

AMERICAN WINTER 2014
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Vol.1, No.3 People. Policy. Profitability.

A PUBLICATION OF THE AMERICAN SOYBEAN ASSOCIATION

BIOTECHNOLOGY

NAVIGATING THE BIOTECH PATHWAY
The Challenge & Opportunity
of Biotechnology

SOY HORIZONS
New York Soybean Farmer
Leverages Data for Success

ISSUE UPDATE
Industry Addresses
GMO Labeling

SOY FORWARD
World Food Prize Laureate
Dr. Robb Fraley



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Vol. 1, No. 3

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The American Soybean Association (ASA) represents all U.S. soybean farmers on domestic and international issues of importance to the soybean industry. ASA's advocacy, education and leadership development efforts are made possible through voluntary membership in ASA by farmers in states where soybeans are grown.



If you believe, belong.



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SOY news



The Farmer Prince

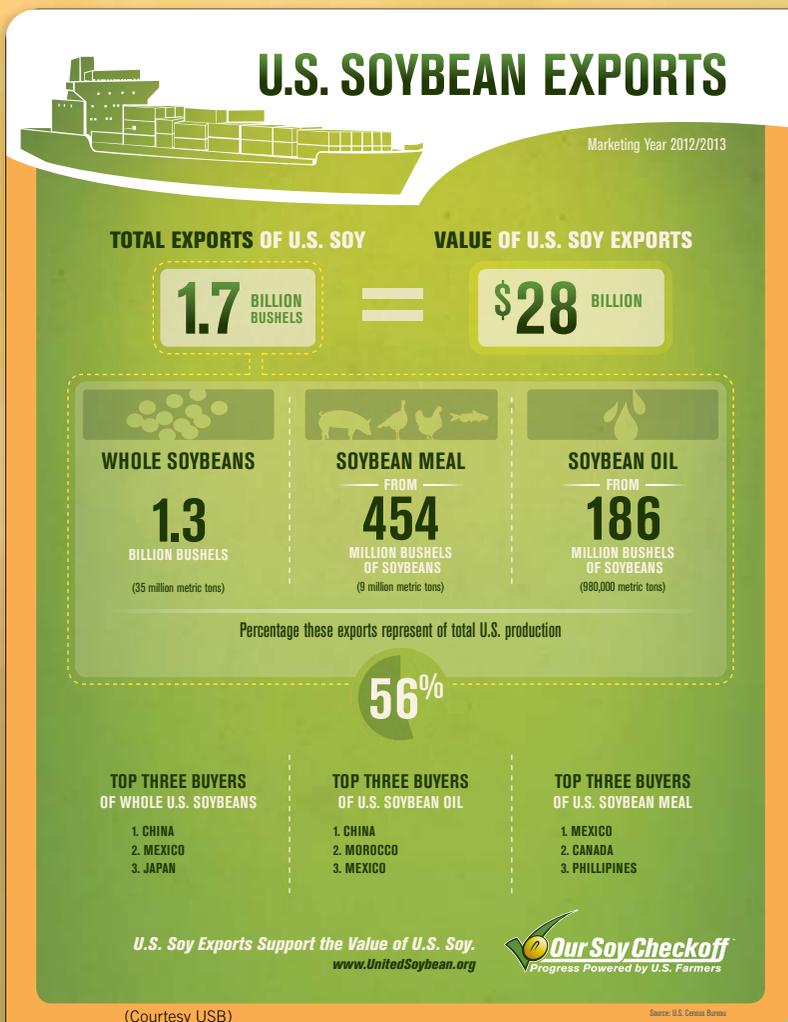
In January, **Prince William, Duke of Cambridge**, began a 10-week program in agriculture management at the University of Cambridge's Programme for Sustainability Leadership. While the program will not result in a degree, Prince William already holds a master's degree in Geography. The program, which runs through mid-March, includes on-campus elements, as well as field study. ASA reached out via Twitter and Facebook, offering to host Britain's most famous farmer on a field tour of American soy operations, but as of press time has received no response.

Scheduled for release this spring, *Farmland* is a moving documentary from Oscar- and Emmy-winning director James Moll that gives an up close and personal look at some of the young farmers and ranchers who grow and raise the food we consume daily, and into the latest farming procedures, practices and technologies that are changing and improving the landscape of modern agriculture. *Farmland* was made with support from the U.S. Farmers and Ranchers Alliance, of which ASA is an affiliate member.

Watch the trailer at www.FarmlandFilm.com.

“We cannot get distracted with all of the barrage of misinformation that comes out about GM. We can't be distracted from what the real issues are associated with crop production in the future, because we must all be at the table, you know. We must all put our heads together if we're going to try to figure out how to grow crops with less.”

Dr. Sally Mackenzie, the Ralph and Alice Raikes Professor of Plant Sciences at the University of Nebraska–Lincoln during a September speech as part of the school's Heuermann Lectures on global food production.





10 REASONS WE NEED BIOTECH FOODS and CROPS



BY THE NUMBERS

12,651 –The number of comments submitted to the Environmental Protection Agency in response to a proposal that would maintain—rather than increase—the renewable volume obligations (RVO) over the next two years for biodiesel and other renewable fuels in the Renewable Fuel Standard.

731 –The number of those comments submitted by ASA members through ASA’s Soy Action Center. ASA opposes EPA’s proposed levels, arguing that reducing the targets for biodiesel in 2014 and 2015 will impede the progress of a clean and available domestic renewable energy source.

7,000 –The number of attendees expected at this month’s Commodity Classic in San Antonio.

\$316.4 million –The amount allocated by Congress in the FY2014 Appropriations Bill for the Agriculture and Food Research Initiative, a competitive grant program that drives research and innovation at land grant universities and other research institutions.

43.8 million –The number of acres for which conservationists at USDA’s Natural Resources Conservation Service have developed conservation plans across the country. Plans include a map of the land and a proposed suite of conservation practices. (Courtesy USDA)

16% –The amount that soybean exports to China—already at a record 849 million bushels in 2013—are projected to increase in the coming year. (Courtesy USB)



BIOTECH CROPS CAN HELP ADDRESS THE GLOBAL FOOD CRISIS

Biotechnology has helped farmers grow **311.8 million tons more food in the last 15 years.** (source: www.croplife.org)



CROP BIOTECHNOLOGY HELPS SMALL FARMERS

90% of the 17 million farmers who grow biotech crops are resource-poor with **farms of less than 10 hectares.** The growth rate for biotech crops is at least three times as fast and five times as large in developing countries than industrialized countries. (source: ISAAA, New York Times)



BIOTECH CROPS SPUR GLOBAL ECONOMIC GROWTH

Economic benefits of GM crops amounts to an average of over \$130/hectare. In the last 16 years, planted biotech crop acres have increased 100-fold from 1.7 million hectares to 170 million hectares. (source: ISAAA)



FARMING USING GM CROPS REDUCES CHEMICAL USE

Biotechnology saves the equivalent of 521,000 pounds of pesticides each year and helps cut herbicide runoff by 70%. (sources: ISAAA, PG Economics)



BIOTECH CROPS INCREASE YIELDS

Productivity in GM crops has delivered gains in some cases that are **7–20% higher than conventional varieties** (which are on average 33% higher than organic yields). (sources: Nature, PG Economics)



BIOTECH CROPS HELP INCREASE INCOME OF POORER FARMERS, REDUCING POVERTY AND MALNUTRITION

As the rate of Indian farmers adopting GM cotton has grown, calorie consumption linked to increased incomes has grown and undernourishment in families has dropped, translating into a **15–20% reduction in food insecurity** if all the non-Bt adopters in India alone take to this technology. (source: PLOS)



FARMING WITH BIOTECH CROPS IS SUSTAINABLE

GM crops in general need fewer field operations, such as tillage, which allows more residue to remain in the ground, sequestering more CO₂ in the soil and reducing greenhouse gas emissions. In 2011, **these practices were equivalent to removing 10.2 million cars from the road for one year.** (source: PG Economics)



FOODS TWEAKED BY BIOTECHNOLOGY ARE SAFE TO EAT

Over 25 years of independent research, **there is no documented evidence of harm to human health or deaths from consumption of GM foods** since they were introduced to the market. **NONE.** (sources: National Research Council, European Commission)



GENETICALLY MODIFIED FOODS IMPROVE NUTRITION AND HEALTH

The new generation of GM crops—Golden Rice, which delivers **vitamin A enhanced rice, high carotene mustard seed oil, Vitamin A enhanced cassava, enriched sweet potatoes and even edible vaccines**—are just a few innovations awaiting approval. (source: Plant Physiology, Journal of American College of Nutrition, Gates Foundation)



GM CROPS AND FOODS COMPLEMENT CONVENTIONAL AND ORGANIC FARMING

Independent scientists reject claims that GM crops or animals “contaminate” or any way endanger our food supply or produce dangerous “Trojan genes.” (source: NPR, Nature, USDA)



WHERE SCIENCE TRUMPS IDEOLOGY

www.geneticliteracyproject.org

(Courtesy Genetic Literacy Project, George Mason University)

SoyTown Hall

There's plenty of misinformation available on the subject of biotechnology and GMOs, so we asked farmers to tell us the most interesting question they've ever been asked about the use of biotechnology on their farms, and how they answered it.

Here's what we found out:

Harvey Morken | Casselton, N.D.

A few years ago I was visiting with a lady about GMO crops. She told me that she wanted nothing to do with GMO products. My response was, if it was bad for consumption, it wouldn't have gotten this far and we wouldn't be planting it. Her reply was that it's OK if we want to raise it, she'd just like to have a choice at the grocery store.

Dean Campbell | Coulterville, Ill.

I had my ASA coat on in public and a lady asked if I worked for Monsanto. I said no, but I use their products. She said "Oh you're one of those nasty farmers who grow biotech." She said her family had allergies and she couldn't eat anything with GMO's. We were at a potluck and later I saw her sampling everyone's dish—but she didn't go into anaphylactic shock. Conversations with consumers become complicated—it's a course of events, not a question but a discussion.

Bret Davis | Delaware, Ohio

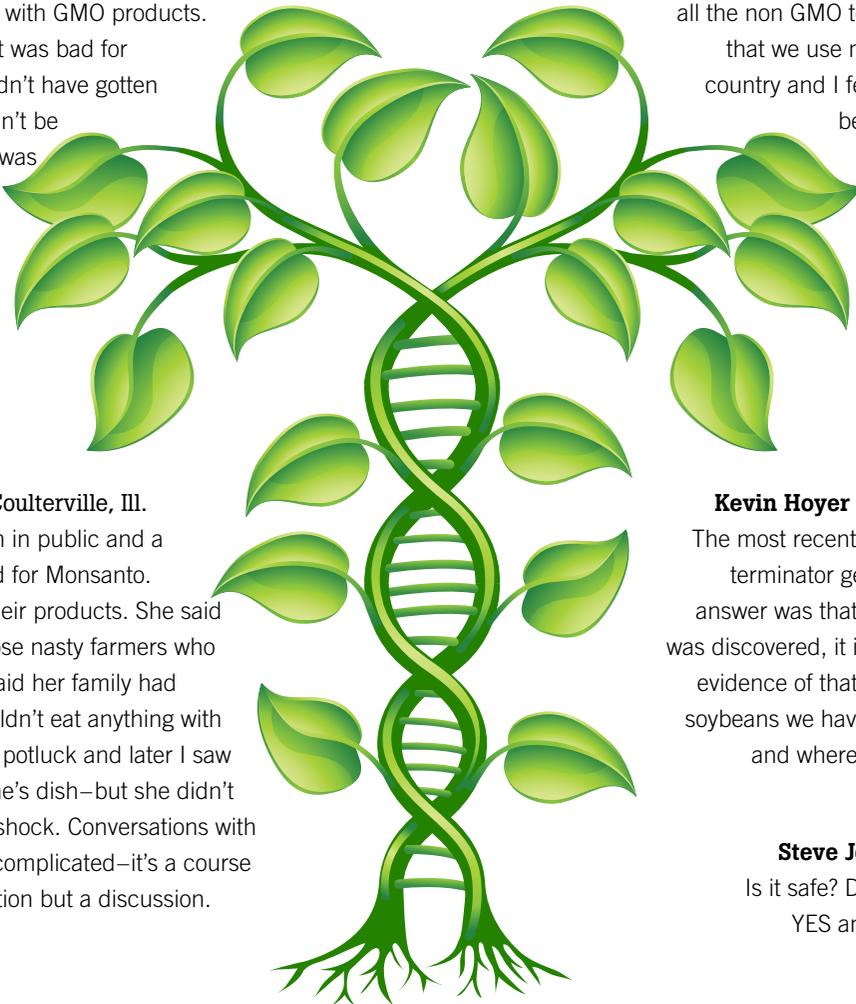
I was asked by a Chinese reporter why we ship all our GMOs to them and keep all the non GMO to ourselves. I told him that we use mostly all GMOs in our country and I feed them to my family because of the reduced uses of pesticide on them because they are GMOs.

Kevin Hoyer | West Salem, Wisc.

The most recent was a question about terminator genes in the GMOs. My answer was that while that technology was discovered, it is not being used. The evidence of that is volunteer corn and soybeans we have growing in the fields and where the grain was spilled.

Steve Joehl | Princeton, Ill.

Is it safe? Does your family eat it?
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BIOTECHNOLOGY & GMOs

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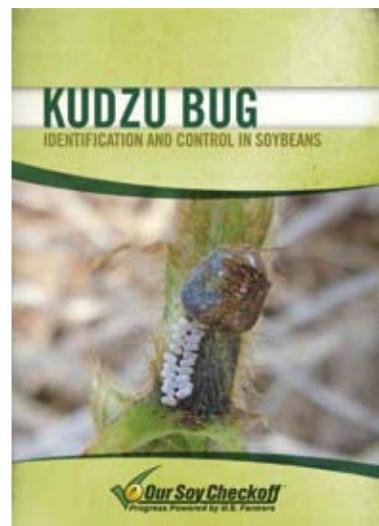


SoyState UPDATE

Status **GEORGIA/FLORIDA**



Researchers from the University of Georgia's College of Agricultural and Environmental Sciences, partnering with fellow researchers at Clemson University and North Carolina State University, collaborated with support from the Georgia Soybean Commodity Commission and the United Soybean Board, on a guide to assess the challenges that kudzu bugs pose to growers in the Southeast. The guide is available at KudzuBug.org, an online resource for farmers and homeowners developed by UGA to serve as a central location for research and information on the pest.



Status **MINNESOTA**



Through a progressive auction to shave his head, ASA Vice President Bob Worth raised more than \$4,500 for Minnesota Soybean Growers Association (MSGA) legislative activities. Each bid of more than \$500 earned the bidder the right to take a swipe off of Bob's hair. This was part of the evening entertainment at MSGA's Beano & Vino Casino Night during the 2014 MN Ag EXPO held January 8-9 in Mankato.

Status **NORTH CAROLINA**



The North Carolina Soybean Producers Association will be promoting its 2014 Weed Free NC initiative next month. The initiative, which launched in 2013, encourages farmers to use a zero tolerance approach in eliminating resistant weeds. It will be promoted to N.C. soybean growers through radio on the Southern Farm Network, N.C. Field and Family, Southeast Farm Press and through online banner ads on AgWeb and DTN. More information can be found at www.weedfreenc.com.



WeedFreeNC



Status **NORTH DAKOTA**

The North Dakota Soybean Growers Association (NDSGA) board and staff recently held a planning session to develop a strategic plan for 2014–2016. Increased soybean acres in central and western North Dakota provide a challenge to define any unique needs for these areas along with the opportunity to strengthen the organization through additional members. The group’s mission is to create partnerships to proactively improve the profitability and representation of all North Dakota Soybean Growers and to develop quality community leaders.



Status **TEXAS**

In addition to their pride in the election of Brownfield farmer Wade Cowan as ASA’s First Vice President in December, the Texas Soybean Board (TSB) and the Texas Soybean Association (TSA) celebrated the launch of **TexasSoybeans.org**, a new web home for both organizations. The site provides background information on both TSB and TSA, as well as information for farmers on the work of both the American Soybean Association and the United Soybean Board.



Status **VIRGINIA**

After eight years of dedicated service to the Virginia Soybean Association (VSA), executive director Dick Atkinson retired January 1. VSA Communications Coordinator Shannon Ellis has now assumed the position of executive director. VSA held its annual 2014 Grains and Soybean Conference in conjunction with the Virginia Grain Producers Association, February 18–19 in Williamsburg. The conference focused on tools for grain producers to maximize margins and profitability.



DOING WHAT MAKES SENSE

Todd Du Mond and New York farmers are growing their productivity with longtime best practices and cutting-edge data.

| By **Melissa George Kessler**



Todd Du Mond's son, Kai, helps out on the farm by weeding.

Most farmers are interested in knowing their yields, their cost of production and the daily market swings. Todd Du Mond, a soybean and corn farmer in upstate New York and a director on the Boards of both the New York Corn and Soybean Growers Association (NYCSGA) and the American Soybean Association (ASA), is interested in all of that and more—from soil pH to elevation and electrical conductivity to organic matter measurements.

Todd is not your average farmer; in fact, he's a mechanical engineer by training, with bachelor's and master's degrees from the Massachusetts Institute of Technology (MIT). An oil industry consultant for a time, Todd returned to his family's farm because he was drawn to the diversity and the responsibility of working in agriculture.



Todd (left), with father Eric and son Kai on the Du Mond farm in Union Bridge, N.Y.

"My dad bred the love of agriculture into me," Todd said. "I was never really gone from it per se."

Aggressive Growth in a Family Business

Todd's father, Eric, was a dentist who moved his family to the Union Springs area in the mid-1980s for improved farming opportunities.

At that time, the Du Mond farm was 200 acres – in Todd's terms, a hobby farm.

When he decided to return home full-time, Todd committed to building the operation and the business with a few simple strategies: make decisions that work, diversified approaches and invest in infrastructure.

In addition to about 3,000 acres of crops, the Du Mond business now includes a soybean processing facility and trucking company, and Todd is working to develop a grain facility with rail access.

He often modifies the equipment he uses to optimize its performance, can store more than a year's worth of fertilizer and has created an algorithm for trading in his equipment on a schedule that satisfies both him and his local dealer.

He is also a supporter of biotechnology and biodiesel, saying, "we use whatever technology is available and makes sense, what is cost effective and environmentally friendly."

With what he describes as an "aggressive growth mindset," Todd now operates the farm along with his parents and employees.

While he makes decisions based on the marketplace, he's mindful that this is still very much a family operation and the place where he and his wife, Courtney, are raising their two young children.

"We run our farm very much as a business but work hard to maintain the family values," Todd said, with home cooked meals on late nights and breakfast every other Friday for the whole family.

Capturing Data That Will Help Predict Productivity

Working on the operation full-time, Du Mond observed huge variability in ground and crop conditions.

The glaciated soils common to New York account for much of that diversity and also make it possible for variable rate technology (VRT) to pay faster and better than anywhere, including the Midwest.

In order for New York farmers to maximize VRT, though, more questions need to be answered.

"My opinion was that we left 95 percent of data in the field when we did strip trials," he said. "I wanted to change that. Missed data led me in this direction."

Todd's ideas are now the basis of what Ron Robbins, vice president of NYCSGA, calls the organization's marquee research project since taking over the collection of state checkoff soybean dollars in 2010.

The goal of the variable rate research project is to gather data needed to develop predictive models for variety placement down to the sub acre level. For now, this means participating farmers are collecting reams of information about fertilizer rates, population changes, the impact of slope and elevation and more than 50 other variables.

In 2013, the project included 410 acres of variable rate corn trials and 210 acres of variable rate soybean trials, with an agronomist and statistician, Daniel Ochs, CAA, culling the findings for correlations and other valuable information.

(continued on page 12)

(continued from page 11)

Du Mond is confident this research will help him and his fellow farmers make the most out of whatever conditions they will face in their fields.

"We can't optimize our production, we can just optimize potential because we never know what Mother Nature is going to do," he said. "Our production ultimately comes down to Mother Nature."

In looking for how they can grow their own businesses, Todd and the farmers he is working with on the variable rate technology project are also aiming to grow the agriculture industry in New York.

"We saw none of the research on how to utilize that technology here in the Northeast. It was all happening in the Midwest," Robbins said. "This project has put us on the map."

Four farmers, including Du Mond and Robbins, who are testing research questions intensively in their fields, face a direct cost of lost yields because the research needs to find the limits of the test sets.

"They need to see the long-term return to be willing to do that," Du Mond said. "They need to see that what comes from it far surpasses the cost."

The project is constantly evolving, with new ideas and plans to expand it statewide.

The structure of the project is also on the cutting edge, Robbins said. With support from Pioneer, Case IH, the New York Farm Viability Institute, the checkoff and other sources, it is one of the few federal-state-private-grower projects ongoing in the state. It could also be a model for future work.

"What Makes Sense"

Todd said he is largely self-taught despite his degrees from a top university. He believes that, if anything, his approach reflects "an attention to detail, awareness of side effects, prioritizing different things that seem logical, like straightforward decisions."

Courtney, a child psychologist who moved to the farm after she married Todd four years ago, said his attitude toward the business reflects his and his parents' progressive natures, his education and courage.

"He just jumps in. He's not afraid of a new technology that no one has used before," she said. "If he thinks it will work, he'll do it."

Todd said his parents, Eric and Marge, have always been supportive, while also encouraging him to go out in the world and explore options beyond the farm.

Todd and Courtney plan to raise their children with the same attitude, though they would, of course, love to see one of them return to the operation.

Todd said that these days, the farm's multiple generations "check and balance each other." The family decided together that Todd should be an advocate in the national industry, which takes him away from his young family four to six weeks a year.

While his background prior to taking over the farm may make him unique at home in upstate New York and at the national level, Todd believes what's really beneficial is his desire to know more.

"You can never progress if you only learn what somebody else already knows. If somebody asked what I learned at school, I tell them I learned how to think—how to learn." ■



Todd and Courtney Du Mond with son Kai (left) and daughter Anelle (right).



Tell us your conservation story and you could be a winner.

The Conservation Legacy Awards program recognizes U.S. soybean farmers who distinguish themselves through outstanding environmental and conservation practices while continuing to farm profitably.

Three regional winners will be selected. The regions are: Midwest, Northeast and South. All U.S. soybean farmers are eligible to enter.



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Applications will be evaluated on: management of soil, water and inputs; farmstead protection; sustainable practices; and overall conservation and environmental management.

- Win an expense-paid trip for two to Commodity Classic in Phoenix, Arizona, Feb. 26-28, 2015
- Be recognized at the ASA Awards Banquet at Commodity Classic
- Have your farm and conservation practices featured in *Corn & Soybean Digest* magazine and a special online video segment

Applications must be submitted online by **August 4, 2014**.

Visit **SoyGrowers.com** for application details and to view video features of past winners.



ASA in Action

Announcing the 2014 American Soybean Association Executive Committee and Board of Directors

The Board of Directors of the American Soybean Association (ASA) met in early December to elect officers for the coming year. At that meeting, ASA's directors confirmed Ray Gaesser of Corning, Iowa, as the association's newest President, and moved outgoing President Danny Murphy of Canton, Miss., to the position of Chairman. Board members also elected Wade Cowan from Brownfield, Texas, to serve as First Vice President, an office that places Cowan in line to be ASA president in 2015.

"There are so many issues that face the soybean industry today, and I'm excited to lead this organization in addressing each one of them," said Gaesser. "As we work to see a farm bill enacted, and soybean-friendly policies in place within the trade, transportation, energy and technology arenas, we know that we'll depend on the consistent involvement and cooperative work between all members of the soy family including our state affiliates, United Soybean Board, United Soybean Export Council and our industry partners, to help fully realize the benefits of those victories. As always, ASA remains committed to ensuring the success and profitability of soybean farmers, and I am very proud to be part of that effort."

Also elected to form ASA's nine-member executive committee were Secretary Wyatt Whitford of Ernul, N.C., and Richard Wilkins from Greenwood, Del., as Treasurer. Bob Worth of Lake Benton, Minn., Ron Moore of Roseville, Ill., Bob Henry of Robinson, Kan., and Kevin Hoyer of West Salem, Wis., were elected to serve as the association's four vice presidents. Whitford, Moore and Hoyer are new elections to the Executive Committee, while Wilkins, Worth and Henry were reelected to the posts they held in 2013.

Elections were held in St. Louis at ASA's annual winter board meeting, and the meeting also served as a venue to celebrate the retirements of Kentucky's Randy Mann, Illinois' Ron Kindred, Rob Joslin of Ohio and Andy Welden of Michigan from the ASA Board. Assuming positions on the Board as new members at the meeting were Kentucky's Gerry Hayden, Ron Moore of Illinois, Jerry Bambauer of Ohio and Michigan's Matt Stutzman. ▣

2014 Executive Committee



President
Ray Gaesser
Corning, Iowa



Chairman
Danny Murphy
Canton, Miss.



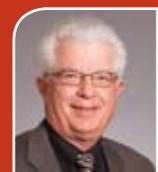
First Vice President
Wade Cowan
Brownfield, Texas



Secretary
Wyatt Whitford
Ernul, N.C.



Treasurer
Richard Wilkins
Greenwood, Del.



Vice President
Bob Henry
Robinson, Kan.



Vice President
Kevin Hoyer
West Salem, Wis.



Vice President
Ron Moore
Roseville, Ill.



Vice President
Bob Worth
Lake Benton, Minn.

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Dennis Bogaards
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Cory Devillier
Lettsworth, La.



Bruce Hall
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Eric Maupin
Dyersburg, Tenn.



John Rivers
Sumter, S.C.



Davie Stephens
Wingo, Ky.



Ron Bunjer
Arco, Minn.



Todd Du Mond
Union Springs, N.Y.



Gerry Hayden
Calhoun, Ky.



Matthew McCrate
Cape Girardeau, Mo.



Dan Roe
Monticello, Wis.



Matt Stutzman
Jasper, Mich.



Sam Butler
New Hope, Ala.



Ed Erickson, Jr.
Milnor, N.D.



John Heisdorffer
Keota, Iowa



Jim Miller
Belden, Neb.



Robert Ross, Jr.
Webbers Falls, Okla.



Lawrence Sukalski
Fairmont, Minn.



Dean Campbell
Coulterville, Ill.



Ted Glaub
Jonesboro, Ark.,



Mark Huston
Thamesville, Ont.



Lance Peterson
Underwood, Minn.



Kevin Scott
Valley Springs, S.D.



Steve Wellman
Syracuse, Neb.

Soy SHOTS



A new addition is lowered into place on Bret Davis' farm in Delaware, Ohio. *(above)*



Submit
Your Soy
Shots at:

membership@soy.org

A winter sunrise on Norman and Sally Beal's farm in Paola, Kan. *(left)*

A sample plant from a field in Central Missouri that broke the 90-bushel mark. (Photo submitted by Chad Hedrick). *(right)*



Trucks await a new load on Jeff Wuebker's farm in Versailles, Ohio. *(above)*



Late afternoon harvest on Scott and Vicky Singlestad's farm in Waseca, Minn. *(above)*

Barges on Shanghai's Huangpu River with what ASA Vice President Kevin Hoyer says were "low levels of smog." *(below)*

Harvest rolls on in Madison County, Ohio. (Photo submitted by Alyssa DeMatteo). *(right)*





What Most Soybean Farmers Don't Know

Most soybean farmers do not know that the soybean checkoff is different than the American Soybean Association (ASA). While ASA and the soybean checkoff both work on behalf of U.S. soybean farmers they are two separate entities that serve different functions and are funded differently.

The most misunderstood area is related to funding. The United Soybean Board – not ASA – has oversight and investment responsibility for the money collected by the soybean checkoff. Paying the soybean checkoff does not make the farmer a member of the voluntary dues-paying American Soybean Association, as these are two separate entities.

COMPLEMENTARY MISSIONS

ASA – Protect and increase market value and opportunities for U.S. soybean farmers.

Soybean Checkoff – Effectively invest and leverage soybean checkoff resources to maximize profit opportunities for U.S. soybean farmers.

COMPLEMENTARY ISSUES

ASA – Active in policy matters that impact U.S. soybean farmers such as biodiesel incentives, the farm bill, trade negotiations, infrastructure and regulatory issues.

Soybean Checkoff – Funds research and promotion impacting soybean farmers such as biodiesel product and market research, and analysis of issues important to transportation and infrastructure.

COMPLEMENTARY INTERNATIONAL MARKETING EFFORTS

ASA – Invest ASA-awarded cost-share funding from the U.S. Department of Agriculture through the U.S. Soybean Export Council to develop export markets; operate the World Initiative for Soy in Human Health program to grow new markets.

Soybean Checkoff – Invest soybean checkoff dollars in the work of the U.S. Soybean Export Council to expand foreign markets.

DIFFERENT INVESTMENT BY SOYBEAN FARMERS

ASA – A voluntary membership organization with dues paying members. Dues vary by state, ranging from \$55 to \$110 a year. The state association and ASA each receive a portion of the dues.

Soybean Checkoff – A mandatory assessment of 0.5 percent of the market price per bushel of soybeans sold. This money is divided 50-50 between the national and state soybean checkoffs.

DIFFERENT RESPONSIBILITIES

ASA – Legislative, policy and regulatory efforts in Washington D.C. on behalf of U.S. soybean farmers.

Soybean Checkoff – Research and promotion activities for U.S. soybeans. By law, soybean checkoff dollars cannot be used to fund policy or lobbying activities.

DIFFERENT GOVERNANCE

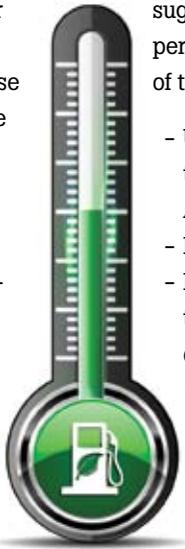
ASA – Governed by a Board of Directors made up of more than 40 soybean farmers elected by 26 state soybean associations.

Soybean Checkoff – Administered by the United Soybean Board composed of nearly 70 soybean farmers appointed by the U.S. Secretary of Agriculture.

Temperatures Dropping, but Biodiesel Just Getting Warmed Up

Winter is here, and those who use biodiesel to power trucks, tractors, snowplows and other vehicles can still use this renewable energy source that's better for engines and the environment.

Because biodiesel has many of the same properties as traditional diesel fuel, the same methods and precautions required for colder weather for both fuels can be used. All that's needed is good fuel management and some knowledge about how biodiesel reacts to frigid conditions.



Here's some background and helpful suggestions to address cold-weather performance with biodiesel, courtesy of the National Biodiesel Board (NBB):

- Use high-quality biodiesel fuel that meets the national standard, ASTM D 6751.
- Blend biodiesel with kerosene.
- Blend biodiesel with diesel that has been treated with cold-weather additives.
- Use block and filter heaters.
- Store your vehicles indoors.
- Use a B20 blend or below.

Biodiesel offers excellent horsepower, mileage and lubricity. Research has shown that using this renewable fuel reduces hydrocarbons, carbon monoxide and particulate matter.

Soybean oil remains the primary feedstock for U.S. biodiesel manufacturing. The soy checkoff funds research and promotion efforts through NBB, with the goal of increasing demand for U.S. soybean oil. ■



Precision Agriculture Helps Meet Customer Needs for Sustainably Produced Soy

More and more U.S. soy customers are demanding products created in a sustainable manner, and precision agriculture is helping farmers meet this need. With the help of new technology, these sustainable-farming methods can help limit inputs and increase yield.

Keith Dunn, a soy checkoff farmer-leader from Yale, Va., recently led a two-day precision-agriculture class for students at Virginia Tech. In this interview, he says many farmers are seeing the benefits of precision agriculture.

Q: What are the benefits of precision agriculture?

A: Precision agriculture uses different technologies to make farming more efficient and sustainable. Farmers use things like GPS to guide their machines to ensure there's no seed or chemical overlap. There are also technologies that can vary the

amount of input used on different parts of the field. So, you can use herbicide on areas that need it, and avoid wasting it where there isn't a weed problem. Using these tactics can reduce fertilizer, herbicide and fuel use and help increase yield.

Q: What did you do in your class?

A: We spent the first day in the classroom explaining how the technology works. We went over things like how to use GPS equipment to keep planting rows even, and using field maps to create different soil zones. On the second day, we took all of the equipment to the field. The students got to create field boundaries and soil zones. Students took soil samples based on the zones we created. We also conducted planter and sprayer demonstrations.

Q: Should farmers consider using precision-agriculture technologies?

A: More and more farmers are becoming interested in precision agriculture because they see the benefits. They're able to cut costs because they aren't wasting inputs. Things are changing every day, and there are so many great new pieces of technology. All farmers should learn more about these practices and how they could improve their operations.

The checkoff has made communicating U.S. soybean farmers' sustainable farming practices to customers a priority. The checkoff helped create the U.S. Soybean Sustainability Assurance Protocol, which documents these practices. Farmer-leaders will use the protocol to show customers all the things U.S. soybean farmers are doing to protect the environment while growing high-quality soybeans. ■

Checkoff-funded research helps ensure U.S. infrastructure remains efficient for farmers

Roads, rails and rivers carry over half of the U.S. soybean crop to foreign markets each year. Farmers' profitability depends on these transport methods. Luckily, the United States' transportation infrastructure is the most sophisticated in the world.

In fact, according to the U.S. Department of Agriculture, it costs Brazilian farmers almost twice as much on average to ship one metric ton of soy to Shanghai as it does an American farmer.

"The timely movement of soybeans from the first point of delivery to the end user is vital to keeping U.S. soybean farmers competitive," says Mary Lou Smith, soy checkoff farmer-leader and soybean farmer from Petersburg, Mich. "It's important that we maintain a competitive edge



nationally and internationally, and the checkoff is helping do that."

Increasing public and private investment in soy transportation modes remains one of USB's priority issues. Here's how the checkoff works with the Soy Transportation Coalition to protect that competitive advantage:

- Funding a bridge-infrastructure assessment to identify and

prioritize the bridges in need of repair and rehabilitation.

- Funding a study on the U.S. railway system and its capacity to support future agricultural growth.
- Funding research to examine the predictability of U.S. locks and dams and whether to invest in maintenance and major rehabilitation or new construction. ■



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U.S. soybean farmers have had access to the benefits of biotechnology for two decades. And while the track record shows reduced crop input use, improved weed management and no safety threat to end users, the battle by naysayers to curb or even eliminate biotech use continues.

NAVIGATING

the Biotechnology Pathway

| By Barb Baylor Anderson

Addressing Challenges for Timely Approvals

In early January, the U.S. Department of Agriculture's (USDA) draft Environmental Impact Statement (EIS) to deregulate Dow AgroSciences' 2,4-dichlorophenoxyacetic acid (2,4-D) resistant corn and soybeans (Enlist) was met with strong opposition. Some environmental groups balked at the announcement.

Dow AgroSciences began data submissions for Enlist about four years ago. The company also submitted farmer petitions to the agency to encourage approval. In November 2011, USDA's Animal and Plant Health Inspection Service (APHIS) announced that it would begin improving the overall timeline for biotechnology approvals by standardizing its process, helping pave the way for a resolution to Dow AgroScience's quest and others in the pipeline.

The American Soybean Association (ASA) supports timely deregulation of new biotech traits by APHIS based solely on sound science, and supports legislation requiring the Secretary of Agriculture to allow production and marketing of crops with traits that have been deregulated by APHIS pending resolution of court decisions that otherwise would impede commercialization. The threat of lawsuits has lengthened the deregulation process from 18 to 40 months since 2005, which lengthens the time between trait development and getting it into farmer hands.

On the consumer side, several states are pushing to label foods containing ingredients from biotech crops. Maine recently signed its labeling legislation into law, and is the second state, along with Connecticut, to enact such laws. Both require

additional states pass legislation before the labeling requirements go into place. Washington State voters narrowly rejected their biotech labeling measure last November. A similar measure was defeated in California in 2012 on a 51 to 49 percent vote. The labeling issue is drawing lawmaker attention in more than 25 states.

Given biotechnology's production advantages and benefits, many soybean farmers say they will continue to plant biotech soybeans, despite these roadblocks. Three farmers from different production settings share their perspectives about the use of biotechnology for the future.

Producing What the Market Wants

Mark Mueller doesn't commit to what crops he will produce in years ahead, but the Waverly, Iowa, farmer currently raises both biotech and non-biotech corn and soybeans and alfalfa.

"My job is to produce what the market wants, whether that is non-biotech or biotech," he says.

Mueller's non-biotech soybeans are produced for a lucrative premium for the Japanese tofu market. His biotech soybean production goes into the traditional channels. "I don't have any issues with biotech opponents, but if they want non-biotech crops they should pay a premium.

"My non-biotech soybeans require a lot more work," he continues. "Biotech soybeans are popular because they do not require you to put much thought into raising them. We do see weed resistance, so I try and rotate my fields to prevent problems. I will rotate from Roundup Ready one season to non-biotech production in that field the next season, followed by Liberty Link."

(continued on page 22)



“I have traveled overseas, and talked to farmers that want biotech crops. The genie is out of the bottle. The world is coming around, and biotech use will continue to grow.”

– Mark Mueller

(continued from page 21)

As Mueller considers whether he will plant dicamba- or 2,4-D-resistant soybeans or other traits in the future, should they be approved, he says he will listen to what his agronomist recommends and address whatever weed issues he might have at the time.

“Environmental stewardship is one of the keys to biotechnology success. Unfortunately, there are a few farmers out there that do not use the technology as intended, which creates regulations and problems for the rest of us,” he says. “Biotech crops are a necessary tool for the future,

says the brothers have no concerns that the crops have biotech traits and appreciate fewer regulations as compared to the European Union.

“I have traveled overseas, and talked to farmers that want biotech crops,” he says. “The genie is out of the bottle. The world is coming around, and biotech use will continue to grow.”

Keeping A Cautious Eye on Chemistries

The Langdon Family near Benson, N.C., has grown glyphosate-resistant soybeans and corn since the products

resistance and to protect agriculture’s diversity in their region.

“We already have resistant marestail and Palmer amaranth in eastern North Carolina, so we have to manage those weeds carefully,” he says. “We can manage them in Roundup Ready corn with an early shot of atrazine. Soybean management is tougher. You have to keep Palmer amaranth from going to seed, which often means pulling the plants or going back and adding a premerge or preplant pass with a PPO herbicide. You have to watch that chemistry for resistance as well.”

Hunter farms with his parents, John and Eileen, and siblings, John Michael and Megan. In addition to corn and soybeans, the family raises wheat, sorghum and forages and has a contract finish hog operation and a 70-head beef cow herd.

“The arrival of dicamba or 2,4-D tolerant traits might be a big deal for some farmers, but we will not benefit from the technology as much. There is a lot of flue-cured tobacco here, and it is very sensitive to 2,4-D. It is a volatile herbicide that has drift, and would be a risk to spray within a half mile of tobacco fields. We would benefit most from having drought-tolerant corn.”

(continued on page 24)



or else we will be cutting down rainforests to produce more crops.”

Mueller sold 20 acres to brothers from the Netherlands that operate a dairy. The pair feeds Mueller’s silage, and Mueller uses their manure. He

hit the market in the 1990s. And while Hunter Langdon says they are open to evaluating future biotech traits, they will be selective in what they choose to plant to prevent problems with growing weed

FDA Notice on Trans Fats May Create Opportunity for High Oleic

| By Patrick Delaney



In an effort to reduce the amount of trans fats in American diets, the Food and Drug Administration (FDA) announced in early November that it would move to eliminate partially-hydrogenated oils. FDA announced that it would rescind the Generally Recognized as Safe (GRAS) status that those oils—including partially-hydrogenated soybean oil—currently hold. In 2006, FDA began requiring that food companies indicate the amount of trans fats in their products and since that time, consumption of trans fats has fallen by more than 70 percent as a result of food companies moving to alternative processes.

By itself, soybean oil is a heart-healthy oil that contains no trans fats and is high in poly-unsaturated fats and Omega-3 fatty acids. For many years, companies have used the hydrogenation process to make soybean oil and other oils more stable for use in baking, frying, and other food applications. The vast

majority of soybean oil consumed is not partially hydrogenated, however, and in recent years, the industry has rapidly developed new solutions to replace the functional characteristics of partially hydrogenated oils through blending of various oils, the blending of fully hydrogenated soybean oil (which does not contain any trans fats) with liquid soybean and other oils, and other processes that reduce or eliminate trans fats.

A breakthrough innovation in this effort has been the development of soybean varieties that have high levels of heart-healthy high oleic fatty acids and eliminate the need for partial hydrogenation. These high-oleic soybean oil varieties enable food companies to get the functionality they desire for flavor stability, texture, and other important characteristics while avoiding the tradeoff to higher saturated fat or trans fat levels that comes with using palm oil or partially hydrogenated oil for stability. Currently, United

Soybean Board (USB) is working closely with these companies to accelerate the commercialization of these high oleic soybean varieties, and significant quantities of high oleic soybean oil are on track to be available in the marketplace by 2016.

After consulting closely with USB and representatives from the Qualisoy initiative, ASA called on FDA to take into account the time it will take to ramp up high oleic soybean production to provide an economical alternative to food processors. ASA also continues to work closely with other groups within the food and agriculture industry to ensure FDA does not implement its decision without weighing all the impacts on industry. ■



“Biotechnology helps the American farmer. There is a lot of ignorance and people making bold statements against biotechnology. They just don’t know its impact.”

– Hunter Langdon

(continued from page 22)

Langdon says they will continue to use biotech traits that make their weed control much easier. Glyphosate in the past required only one spray application, cleaned up the weeds and had less of an environmental impact than previous weed control strategies.

Langdon does believe biotechnology will play a big role in the future. “It is necessary for our profitability and to feed the world. Corn yields have grown so much, and we will need continued yield increases,” he says. “Biotechnology helps the American farmer. There is a lot of ignorance and people making bold statements against biotechnology. They just don’t know its impact.”

Managing Pests with Biotech Traits

Kurt Krueger’s farm has grown any number of crops and livestock. The Rothsay, Minn., farm also has had its share of weeds and other pests. That’s why Krueger first tried biotech corn.



European Corn Borer

“My first exposure to biotechnology was in 1997, when Bt corn – more specifically the ‘knockout’ gene – was introduced to my farm to

address European Corn Borer. I was pleasantly surprised with the results I observed,” says Krueger, who has been farming since 1996. “A few years later I brought the Roundup Ready technology home to help control various weeds in my soybean fields. Biotechnology has become more involved in my operation since its inception.”

The Krueger operation originated from a farm his father and grandparents purchased in 1962. They had returned to their Minnesota roots after living in Oregon for many years. Krueger says crops grown during the last half century include corn, soybeans, spring wheat, barley, oats, sunflowers and navy beans. The farm also once raised cattle, sheep and hogs.

“Corn and soybeans have been the commodities of choice in recent years,” he says. “Yields have increased more significantly in relation to the inputs required to produce those crops. It is also very nice to have the extra help to combat various pests that present themselves throughout the growing season. Unfortunately more pests continue to appear, and that trend will continue.”

Krueger agrees with other farmers that biotechnology must be available



to farmers worldwide to continue to produce an adequate supply of safe food to feed a growing population.

“One of the most significant benefits of biotechnology will be the ability to produce more food with fewer resources,” he says. “Unless some outlandish legislation prohibits me from doing so, biotech will always be a part of my agriculture plan. It allows us to be more efficient, and that is essential to maintaining a competitive environment. Decision makers need to realize the value, and allow advancement via biotechnology to continue. It is the responsible thing to do.”

To learn more about ASA’s efforts to stay on top of crucial biotechnology issues, visit <http://soygrowers.com/issues-pages/biotechnology/>. ■

Biotech Working Group Continues to Address Approval Delays for High Oleic, Other New Biotech Traits

| By **Patrick Delaney**

Delays to biotech approvals, which stem from protectionist policies and widespread misinformation in foreign markets and litigation from activist groups in the U.S., continue to be a major problem for the biotechnology industry, and a significant barrier between farmers and the solutions they need to remain profitable.

Here at home, activists like the Center for Food Safety, Food and Water Watch and others openly abuse the legal system in order to delay the commercialization of new traits based on clerical errors, paperwork discrepancies and other technicalities. Abroad, the approvals pipeline for new traits in key markets like China and the European Union continues to be clogged in a seemingly endless web of bureaucratic red tape

Enter ASA's Biotechnology Working Group. Convened as a forum for farmer-leaders from ASA, the U.S. Soybean Export Council (USSEC) and the United Soybean Board (USB) to interface with their technology providers, the working group gives the industry an opportunity to interact in a small group setting with its federal partners at USDA, EPA and the other agencies whose decisions so often impact both profits and livelihoods on the farm. The working group also provides an opportunity for each of the major technology providers to gain critical feedback from ASA on their soybean pipeline, the status of U.S. and international regulatory approvals for their products, what the ASA can do to help with such approvals, and discussion of our stewardship expectations.

Most recently, the working group gathered in Washington to speak with representatives from EPA and from USDA's Animal and Plant Health Information Service (APHIS) and Foreign Agricultural Service (FAS), to discuss the current



state of the approvals pipeline here in the U.S. Each party discussed strategies to reverse the trend of lengthier approvals timelines. The average time from petition to market has ballooned from 18 months to nearly three years.

With respect to foreign markets, the working group focuses specifically on the streamlining of approvals in key foreign markets, most notably China and the European Union (EU), but the group also has addressed a quicker approvals process in Brazil and Argentina, which translates to access to new traits for competing countries while American farmers wait.

In the European market, the working group led a mission in February in support of high oleic soybean traits that are going through the EU's approval process. Domestically, high oleic soybean oil will be relied on in increasing quantities in coming years as the Food and Drug Administration moves to eliminate trans fats from the marketplace. Embrace of the trait, however, will not be fully recognized until approvals for high oleic are obtained in the U.S.' major export markets.

Through the Biotech Working Group, industry technology providers work side by side with farmers, ASA, USB and USSEC to open up a constructive dialogue with both regulatory agencies that can lead to reducing approval delays for products that growers need to improve yields, manage increasing weed resistance, and meet foreign competition. ▣

“One of the most significant benefits of biotechnology will be the ability to produce more food with fewer resources. Unless some outlandish legislation prohibits me from doing so, biotech will always be a part of my agriculture plan.”

– Kurt Krueger

Industry Perspective

| By Candace Krebs



Wanted: Brisker approvals for biotech

When several corn and dried distillers' grain shiploads were rejected by China late last year over traces of a yet-to-be-approved biotech strain, soybean farmer Steve Wellman took comfort knowing the industry had been proactive.

"The U.S. Biotech Crops Alliance was specifically created to work on issues just like this, and it has proved to be very timely," said the Syracuse, Neb., farmer and former ASA President.

Days earlier, the fledgling group gathered in Washington to meet with Secretary of Agriculture Tom Vilsack as he prepared to leave for China, took initial steps to formalize the organization and officially introduced its first hired director.

But the origins actually go back a couple of years to when national corn and soybean leaders first realized seamless communication between all segments of the industry was lacking.

"The thing that prompted this is that farmers would have good conversations with the seed and technology companies, and those companies were having conversations with the trade and processing industries, but we didn't have everybody all in the same room at the same time," Wellman recalled. "There seemed to be a gap in between, even though we all depend on each other as part of the same system. I think the alliance will bring more farmer participation to these issues."

Addressing "asynchronous" approvals of biotech traits among exporting and importing countries and establishing residue tolerances are primary goals of the new group, said Secretariat Michael J. Phillips, who retired five years ago from the Biotech Industry Organization and now heads the Alliance.

The steps to accomplish that include forging an international consensus on standards and then convincing individual companies to sign binding working agreements, which would be monitored by third-party auditors, Phillips explained.

"For much of this, it is just going to take time," he said.

As the group seeks to make the regulatory approval process more science-based, transparent and predictable, specific items on their agenda also include how to assess and manage risk when a new biotech trait is being developed and introduced in commercial markets, and how to mitigate and assign liability for losses that occur from market disruptions.

"It's a challenging environment for sure," said Phillips. "It's a mystery to those of us who know this

technology well to understand why there is such an 'anti' approach being taken by a vocal minority, especially when this technology is allowing us to move from a chemical era to a biological era and develop the means to feed the 9 billion people we will eventually have on this planet."

Wellman and Richard Wilkins, a farmer and ASA's Treasurer from Greenwood, Del., who was appointed as the association's representative on the alliance, remained concerned as the initial Chinese trade "hiccup" turned into a lingering logjam.

Even short-term delivery problems have a ripple effect. Wellman recalled an incident several years ago when a soybean shipment to Europe was rejected due to residual dust that held traces of an unapproved corn trait.

"Regardless of commodity, it all trickles down to the farm level," he said.

"When you ship a large cargo of a bulk commodity and incur the freight expense to get it to its destination and find that it is unacceptable, that's a huge expense," Wilkins added.

"It's the original producer or the end consumer who is ultimately going to bear that cost." ■

| By **Laura Smith**

Indigenous Paraguayan Tribe Showcases Power of Modern Soybean Farming

Often when you hear the words “soybean” and “indigenous” in the same sentence, it’s about modern agriculture replacing older ways of life. But one group of indigenous people in Paraguay has a story about how modern soybean farming is helping to sustain their old ways and grow their tribe.



A group of Aché children display both modern clothing and traditional face paint.

Photo by Danny Murphy

During the 2013 International Oilseed Processors Dialogue meetings in Asuncion, Paraguay, attendees were given the opportunity to visit a village of indigenous Aché (ah-CHE) in the eastern portion of the country. ASA President Ray Gaesser and Chairman Danny Murphy took part in the excursion alongside farmer leaders representing United Soybean Board and U.S. Soybean Export Council, as well as staff from each organization.

“These people have such a heartwarming story and we can appreciate the difference soybeans have made there,” says Murphy.

“This is a case where modern ag has made a positive difference and helped these people to move forward, improve their tribe and educate their children.”

Discovered in the mid-1970s, this group of Aché people lived a mostly nomadic life of hunting and gathering. When they were first contacted, there were just 28 members remaining, and while the Paraguayan government provided them with land to live on, it wasn’t enough to sustain their traditional way of life.

With the help of local farmers, the Paraguayan soybean producers association, and the Paraguayan Grains and Oilseed Exporters Association, known as CAPECO, the villagers planted approximately 800 acres of soybeans. Now after several harvests, the village has grown to 180 members with permanent homes, a hospital and a school. In fact, some members of the Aché village have gone on to college not just in Paraguay, but in Europe and the United States as well.

Contrast the Aché’s story with another nearby village discovered several years earlier by a group of environmentalists. The group provided the village with the supplies necessary to sustain the village in its current form, but not the technology to grow additional food, rebuild the village’s numbers, or expand the village’s infrastructure. In fact, the group actively discouraged the use of



The Aché have been able to rebuild their village from the success they have had growing soybeans with the benefit of modern farming techniques and tools like biotechnology.

the modern agricultural technology—including biotechnology—that the Aché were given. The results some three-plus decades later are stark. The Aché thrive while their neighbors struggle to maintain the population of their small village.

Despite being modern soybean farmers who use biotechnology and today’s equipment to tend their crops, the Aché have been able to hold onto their culture. Many of the tribe members still make traditional carvings and other arts, and Gaesser points out what a great example the Aché provide with regard to being able to adapt to improve their lives but still maintain their traditions.

“One of the big things we can learn from this is that conditions change,” says Gaesser “And we need to adapt along with them, not only in terms of the practices on our farms, but also when it comes to our vision of the world, and our roles and responsibilities within it.” ■

ResearchInsight

Soy Booster Field Trial Program Yields Positive Results

By Michelle Hummel

This past spring, 128 farmers from 16 states enrolled in the Soy Booster Field Trial program, sponsored by FMC and NACHURS. Through this program, farmers had the opportunity to try FMC's Capture LFR (Liquid Fertilizer Ready) insecticide and NACHURS HKW6 liquid starter fertilizer on soybeans.

ASA helped facilitate the trial by promoting enrollment in the program to ASA members. The trial provided farmers with the opportunity to observe and measure how application of the insecticide with starter fertilizer could enhance production on their farm. Each farmer devoted 20 acres of treated and 20 acres of untreated soybeans to the trial.

Results of the program were very positive, with 74 percent of the plots showing positive results from using Capture LFR and NACHURS HKWG. Farmers who participated in the program in Michigan, North Dakota and Wisconsin observed yield increases in 100 percent of their test plots. While the data from a few plots is still coming in, results from 91 plots have already been submitted for analysis.

"FMC appreciates the evaluations of the ASA members who participated in the Soy Booster Field Trial Program," said Rick Kesler, FMC Business Services Manager.

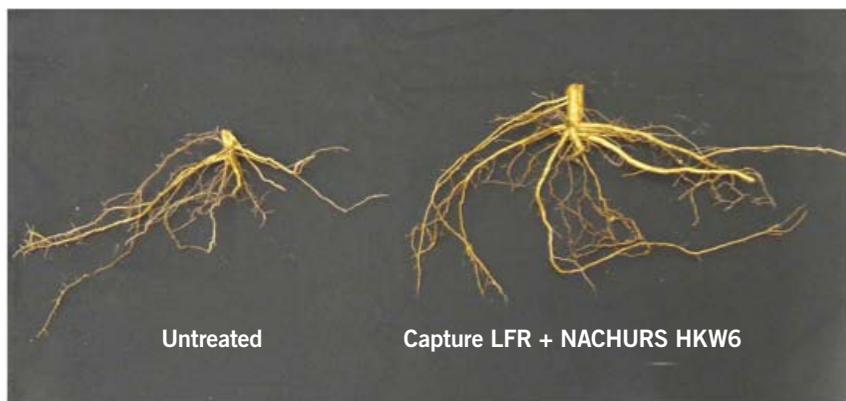
"It was very helpful to have so many farmers participate in the trial and report their results. The significant participation in this program shows that there continues to be strong interest in research to improve soybean yields, and this also remains a top priority for FMC."

The average stand increase was 3,170 plants per acre. Most yield increases averaged about 2 bushels per acre. However, in some plots the increase was as high as 9 bushels per acre.

FMC plans to do more testing in 2014 to gather information with a focus on rates, soil types, moisture, insect pressure and other factors in an effort to consistently push soybean yields higher. ■



For more information on the FMC's Capture LFR insecticide visit www.fmccrop.com, or contact Rick Kesler at (816) 581-6870 or rick.kesler@FMC.com. To learn more about NACHURS HKW6 liquid starter fertilizer, visit www.nachurs.com or contact Brian Banks, NACHURS Regional Agronomy, at (402) 416-1271 or banksb@nachurs.com.



Courtesy FMC

Even with Victories in California and Washington, Labeling Fight Rages On

By John Gordley

Anyone who thought the last two defeats of biotech labeling ballot initiatives in California and Washington State represented a corner turned in the battle over agricultural biotechnology may not have anticipated the direction things would take in the following year. Anti-biotech activism continues to challenge this critically important innovation in modern agriculture. In response, industry and grower organizations are working to find proactive ways to keep the progress of agricultural biotechnology moving forward.

Following the defeat of Proposition 37 in California and Initiative 522 in Washington State, anti-biotech activist groups and some organic food product companies refocused their efforts on passing state labeling laws. They have succeeded in Connecticut, and are pushing similar legislation in some 25 other states.

Trade associations who led the “No on 37” and “No on 522” campaigns continue to push back against these efforts. The Grocery Manufacturers of America and its allies, which include ASA are looking at pressing Congress to pass a law authorizing labeling of food products that do not contain biotech ingredients, which would preempt any state legislation. The concern is that a mandatory label on biotech-containing products, combined with negative activist publicity, would turn consumers away from these foods. The GMA bill would also make current voluntary consultations by technology companies with the Food and Drug Administration on the safety of new biotech products mandatory. Anti-biotech activists can be expected to mount strong and very public opposition to this effort moving forward.

The umbrella group representing the industry’s technology providers, the Biotechnology Industry Organization (BIO), has launched www.gmoanswers.com, a website to provide straightforward responses to consumer questions about biotech. BIO is participating in various social media that provide opportunities for dialogue on biotech issues, and inviting interested individuals to come to the website for additional information. Similarly, GMA and its food product company members have launched www.factsaboutgmofacts.org. The thinking behind both websites is that most consumers know very little about biotech ingredients in their food, and that they will be less concerned about labeling products if they become better educated about them. This is a good (albeit longer-term) strategy for addressing public concerns, which have been stirred up by misinformation from activists. ■



SoyForward

The Future of Agriculture Requires Dialogue



By **Dr. Robb Fraley**

It's a great honor to have shared in the World Food Prize this year with two of my longtime friends, Dr. Marc Van Montagu, of Belgium, and Dr. Mary-Dell Chilton,

of the United States. But it will be a far more important honor if the decision to honor the three of us helps reset the discussion around innovation in agriculture.

Working separately, we helped pioneer agricultural biotechnology some 30 years ago by figuring out how to transfer genes from one organism into another. Today, genetically modified (GM) crops are being grown on about one-fourth of the world's farmland. GM crops are helping farmers fight drought, insects, and disease. They lower farmers' costs, improve their yields, and increase profitability. They even improve the environment.

And contrary to what many people think, they're not only being grown in the developed world. In fact, the majority of farmers planting GM crops are now in developing countries.

Now climate change and population growth are accelerating the need for a broad range of agricultural innovations.

GM crops can help meet this need. Water-efficient maize in Africa and the other advances we have already made are only the tip of the iceberg. Seeds that offer even better drought resistance, nutrition, higher yields, and many other benefits are now under development by scientists around the world.

In fact, continuing the advance of science is not really the issue. The bigger challenge is the social and policy barriers that block many of the potential innovations.

We should not be surprised by the presence of these challenges. Innovation in the food supply has evoked strong reactions throughout recent

history. Dr. Norman Borlaug, the father of the Green Revolution, used to say it all the time: "You must be prepared for opposition." I think those of us who believe in the promise of biotechnology have not prepared the way we should have.

I believe we can find common-ground solutions. They'll be found around agriculture that minimizes the environmental impact of water and land use and that reduces the risk of political disruption.

By validating biotechnology as one of the innovations that can help solve the 21st century's challenges, the World Food Prize has performed a great service. But that service just helps set the stage for the hard work to come.

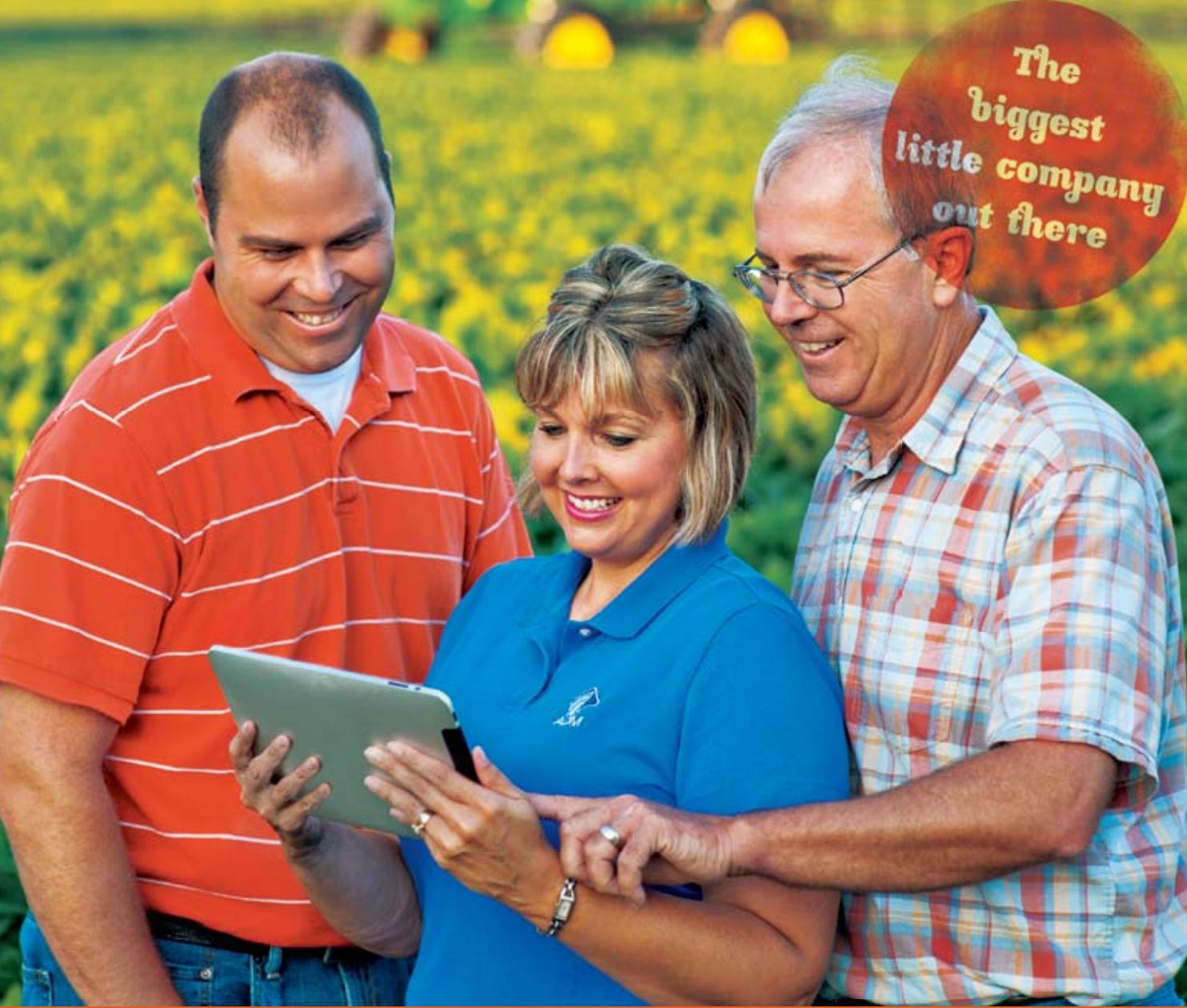
And for that hard work, a collective effort is needed—by NGOs, governments, universities, and companies. All of these different parties need to do whatever it takes to move the dialogue forward. Our ability to bridge the differences between ourselves and those who oppose the innovations we seek will make a huge difference in the food security of 9.6 billion people and the environmental wellbeing of our planet. ■

Dr. Fraley, right, with fellow World Food Prize laureates Drs. Marc Van Montagu, left, and Mary-Dell Chilton, center.



Dr. Robb Fraley

Dr. Robert T. Fraley, a co-recipient of the 2013 World Food Prize, is Executive Vice President and Chief Technology Officer of Monsanto.



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I am a soybean farmer,
trade advocate,
and ASA member.



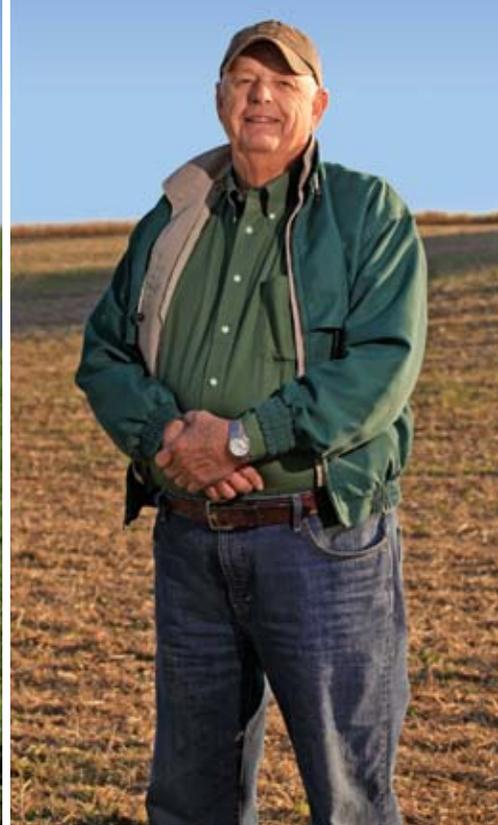
David Ausberger, Jefferson, Iowa

We are soybean farmers,
animal ag supporters,
and ASA members.



Phyllis & Mark Legan, Coatesville, Ind.

I am a soybean farmer,
biodiesel proponent,
and ASA member.



Jerry Peery, Clinton, Ky.

Your story is our story. As an ASA member, you join tens of thousands of other soybean farmers to ensure someone is watching your back when policy and regulations are being debated and created in Washington, DC.

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