on the varieties

“Every 24 days a new generation of SCN is born.”

— Greg Tylka, Ph.D.

with Peking and PI 88788 resistance, but overuse is leading to resistance problems for many farmers.

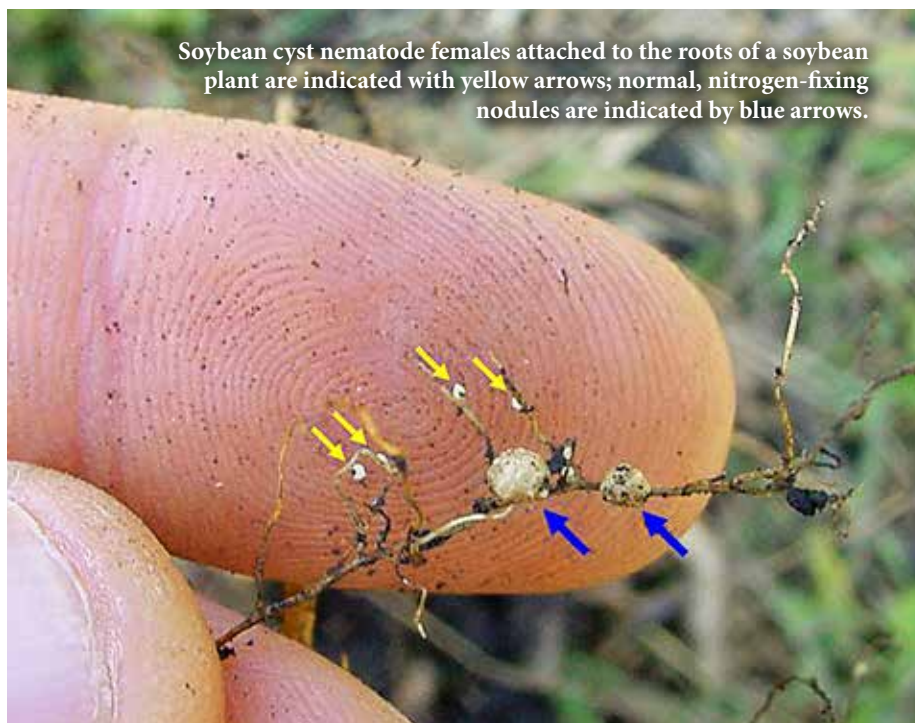
“There is a lack of resistance diversity in commercially available varieties leaving farmers with little to no choice in what type of genetic resistance they will use,”

said Tylka. “The usefulness of traditional resistant varieties will continue to decline and unfortunately new varieties with novel sources of traditional resistance aren’t likely.”

All of these factors led to the need for the second SCN Coalition. The first part of which was to bring a diverse group of academia, industry and commodity groups with farmers to discuss how to combat this pathogen. The event began with the 2016 National SCN Conference and concluded with the SCN Coalition meeting. Two days of research presentations and discussions led to a greater understanding among all of the groups of the collaboration that will need to take place to wipe out SCN.

“We’re all going to have to work together on this,” Markell said, referring to the diverse group in attendance, and “It’s critical that growers have a strong voice in the development of the 2nd SCN Coalition.”

All 12 of the North Central Soybean Research Program states are involved in this project, including Ohio, along with Kentucky, Oklahoma, Tennessee and Virginia, as well as a university in Ontario, Canada. ♦



Soybean cyst nematode females attached to the roots of a soybean plant are indicated with yellow arrows; normal, nitrogen-fixing nodules are indicated by blue arrows.



ChickQuest Program Gives Kids Connection to Agriculture

With a large majority of Americans being two or more generations removed from farms and agriculture, it is rare that children get to have a first-hand experience in any aspect of the industry.

About five years ago, the Ohio Soybean Council (OSC) and soybean checkoff program took on an initiative to get agriculture into classrooms around the state by training teachers on curriculum and providing them all the materials necessary to hatch chicks

in their classrooms. The program, known as ChickQuest, has become quite popular and continues to involve new teachers every year.

"I keep thinking the workshops won't fill up, but here we are with another one sold out. We do three or four workshops a year and train between 175 to 200 teachers," said Jeanne Gogolski, a project leader with Education Projects and Partnerships. "It's been amazing; teachers know it's a good program and it spreads by word of mouth. It's also part of OSC's

GrowNextGen curriculum that helps teachers around Ohio understand and teach agriculture."

The program originated as a few classroom activities the Ohio Poultry Association organized in counties with egg production. The programming was well received and a revamped

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For many students, this may be the closest they get to a farm and is a critical lesson for them to better understand and take an interest in where their food comes from.
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curriculum project was taken on with Ohio 4-H and Education Projects and Partnerships (EP&P) was hired.

The expanded curriculum includes 18 lesson plans filled with STEM (Science, Technology, Engineering and Math) based curriculum designed to provide one activity per school day for students until day 21 when the eggs should begin to hatch. Included in the lessons is egg production and nutrition information that also highlights the soybean industry's role in animal agriculture.

Gogolski credits the success to the many partnerships and organizations supporting ChickQuest from OSC and the United Soybean Board to Meyer Hatchery in Ashland, Ohio, and Extension Agents from The Ohio State University, who have proved to be a great resource for the project and often help relocate the chicks to homes or farms once they have hatched.

"Teachers leave the training with everything they need including incubators, lab equipment, log books for students and a coupon to order fertilized eggs," said Gogolski, who worked on the curriculum and is a facilitator for the workshops. "We stay in touch with them after the training

and help them to repeat the curriculum on their own each year."

While workshops in central Ohio continue to fill up, some of the biggest success stories come from Akron and Cleveland City Schools. After Akron's science coordinator attended the workshop, they decided all their third-grade teachers should be participating in ChickQuest. Each year, any new teachers attend the workshop to ensure all third graders, around 1700 students, will participate in the curriculum. Last fall, 25 teachers in Cleveland City Schools took part in the training and many more are eager to participate.

The ChickQuest project is a great way for students to learn about food production, agriculture and the life cycle of animals. For many, it's the first time they learn the difference between eggs that will hatch and ones that are in their refrigerator and their only connection to agriculture.

It occasionally leads to some unlikely lessons for the classes as well.



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Designed by teachers, for teachers, the ChickQuest program makes it easy and enjoyable to add agriculture into classroom curriculum in a positive and informative way that engages and excites both students and teachers.

One teacher reported the class buried a chick that had not survived and it led to an emotional bonding experience for the class as they comforted each other. Another classroom ended up with a chick that wouldn't let the others access the food bowl which sparked a spontaneous and open discussion about bullying. ♦

What Teachers Are Saying:

"I wanted to let you know how much we enjoyed the workshop yesterday. It was very well run, organized, and meaningful. The curriculum materials are very well done — a teacher's dream. I can't thank you enough for helping me bring this experience to my students."

*From a teacher,
Gahanna-Jefferson Schools*

"I want to pass on a compliment regarding the recent "ChickQuest" workshop! Three teachers from my school attended the workshop. They came back fired up about the information! They have been raving about the quality of the inservice, the speakers, the materials, etc. They have hatched chicks and ducks in the past but they have a renewed sense of energy now. In short they loved it and can't wait to come back. It is not always the case that we find quality information, workshops, inservices for teachers."

*From a Principal,
Cincinnati Schools*

"Your program is one of the best teacher programs I've been involved in. Your enthusiasm was contagious. I feel ready to help my students better understand life cycles of living things. We have already ordered our eggs."

*From a teacher,
Bexley City Schools*



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