

AMERICAN SUMMER 2016
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People. Policy. Profitability.

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environmental

More than Conservation

Soybean Sustainability Requires Holistic Approach



economic

SOY HORIZONS
Pioneering Spirit of the Erickson Family Keeps Farm Moving Forward



social

SUSTAINABILITY
Nebraska Farmer Sees Technology as Key to Sustainability

SOY FUTURES
Farmer Lynn Rohrscheib Redefines Effective Ag Leadership

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American Soybean Association®

If you believe, belong.

The 2017 ASA DuPont Young Leader Program



Raise your voice for agriculture

- Improve your leadership skills and help advance the soybean industry
- Learn to communicate and influence various groups on important agricultural issues
- Connect with soybean farmers from other states and Canada

The ASA DuPont Young Leader Program is a two-phase educational program for actively farming couples or individuals 21 years and older.

The two-phase training program is as follows:

Phase I – November 29 – December 2, 2016, DuPont Pioneer Headquarters, Johnston, Iowa

Phase II – February 28 – March 3, 2017, San Antonio, Texas (Held in conjunction with Commodity Classic)

For more information about the ASA DuPont Young Leader Program and to apply for the class of 2017 go to: <https://soygrowers.com/learn/young-leader-program/>



“We had no idea what an impact the ASA DuPont Young Leader Program would have on us. We have sharpened our communication and leadership skills, gained confidence in our ability to advocate, and made lifelong friendships with other farmers across the country. So many new opportunities have opened up to us in the past year, and it all started with the Young Leader Program.”

– Adam and Lindsey Hendricks, KY

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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.



More than Conservation:

Soybean Sustainability Requires Holistic Approach

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SOY news

New Missouri Soybean Center Promotes Research, Teaching



Photo credit: Logan Jackson, University of Missouri

Doug Allen, U.S. Department of Agriculture (USDA) research scientist, Danforth Plant Science Center, speaks during the Missouri Soybean Center Symposium.

The University of Missouri, Columbia, recently unveiled the Missouri Soybean Center, with the goal of promoting and enhancing soybean research, teaching, and extension to address challenges facing the soybean industry.

The center was presented during the Missouri Soybean Center Symposium on April 28 in the Monsanto Auditorium of the Bond Life Sciences Center on Mizzou's campus. The event featured numerous speakers – including a farmer, graduate student and a handful of professors.

"The soybean is our number one crop in the state," said Bill Wiebold, professor, plant sciences. "We have expertise here at the University of Missouri that probably few other universities have – looking at the breadth of everything from molecular biology to extension. It's exciting. There is so much to talk about when it comes to soybeans. People are excited about the opportunities that will be presented by the center, and they want to be a part of it."

Source: Logan Jackson, University of Missouri

Clemson Graduate Student Takes on Kudzu Bugs

Kudzu bugs may have met their match in one Clemson University graduate student. Research by Francesca Stubbins, an entomology graduate research assistant at the Edisto Research and Education Center (REC), shows for the first time that mermithid nematodes can infect and kill the insects. Stubbins' research involved collecting kudzu bugs from soybean fields. Nematodes – long, slender, parasitic worms – were found in the abdomens of some of the insects.



Photo credit: Francesca Stubbins/Clemson University

Nematodes enter kudzu bugs as immature nematodes and develop while inside the insect.

"This discovery adds to the list of natural enemies that infect kudzu bugs," Stubbins said. "We don't know if this nematode has a significant effect in reducing kudzu bug populations as it has just been found in kudzu bugs in one field at the Edisto REC, but it does show there are natural enemies in the field that could have the capacity to reduce kudzu bug populations. This is good news for soybean growers."

This research is funded by grants from the United States Department of Agriculture's National Institute of Food and Agriculture and the South Carolina Soybean Board. The researchers are also studying other possible biological control options for kudzu bugs.

Source: A. Denise Attaway/Clemson University



BY THE NUMBERS

Nothing in ag is as busy as a bee



80% of our food crop is pollinated by honey bees

1 of every 3 bites of food is directly or indirectly from honey bee pollination

Honey bees pollinate an estimated **\$15 billion** of U.S. crops every year



8-18% Increase in yields of soybean fields near honey bees according to some findings

1 bee colony can pollinate **300 million** flowers a day. That's about **4 million** soybean plants.



A queen can lay up to **2,000 eggs** per day. That's about 1 every 45 seconds. (Whew!)

1 ounce of honey can fuel a honey bee for a flight around the world

Honey bees fly about **55,000 miles** to produce 1 pound of honey

Sources: 'Brazilian Archives of Biology and Technology An International Journal, Vol. 48, n.1:pp. 31-36, January 2005 ISSN 1516-8913 Printed in Brazil' Angela D Upah, Troy J Askelson, Gerald W Hayes Jr, Catherine L Turner, Derek J Cornelius and Richard Joost (2015) Do Honey Bee Ecosystem Services Benefit Soy Farmers: An Opportunity For Stakeholder Collaboration. TCM 9 June 2015



Credit: United Soybean Board

102 million metric tons

The amount the U.S. Department of Agriculture (USDA) hopes to reduce greenhouse gas emissions by 2025. (USDA)

63 percent

The percentage of total acreage of conservation tillage in the U.S. today. (United Soybean Board)

\$72.3 million

The amount of new funding USDA has pledged for soil health and nutrient management. (USDA)

40,100

The number of jobs U.S. farmers and ranchers will add to the U.S. economy if the Trans-Pacific Partnership is passed. (American Farm Bureau Federation)

8.3 million tons

The amount global soybean production is projected to increase from the current year. (USDA)

31 percent

The percentage of American farmers who are women. (USDA)

SoyFutures

Farmer Lynn Rohrscheib Redefines Effective Ag Leadership

By **Darcy Maulsby**

It's a conversation Illinois farmer Lynn Rohrscheib will never forget. She was attending an ag conference near Chicago when she was approached by a woman who was alarmed about genetically-modified organisms (GMOs) and crop production products like Roundup herbicide.

"She got in my face and asked, 'How can you sleep at night knowing you're causing cancer and killing people?' said Rohrscheib, 32, who raises corn, soybeans and wheat and also runs a custom application business with her family near Fairmount, Ill.

A startled Rohrscheib took a deep breath, collected her thoughts and told the woman that she understood her concerns. "I also tried to show how we're a family farm and said, 'I want you to know that as a farmer, I don't want to put anything on my crops that would harm anyone.'" After the 10-minute conversation, Rohrscheib wasn't sure she had made much of an impact.

"Many people today are far removed from agriculture, and there's so much misinformation being spread about food and farming. I was encouraged, however, when the woman said she would research these issues more."

Top five tips for success

Rohrscheib has never been afraid to tackle challenges and influence conversations about agriculture. She's also redefining what it means to be a farmer in the twenty-first century.

"I'm not a silent partner," said Rohrscheib, who manages the family's large farm and custom application business with her parents, Vernon and Mary Rohrscheib, along with their 15 to 18 employees. "I handle paperwork, work with landlords, drive tractors, get dirty and help out wherever I'm needed."

This has been a natural progression for Rohrscheib, who was more likely to be riding in farm equipment as a child than playing with dolls.

Her parents never discouraged her interest in agriculture. "I was 'job shadowing' with my parents and grandparents since I was a little kid," said Rohrscheib, a national finalist for the Future Farmers of America (FFA) Star Farmer of America award in 2004. "If I wanted to do something related to farming, my family encouraged me."

Rohrscheib is the product of nine generations of farmers in her family, including farm wives who took an active role in the operation. Her grandmother Nellie Brooks worked alongside her husband and operated tractors into her 80s.

"My grandma understood when I couldn't make Sunday dinner or I was late to other family gatherings because I was farming," Rohrscheib said. "While she cautioned me that farming isn't an easy job, it's a really great feeling to do something I love. There's always something new in agriculture, since this industry is constantly evolving."



"There's always something new in agriculture, since this industry is constantly evolving."

— Lynn Rohrscheib, Illinois farmer

Lynn Rohrscheib was more likely to be riding in farm equipment as a child than playing with dolls. Today she manages the family's large farm and custom application business with her parents and does everything from handling paperwork and working with landlords to driving tractors. *Photo courtesy of Lynn Rohrscheib*

After earning her degree in plant and soil sciences from Southern Illinois University in 2005, Rohrscheib returned to her family's farm to begin her ag career. Rohrscheib, who has embraced many ag leadership opportunities, is also an active member of the Vermilion County Farm Bureau. Here are some of the most valuable lessons she's learned along the way:

1 Develop your network. Rohrscheib has participated in the American Soybean Association (ASA) DuPont Young Leader program and the Illinois Farm Bureau's Young Leader program. She has also served as an at-large director and vice chair of the Illinois Soybean Association (ISA) for the past three years and was appointed a director of the United Soybean Board (USB) in October 2015.

"Getting involved in these groups gives you camaraderie and a network of friends you can bounce ideas off of," Rohrscheib said. "You can also work together on common goals."

2 Challenge your thinking. When Rohrscheib attends educational meetings, she looks for sessions that may not apply directly to her farming operation but offer valuable insights. "We don't raise livestock, but I've learned a lot about communicating with the public by attending seminars on animal activists in agriculture," Rohrscheib said. "Challenging your thinking helps you become a better farmer."

3 Share your story. Rohrscheib manages Rohrscheib Farms' Facebook page, where she posts photos, farm updates and ag facts. Beyond social media, it's also important to be involved in the community.



Lynn Rohrscheib (*front row, center*), who has embraced many ag leadership opportunities, serves as vice chair of the Illinois Soybean Association Executive Committee. *Photo courtesy of Illinois Soybean Association*

"When you give back to your local community, people get to know you as a person," said Rohrscheib, a member of the ASA's Advocacy Communications Team. "This also lets you get your story out there and help consumers feel more comfortable about the safety of the food products they're purchasing," said Rohrscheib, who recommends avoiding "farmer jargon" and keeping the message simple but clear when communicating with non-farm audiences.

4 Connect with lawmakers. Why become acquainted with your local, state and national lawmakers? "Less than 2 percent of the population is involved in agriculture, and we need to speak up for our industry," said Rohrscheib, who's local Farm Bureau hosts a meet-and-greet with lawmakers. Following this event, Rohrscheib sends lawmakers a thank-you note, invites them to tour her family's farm and encourages them to stay in touch, especially when they have questions about agriculture. "I've had several lawmakers take me up on this," said Rohrscheib, who serves on the Illinois

Farm Bureau's Governmental and Legislative Affairs Committee. "They've asked for my take on how potential legislation would impact our farm."

5 Focus on continual improvement. Rohrscheib works with the local soil and water conservation district to collect water samples from her family's fields each week and have the water tested. The information is helping build a database to help farmers learn what farming practices offer the most benefits and which ones are less effective. "We're also looking at new technologies to produce higher yields while managing nutrients more effectively and caring for the environment," said Rohrscheib, who supports more funding for agricultural research at the university level. "I want to make sure we're good stewards of the land who protect this valuable resource for future generations."

These thoughts cross Rohrscheib's mind as she looks across the fields her great-grandfather farmed in years past. "I'm excited about the future and appreciate the opportunity to help give farmers a voice. There will always be a place in my heart for agriculture." ■

Do you know someone who represents the diverse, changing face of agriculture that should be featured in Soy Futures? If so, send an email to jbright@soy.org.



The Pioneering Spirit of the Erickson Family Keeps Farm Moving Forward

Photo courtesy of Edwin Erickson, Jr.

The Erickson family in Milnor, N.D. has been farming there since the 1860s. *Pictured left to right: Terry Erickson (son of Edwin, Sr.), Edwin Erickson, Sr., Edwin Erickson, Jr., and Jaden Erickson (son of Edwin, Jr.).*

By **Tamara Hinton**

Listening to Edwin Erickson, Jr. describe his family's farming history in North Dakota, is like jumping into the pages of an American pioneer novel, where families, lured by the promise of land and opportunity under the Homestead Act of 1862, settled on the prairie to farm. It was not an easy life and survival meant overcoming the challenges of growing crops in difficult, uncultivated soil with extreme weather conditions. Sheer grit and the ability to adapt kept farming operations viable.

“Dad showed us through the years that if you can’t afford it, you fix it. If we couldn’t buy it, we tried to build it to take its place” – Ed Erickson, Jr.

“It was a tough road,” said Erickson, Jr., a fourth generation farmer from Milnor, N.D. and member of the board of directors for the American Soybean Association (ASA). “They didn’t want to give up and the nature of farmers is to keep going.”

Such was the determined life of Erickson’s great-grandfather who arrived in Sargent County, N.D. by way of Norway and New York and homesteaded in Central North Dakota near what is now called Buffalo Lake.

“I would have liked for them to settle in the Red River Valley where the land was flat and beautiful, and where there are no rocks,” continued Erickson, Jr. “But at that time, the first thing they thought of was water so that’s where they settled.”

The Erickson family settled in what is now known as the Prairie Pothole Region and they have been farming there ever since. Indeed, a pioneering spirit has helped the family through the years to adapt to the volatility of markets, the extremes of North Dakota’s weather patterns from snowfalls and freezes to droughts, newer farming and conservation methods such as no-till to minimize erosion, advances in technology and farm equipment, and the ever changing landscape of farm policy.

Like any experienced farm family, their history is peppered with both triumph and struggle. Erickson learned the ropes from his grandfather, Alvin, and father, Edwin, Sr. and joined the family operation in the mid-1980s. Younger brother, Terry,



Ed Erickson, Jr. (pictured) worked with his family to build the Eagle Ditcher, a more efficient ditching and terracing machine that works in both wet and dry conditions, and from there started an equipment manufacturing company they still run today. Photo courtesy of Edwin Erickson, Jr.

would follow suit a few years later.

“The ‘80s, in particular, pulled the rug out from a lot of the farmers and some just quit,” said Edwin Erickson, Sr. “We did manage to hang on.”

“We have gone through the good times and the tough times,” added Erickson. “We struggled like everyone else. We had to really restructure to survive.”

Part of that restructuring meant thinking innovatively about using their resources to improve and expand farm practices, and even rebuild farm equipment. In the beginning they primarily grew barley, wheat and sunflowers, but better tillage and inputs enabled them to shift their operation toward soybeans. This mirrors a larger trend across the state

where soybean production increased 579 percent from 1980 to 2014. North Dakota now ranks as the ninth-largest soybean producing state.

The Ericksons also grew frustrated by the limits of some of their equipment, especially given the various soil types and moisture variations in North Dakota, so they began to design and develop new machines to address certain issues they were having. “Dad showed us through the years that if you can’t afford it, you fix it. If we couldn’t buy it, we tried to build it to take its place,” said Erickson, Jr.

That is exactly what they did in the late 1990s when they started toying with an idea for building a more efficient ditching and terracing machine that would work with both wet and dry conditions. They also wanted their ditcher to dig and clean ditches, create terraces to prevent soil erosion, and build berms and dikes.

Father and sons made a ditcher prototype in the winter of 1998, but the ground at their farm was frozen solid forcing them to haul it all the way to Kansas to give it a test run. It did not work according to plan and they pulled the ditcher back to North Dakota for modifications and then headed south again for more testing. They finally settled on what would become the Eagle Ditcher and took their invention to the Big Iron Farm Show in West Fargo in 1999, where they sold nine units and later won first prize at the South Dakota State Fair for an agriculture invention category. Afterwards, they founded an

(continued on page 10)

equipment manufacturing company to continue building and selling Eagle Ditchers that they still run today. They have also secured three patents on special Eagle Ditcher systems.

Erickson has taken this experience and perspective on the farm and in business to the advocacy realm, too. He recognized early on that the changing times require changes to farm policy, and he serves as the North Dakota voice and representative of the board of directors for ASA.

"I initially got involved years ago because I thought farm policy was broken," Erickson, Jr. said. "It's something that we live every day and we see how programs have to change with times to meet our needs."

This year he serves as the ASA chairman of the Commodity Classic Committee, which is an annual farmer-led, farmer-focused convention and trade show. He also serves on ASA's crop insurance and farm policy committee, which will examine the effectiveness of the farm safety net as Congress gears up to reauthorize another farm bill.

"We have a lot of work to do in the next farm bill to make certain it is working as intended," Erickson said. "So many farmers are struggling right now to get operating loans because of the depressed farm economy."

Erickson knows that expanding opportunities overseas for soybean growers will also help them going forward and has been an advocate for ASA on trade issues. Trade is critical for North Dakota growers, as more than a majority of soybeans leave the state and are exported each month.



Edwin Erickson, Jr., speaking at the North Dakota Soybean Expo in 2015. He views his efforts with ASA and the North Dakota Soybean Growers Association as a way of helping provide consumers, as well as policymakers in Washington and on the state level, with facts. *Photo credit: Mary Morken.*

For a time Erickson served on ASA's Trade Policy and International Affairs Committee, where he traveled to China and other countries to promote market access for American soybeans. "People like to know who they're dealing with," Erickson said. "It is very important to establish relationships and educate people on soybeans across the world."

He continued, saying that education is key to countering the myths and misinformation that critics and some others perpetuate about farmers, farm policy and farm practices. He views his efforts with ASA and the North Dakota Soybean Growers Association as a way of helping provide consumers, as well as policymakers in Washington and on the state level, with facts.

"There are a lot of rumors and misinformation that we as farmers

have to debunk," said Erickson. "This day and age, people just go to the store and think everything magically appears."

Erickson and his family know all too well that the nation's food supply comes from hard work, discipline, determination and a whole host of other factors. He is passing on this work ethic and practical experience to his son, who also joined the family farming operation in addition to plans to attend North Dakota State College of Science in the fall. While Erickson wants his son, Jaden, to continue his education, he also hopes he will continue the long and storied family farm tradition as well.

"It's a tough life, but it's a rewarding life," Erickson said. "I wouldn't want to be anywhere else but on the farm." ▣

"This day and age, people just go to the store and think everything magically appears." – Ed Erickson, Jr.

Soy SHOTS

Submit Your Soy Shots at:

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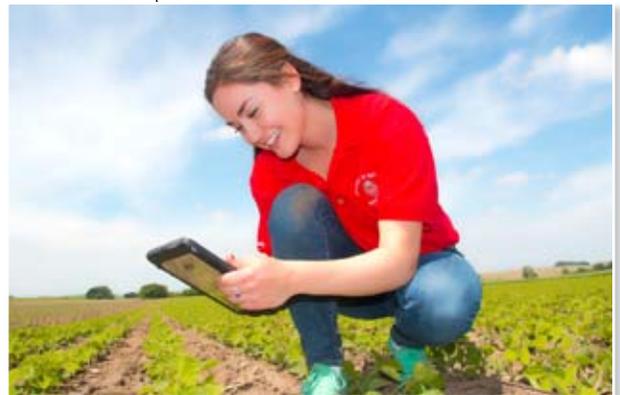


Tyler Franklin takes a break from planting soybeans in Essex County, Va. to let his son, Harper, drive the John Deere 4440 tractor.
Photo courtesy of Tyler Franklin

Marian Lund (*below*), a graduate student at University of Wisconsin Madison, uses the Bean Cam app on newly emerging soybeans. The app, developed by the University of Wisconsin Nutrient and Pest Management Program, calculates plant population by averaging five plant count samples randomly taken within a soybean field at the VC, V1 or V2 growth stage. The app calculates expected percent yield at harvest with and without spring replanting. *Photo credit: Rodger Schmidt*



Jim Fitkin checks on his bean field just to the north of Cedar Falls, Iowa. *Photo courtesy of Jim Fitkin*



The Beyer family's dog, Stella, peeks through the soybean canopy as they check their fields in Wheaton, Minn.
Photo courtesy of Jamie Beyer



Aubrey (*left*) and Isaac Hendricks (*right*) double check their dad's seed depth and placement on the family farm in Russellville, Ky. *Photo credit: Adam Hendricks*

ASA in Action

ASA Calls on Congress to Get to Work on TPP



The American Soybean Association (ASA) renewed its call for Congress to work toward passage of the 12-nation trade pact, pointing to a report from the International Trade Commission (ITC) showing the American agriculture industry as among the largest beneficiaries from a potential Trans-Pacific Partnership (TPP) trade agreement.

According to the report, by 2032 exports to TPP nations would increase by \$27.2 billion and the agricultural economy in the U.S. would grow by \$10 billion, the greatest gain of any American industry sector. For soybean farmers, the benefits of TPP come in the form of increased soybean meal sales domestically to meet demand created by increased meat exports to TPP nations.

"As we have said consistently, each sector within the American agricultural economy is very closely connected to the next, and nowhere is that more clear than in the case of soybeans and livestock. The TPP is a win for soybean farmers because it means more meat exports. When our partners in the pork, poultry, beef and dairy industries do well, we do well," said ASA President Richard Wilkins, a soybean farmer from Greenwood, Del.

Specifically by market, the TPP would provide positive benefits for the U.S. food and agriculture sector, primarily through new export market access in Japan and Vietnam—two countries where the agricultural sectors are currently protected by high tariffs.

"Soybeans continue to see great success in the Asian and Latin American marketplaces, and we look forward to TPP expanding and growing that success," added Wilkins. "None of that can happen, however, if the agreement continues to lay dormant waiting for Congress to do its job. We understand that the political environment is difficult in an election year, but that's the job lawmakers signed on to do. TPP deserves a debate and a vote so these benefits can be realized." ■





ASA President Richard Wilkins (left) presents Johnny Dodson, of Halls, Tenn., (right) with the association's highest award – the ASA Lifetime Achievement Award-Association Focus during the annual banquet at Commodity Classic 2016. Photo Credit: Joe Murphy

Nominate Outstanding Soy Grower Leaders for 2017 Lifetime Achievement Awards

The American Soybean Association (ASA) needs your help identifying outstanding grower leaders for the 2017 ASA award and recognition program. If you know someone who goes above and beyond for the soybean industry and amplifies truly outstanding leadership, we want to hear about it and recognize them for their hard work! Three major awards are presented:

- Lifetime Achievement Award – Association Focus
- Lifetime Achievement Award – Membership Focus
- Special Meritorious Service

Please consider submitting a nominee for one or all three categories. For more details, visit ASA's website at www.soygrowers.com. All nominations must be received no later than Monday, Nov. 11, 2016. If you have any questions, email Farris Haley at fhaley@soy.org or call 1-800-688-7692 Ext. 1284. The awards will be presented at the ASA Awards Banquet on Friday, March 3, 2017 during Commodity Classic in San Antonio, Texas. □

Texas Farmer Talks Agriculture and Biotech on Mission to China

American Soybean Association (ASA) Chairman Wade Cowan, of Brownfield, Texas, joined the U.S. Soybean Export Council (USSEC) on the International Soybean Growers Alliance's (ISGA) mission to Beijing, China in early April to discuss agriculture and the valuable role biotechnology plays. China is a valuable trading partner, importing over 78 million metric tons (2014-15) with nearly 30 million metric tons coming from the United States.

"ISGA is a valuable resource for all of us in production agriculture. While we compete, and in fact complement each other in the world marketplace, we all face many of the same problems. By coming together and sharing ideas and working towards solutions, we all benefit," Cowan said. "ISGA as an organization will continue to improve and get stronger and it's great to see everyone working together on common goals, such as market access and biotech approvals." □

From left to right: Paul Burke, USSEC region director North Asia; Jim Sutter, USSEC CEO; Katherine Yin from Crop Life China; Wade Cowan, ASA chairman; Xiaoping Zhang, USSEC country manager-China, discuss biotechnology at the International Soybean Growers Alliance mission to China. Photo courtesy of USSEC



ASA Wants Your Input, You Could Win \$100 VISA Card

Tell us what you think about *American Soybean* magazine. This publication is produced by ASA and mailed to you four times a year. By completing ASA's online survey, you will qualify for a drawing where "three" winners will be chosen to each receive a \$100 VISA gift card.



Go to Soygrowers.com/magazine-survey to complete the online survey and be entered into the prize drawing. The deadline to complete the survey and enter the drawing is August 20, 2016.

American Soybean features information about innovative farming, sustainability, grassroots soy advocacy, farm and trade policy news, industry advancements, soy export promotion activity, and more.

Your feedback will help ASA better understand how future issues of this magazine can be of even more interest and benefit to you and other readers.

Please take a few minutes to complete the online survey now at Soygrowers.com/magazine-survey and you could be one of **three winners of a \$100 VISA gift card.** □

MORE THAN CONSERVAT

Soybean Sustainability Requires Holistic



ION: Approach

| By Barb Baylor Anderson

You don't see many stools with only one or two legs. That's because obviously they can't stand up. But adding a third leg stabilizes the stool so it might function at its best.

Similarly, agricultural sustainability requires three segments to be effective. Soybean farmers must put into practice not only the environmental components of protecting water and soil quality, but also the economic and social components of sustainability to optimize business.

Reduce environmental impact

Todd DuMond, DuMond Ag, LLC, Union Springs, N.Y., farms with his parents, Eric and Marge. They have ever-changing farm goals, but one that does not change is improving the soil.

"We raise corn, soybeans, wheat and alfalfa, and rotate every acre, every year," DuMond said. "We use minimum and reduced tillage, but we are moving toward more no-till and are almost 100 percent in cover crops during winter. We optimize every input for soil potential, and we are using precision agriculture to enhance such soil properties as water-holding capacity."

The DuMonds use high resolution soil data and study 50-foot grids to help make their input decisions. "You have to understand the potential of your soil. We have small fields with a tremendous range of soil capacities. We might see 75-bushel soybeans in one section of a field and only 30

bushels a hundred feet away," he said. "We can't manage all of our fields the same way or we lose potential on more productive ground and overspend on less productive ground."

Optimizing crop production is top of mind as the family evaluates variable rate seed applications and use of fertilizer stabilizers. They also are considering placing specific soybean varieties in fields, but Todd said measuring the exact impact of these practices is tough.

"Are we successful? I would like to think we get better every year," he said. "On the other side, I may buy and sell our crop five to seven times per season to capitalize on market volatility. I prefer to generate returns on volatility and see that as a good, but challenging, opportunity."

Roger Wolf, Iowa Soybean Association director of environmental programs and services, said today's farmers have no choice but to maintain or increase productivity by improving efficiency.

"When you think about sustainability from the environmental side, soybean farmers must address soil conservation issues and their natural resources base to be profitable," he said. "Farmers must learn to incorporate technology to minimize loss and maximize sustainable practices."

For example, Wolf recommends farmers start with in-field practices. One critical soil management need is to keep erosion in check through less tillage and less soil disturbance.

(continued on page 16)



Todd DuMond, a farmer from Union Springs, N.Y., says improving the soil on his farm is one goal that never changes.

Photo courtesy of Todd DuMond

(continued from page 15)

"You also must understand the implications of nutrient use and water management," he said. "In many places, farmers must gain a better understanding of tile drainage and whether nutrients are being carried off. Farmers can monitor water through their own on-farm research."

In fact, on-farm research already has confirmed such practices can work. And Wolf said more stakeholders increasingly want to see the results of better soil and water management.



Roger Wolf, director of environmental programs and services for the Iowa Soybean Association says farmers must learn to incorporate technology to minimize loss and maximize sustainable practices.

"Data confirm nutrient management works. Water issues are a big deal with the public and in downstream urban areas. We must work on watershed solutions with these partners, and see that our soil and water management provide opportunities to drive future discussions," Wolf said.

In the Mississippi River basin, for example, nutrient loss reduction strategies in several states are formulating how water quality is addressed. "The supply chain needs to engage at the state level and help

farmers advance their infrastructure investments," Wolf said. "When we have the data, we can make more informed decisions and enable sustainable decisions. It has value, and that is why farmers must embrace data collection and play a role in the decisions that affect them."

Find economic opportunities

Quint Pottinger, corn and soybean farmer from New Haven, Ky., defines economic sustainability as increasing their family farm's production efficiency without lowering their bottom line. He farms with his father, Raney, evaluating various practices to improve their sustainability efforts.

"You can only be more sustainable if you know your efficiencies," he said. "With lower market prices, it is even more important to know where you can make changes to improve your balance sheets. We have been growing our farm acreage as prices have dropped, and we have figured out how to determine what is a necessity and what is a luxury for us."

Pottinger is always evaluating the quality of their acres to determine if they might put some acres into fallow in the future or rotate acres into grazing cattle to increase efficiency. He also explores use of more cover crops versus fertilizer use to manage nutrients. The Pottingers have planted wheat and clover as cover crops and are trying tillage radishes and chick peas.

"Cover crops help soil structure. The goal is to aerate the soil and reduce tillage. You want more oxygen for the microbes to work," he said. "As we expand and improve more ground for production, we disk and do some deep tillage first. Our farm is then 100 percent no-till."

Precision agriculture works into the economic, as well as the environmental focus. "We analyze yield differences by reviewing field and soil conditions in the fall and how different varieties responded. We look for patterns to see what performed best in what locations," Pottinger said.

He prefers to measure yield differences at harvest with monitors instead of relying on the elevator scale. "We are within 4 percent accuracy. On October 15 last year, we knew why we had 55- versus 65-bushel beans, identified our soil problems and variety reactions and planned for how we would manage it this spring," Pottinger said. "We determined when we may need more fertilizer."

The father-son team added variable rate planting this year to increase the stand count in no-till and to try and get more consistent depth. "We calculated that it is pennies to increase emergence with our planting strategy, and we have increased our soybean counts 4 to 5 percent," he said. "Next we want to do multi-variety planting to vary seed and variety per acre. We will plant seed using two meters per row that will vary based on the soil conditions. It is a huge investment, but when we spread it out over all our acres, the investment pays off."

Raney Pottinger used to provide custom farming services. He and Quint took a look at their equipment inventory when he got out of the business, and determined it was better to sell off the newer equipment used for custom farming and buy cheaper replacement equipment to maintain their preferred debt-to-asset ratio. Dependability is the tradeoff that came with the decision.

"We work to make the best financial decisions for the farm, whether that is our equipment costs or our crop

sales," he said. "We do our financial projections in the fall and then take a look at our needed cash flow. We set up three scenarios and use the worst case scenario to set our sales prices. We use a cost per bushel to figure prices since that is how we are paid."



In New Haven, Ky., soybean and corn farmer Quint Pottinger says you can only be more sustainable if you know your efficiencies.

Pottinger plans to continue to break that down in the future. "We plan to get scales on our farm to measure test weight since that affects the bottom line. We want to break bushels down into pounds so we can weigh and compare yield and test weight to determine pounds per acre for the real value of our crops," he said. "It is the art of farming."

That may help him fine-tune sales decisions. Pottinger uses the cash market and generally sells one-third in January at a price that will allow enough profit to make their cash flow work.

"You need a solid cash flow plan. For our cash rent, seed and operating notes, we know what is in the bank and what is in the bin. We use that information to make pre-purchase decisions and determine if we have enough in the bin to pay cash or whether we need to use our

operating note and pay interest," he said. "Know what each acre costs and what it will produce."

Grow social benefits

While farmers intuitively may know their operations must be environmentally and economically sustainable, the benefits of social sustainability are not always as clear. Finding ways to expand the current, traditional soybean customer base through long-term market development may allow farmers to strengthen their potential opportunities and contributions to local communities.

Market development includes such areas as soybean bio-based products and soy-based feeds for the aquaculture industry. Food-grade soybeans and edamame markets provide other options.

Farmers in Arkansas are learning edamame might be a way to expand soybean production and profitability potential. Lanny Ashlock, retired University of Arkansas Extension soybean specialist, has been involved with edamame production in the state. He said as demand for the product began to increase, the state's breeding program was able to develop appropriate varieties.

"We have made great strides in growing edamame in Arkansas to meet a ready, value-added market," he said. "Farmers are finding there are opportunities to grow them under contract for domestic buyers, as long as they meet the high quality standards for size and uniformity."

Ashlock said while it is possible farmers could develop their own edamame markets, Arkansas has a processing facility that contracts with farmers that has doubled its capacity in four years.

(continued on page 18)

Biotechnology Contributes to Sustainability

Biotechnology has been heralded for its contributions to sustainability – environmental, economic and social. Farmers can increase yields and reduce costs through improved pest protection, as well as conserve soil and energy, reduce greenhouse gases and minimize herbicide use. But one benefit farmers may not realize is its potential impact on sedimentation.

Roger Wolf, Iowa Soybean Association director of environmental programs and services, cites research published in the *Journal of Environmental Quality* in 2009 that showed long-term sedimentation trends in the Raccoon River in Iowa. Sediment is considered a pollutant that negatively affects surface water quality and municipal water supply treatment. Objectives of the study were to evaluate long-term patterns and trends, and relate these to changes in climate, land use and agricultural practices that occurred during a 93-year monitoring period, since 1916.

Study results indicated that significant sedimentation occurred in the river during the 1970s and 1980s when row crop production increased. But after biotech soybeans were introduced in the 1990s and conservation improved, a sharp decline in sedimentation was noted.

"Overall, results from this study suggest that efforts to reduce the sediment load from the watershed appear to be working. We believe it is a direct response to biotechnology being introduced and compliance with conservation strategies," Wolf said. "Biotechnology makes conservation easier to embrace. I am optimistic that science and technology will always give farmers the ability to be more productive and profitable and better soil and water health."

(continued from page 17)

“This was a market that was looking for farmers to grow edamame. Additional markets are developing in other states as buyers prefer to source U.S. production,” Ashlock said.

The American Soybean Association (ASA), through the U.S. Soybean Export Council (USSEC) and other industry partners, has long helped build food-grade and other soybean markets overseas. ASA invests cost-share funds provided by the U.S. Department of Agriculture’s Foreign Agricultural Service (USDA/FAS) to operate USSEC’s global offices and promote U.S. soybeans.

In addition, U.S. soybean farmers founded the World Initiative for Soy in Human Health (WISHH) in 2000 to build the groundwork for future U.S. soybean markets. WISHH works in more than 20 emerging markets to improve health and nutrition that may lead to soybean sales down the road.

Social sustainability also includes preserving the freedom to operate for U.S. farmers. ASA’s advocacy efforts include securing federal legislation that includes strengthening crop insurance, streamlining conservation programs and supporting trade promotion.

Most recently, ASA has been monitoring efforts for Monsanto’s Roundup Ready 2 Xtend (RR2X) soybeans to gain final approval from the European Union (EU) Commission. RR2X soybeans are tolerant to dicamba and glyphosate herbicides, but no dicamba herbicides were approved for use on RR2X soybeans during 2016. ASA, USSEC, Monsanto and others also have been working with both EU and U.S. government officials to approve additional pending new biotech soybean traits. ▣

Customers Seek Sustainable Soy



Brent Babb (Left), regional director of Europe & Middle East/North Africa for the U.S. Soybean Export Council, says soybean customers around the world are demanding soybeans come with a sustainable stamp of approval.

Soybean customers around the world are not only taking note of whether or not farmers use sustainable practices, they are demanding soybeans come with a sustainable stamp of approval.

“Our focus on the Soy Sustainability Assurance Protocol (SSAP) comes from customer requests that started six to eight years ago,” said Brent Babb, U.S. Soybean Export Council (USSEC) regional director of Europe & Middle East/North Africa. “USDA has built on the sustainability principle since the 1930s to improve conservation, and we are now sharing that information.”

International customers first looked to the Roundtable for Responsible Soy (RTRS), which was created in 2006 to focus primarily on the sustainability of South American soybeans.

“RTRS did not capture the market, but it did bring global attention to the issue of sustainability,” Babb said. “RTRS was not designed for U.S. soybean production. Since U.S. agriculture already had such a strong regulatory and best management practices system for conservation and sustainability, we were able to create the SSAP in coordination with the U.S. soy industry and others in the supply chain.”

SSAP covers the environmental, economic and social segments of sustainability, which Babb said has been a success so far with soybean customers. Since nine out of 10 U.S. farmers participate in the federal farm program, their soybeans are automatically part of SSAP. Biotech soybeans qualify, as they underline the benefits of sustainability – feeding more people on less land through increased yields, better pest management, and a reduced environmental footprint.

“We have shipped four million metric tons of SSAP-certified soy from the U.S. so far this year, which includes whole soybeans, soybean meal, oil, hulls and soy protein products,” Babb said.

The European feed industry has approved SSAP soy feeds for Europe, according to Babb.

“SSAP gets us in the top echelon of markets where customers are focused on sustainability. Sustainable certification improves our reputation and allows us to tell the farmers’ story,” Babb said. “We need to strengthen our reputation in a competitive environment. Price determines a lot of buying decisions, but we also need a sustainable, quality product to be in the mix.”

SoyTown Hall

**We asked farmers:
“How do you define
sustainability?”
Here’s what they said:**

**Keith Dohrman, Sweet
Springs, Mo.**

“Sustainability is about investing in the entire operation, protecting and improving our resources, including the land and the livestock, as well as growing our knowledge and use of technology, to ensure farming is an option for the next generation.”

**Dwight Mork, Bellingham,
Minn.**

“To me it means making a livable profit. I do some no-till because it leaves the land in better shape because of less erosion. Leaving the land in better shape for the future farmers is the best way to sustain the land and farm economy. I am renting some land to starting farmers and I am installing tile in the places that will increase crop production. Water control structures are also important to leaving the land better than I received it from my dad. I am soon to be a Century farm. Those who came before me did the best they could to leave the land in better shape.”

**Denise Cannatella,
Melville, La.**

“To me, sustainability means that it is re-occurring. Something I can always depend on being there. In the case of our food system, it means that farmers will always be able to grow the type of food to sustain our population needs!”

Brad Kremer, Pittsville, Wis.

“Sustainability to me is economic; farmers need to be profitable in order to sustain their farms for generations. First and foremost, we need to be sustainable financially. Also, it means doing and putting things in place for the next generation financially, through conservation, transition plans. It’s also doing more with less—how do we grow more crops with less resources and environmental impact? GMOs are allowing us to do that. We are spraying fewer chemicals and using less fertilizer, fuel—we have technology like auto guide. To me sustainability is not just one thing it’s a little bit of everything. I think today’s farmers are the most sustainable farmers in the history of farming. They’re growing more food with fewer resources, less land, with less environmental impact than any farmers in the history.”

**Jenny Dewey Rohrich,
Ashley, N.D.**

“Often times when thinking about sustainability, we immediately go to environmental. But sustainability is so much more than that. In the farming world, sustainability relies on a couple different factors. Economic. Are the practices farmers using allowing them to stay in business and make a living? Are farmers able to produce the same or more with less costs or inputs? Generational. Are farmers utilizing practices that will ensure farms can continue onto the next generation? Are farmers cultivating relationships that encourage a next generation? Is technology being utilized in order to better help the next generation succeed? Social. Are farmers doing their part to ensure food remains affordable and available to the public? Are the practices farmers using in the best interest of consumers and others purchasing the food and commodities we grow? Are the practices farmers using regulated and safe for the public? Environmental. Are farmers utilizing practices that are utilizing fewer resources but producing more? Are farmer practices being conscious of the environment?” ■





ECONOMIC \$USTAINABILITY

Tying Together Profitability, Stewardship and Productivity on the Farm

By **Vincent Smith, Ph.D.**, *Montana State University, Department of Agricultural Economics and Economics, Visiting Scholar and Director, Agriculture Studies, American Enterprise Institute*

Agricultural sustainability means very different things to different people. Used by an ecologist, it may be intended to convey one concept, by an environmentalist or organic foods advocate another, and it has a third or fourth interpretation when used by an economist. Often the phrase is intended to emphasize that agricultural production has spillover or “externality” effects on groups other than farmers and consumers.

An ecologist or biologist is likely to focus on the ecosystem impacts of agricultural production. In that context, sustainable agricultural and land management sustainability could mean expanding the diversity of plant and animal life, perhaps with a specific benchmark in mind; for example, reintroducing wolves into the Yellowstone ecosystem.

Sometimes sustainability includes a particular perspective about

landscape. Many environmental activists object to clear cutting mountainside forests because the resulting landscape is unattractive and cannot be returned to its pristine condition. Certainly, clear-cutting can cause rapid soil erosion, loss of old-growth forests and habitat for genuinely endangered species, and loss of plant-life diversity. But many clear cuts, as they age and are filled in with native grasses

“Economic sustainability for an individual farm means that it is managed in ways that ensure it is profitable over the longer run.” — Vincent Smith

and wildflowers, offer improved opportunities for sustaining wild life and plant life. Logging roads give people better access to wilderness areas for a wide range of recreational activities. And where forests are economically valuable because of the timber they generate and forestry is regulated to protect the environment, commercial incentives may ensure that those forests exist for a very long time.

In an economic context, agricultural sustainability can also have multiple meanings. Economic sustainability for an individual farm means that it is managed in ways that ensure it is profitable over the longer run. The farm does not have to make a profit every year; prices vary and agricultural production is subject to the vagaries of the weather, pest and disease damage. But over the longer term, the farm operation has to cover its costs, including the opportunity cost of the farmer’s time and effort and returns to equity in land and other assets.

Most successful agricultural producers understand those facts and organize their operations to deal with fluctuations that inevitably occur in their incomes and production costs. They have low debt to asset ratios (the sector’s debt to asset ratio is currently about 13 percent), diversify crop and livestock enterprises,



Professor Vincent Smith, Montana State University, Department of Agricultural Economics and Economics.

strategically use market-based risk management strategies and effectively exploit federal government subsidy programs. Within the farm household, families allocate their time to on-farm work and off-farm employment (driving a school bus, a spouse who is a physician or school teacher, etc.).

Farms that are economically sustainable also typically practice good stewardship by maintaining the productivity of their land, typically in ways that address important environmental objectives. They conserve soil and moisture through terracing, wind breaks, no-till planting, etc.; enhance nutrient content with crop rotations; and

minimize nitrogen and other types of chemical use and run off using precision agriculture technologies.

A word here about GMO (genetically modified organism) varieties: Many GMO varieties mitigate the effects of pest infestations and plant diseases, enabling farmers to reduce their use of highly toxic herbicides and pesticides. So, many GMO varieties provide a win-win technology for the farm sector and the environment in terms of economic and ecological sustainability.

From a sector wide perspective, economic sustainability does not rest on the survival of any particular farm-firm operation. The issue is not whether, in say a highly rural county in Illinois, Farmer Jones’s soybean and corn operation fails, but whether the agricultural sector as a whole is economically viable. Individual farms fail for many reasons; poor management, uninsured expensive adverse health events, alcoholism, etc. However, most often the land is simply transferred to another producer; a tragedy perhaps for the previous owners, but not for agricultural production within the U.S. farm sector.

For example, if, in 2012, a farmer in a highly rural area took on substantial debt to pay very high prices for additional corn/soybean acreage in the belief that record \$6 a

“In practice, the long run viability of the U.S. agriculture sector depends on maintaining the productivity of the land base and the continued generation of improved technologies that conserve and increase agricultural productivity.”

— Vincent Smith



through regulation (not subsidies), farmers are required to modify their production practices at their own cost. Examples include the use of fertilizer and other chemicals.

So what does all this mean? “Sustainability” is often a vacuous political buzzword used to validate the goals of particular interest groups. Who, for example, could possibly vote against funding sustainability oriented ecological or environmental research? And who could vote against federal subsidies that ensure the “sustainability of the family farm?”

bushel corn prices would continue in perpetuity, then his failure to service his debt three years later when corn prices returned towards their long run average trend was simply the result of poor decision making. Many businesses, within and beyond the farm sector, fail for exactly that sort of reason, but the sector remains economically viable.

Does an environmental perspective on sustainability always fit with an economic definition of sustainability for the agricultural sector?

Sometimes it doesn't. In the Yorkshire Dales National Park in England, environmentalists and the general

public want the landscape to include a specific feature: extensive dry-stone walls that run up the sides of the steep hills that surround narrow river valleys. Absent government regulation, dairy farming may be viable in the valleys and sheep viable on the hill slopes. However, dry-stone walls are labor intensive and prohibitively expensive. The solution; let the people who want the dry-stone walls pay for them: in this case through government subsidies.

Sometimes, in contrast, farming practices do have adverse environmental effects but would remain economically viable if,

In practice, the long run viability of the U.S. agriculture sector depends on maintaining the productivity of the land base and the continued generation of improved technologies that conserve and increase agricultural productivity. Farm operators have every incentive to maintain the productivity of their land and the U.S. public and private agricultural research communities are really good at developing new agricultural technologies when they are adequately funded. So, in summary, the future for U.S. agriculture is bright, not gloomy, and definitively sustainable. ■

Industry Perspective

Shrinking Footprints, Expanding Accountability

| By Candace Krebs

The soybean industry's agribusiness partners continue to forge ahead with ambitious sustainability initiatives that demonstrate accountability and commitment to progress.

Last December, Monsanto announced plans to make its entire operational footprint carbon neutral by 2021 through collaboration between the company's seed and crop protection operations and with its farmer-customers.

That move came as the company continued to advance on several broad sustainability planks it put in place back in 2008, said Mindy Whittle, Monsanto's soybean industry affairs lead.

Those goals include reducing greenhouse gas emissions from its crop protection operations 22 percent by 2020 (so far Monsanto is 73 percent of the way there); increasing irrigation application efficiency across global seed production 25 percent by 2020 (now 35 percent of the way there) and helping farmers use nutrients more efficiently to curb greenhouse gas emissions on 1 million acres in the United States by 2020 (now at 20 percent of that goal.)

DuPont is focusing on reducing its operational footprint as well, in addition to integrating sustainability into its innovation process.

"DuPont strives to solve some of the world's greatest challenges



— particularly those driven by population growth and increased consumption, which are straining global food, energy, water and land resources," said Krysta Harden, DuPont's vice president of public policy and chief sustainability officer. "We are committed to using our science to bring more sustainable innovations to farmers, and we applaud the commitment of the American Soybean Association, U.S. Soybean Export Council and United Soybean Board to enhance sustainability among their members through the U.S. Soybean Sustainability Assurance Protocol."

A big challenge for growers and end-use customers today is "collecting, securing and analyzing the farm data needed to benchmark current performance and identify strategies for significant improvement while ensuring grower data privacy," said Liz Hunt, Syngenta's sustainable solutions lead.

Syngenta offers tools that help fulfill that mandate, while ultimately assisting companies like General Mills, Pepsi and McDonald's in minimizing their environmental impact.

"Through AgriEdge Excelsior and the Land.db farm-management software, growers can provide their downstream buyers with what they need to meet the demand for sustainability from the broader marketplace," Hunt said.

Farmers welcome having a roadmap that satisfies the market while also creating a platform for continual improvement they can demonstrate to the public, Hunt added.

Chad Rubbelke, a farmer from Des Lacs, N. D., agrees.

"It's pushed me to sit down and study exactly what I'm putting into my operation, not just cost-wise, but also efficiency-wise," Rubbelke said. "As growers, we're probably the most environmentally conscious people that you'll ever meet. We live in the environment that we farm, so it means a lot to us."

All three companies are also involved in Field to Market: The Alliance for Sustainable Agriculture, a groundbreaking effort to create sustainability opportunities all along the agricultural supply chain. Its unique "fieldprint calculator" generates sophisticated graphics that individual farmers, organizations or companies can use to analyze and improve their operations.

"By participating in the Field to Market initiative, DuPont Pioneer collaborates with leading agribusinesses to scale up conservation planning and practices and encourage greater adoption," said Eric Boeck, marketing director for Encirca Yield Nitrogen Management Service and DuPont Pioneer's representative on the alliance. ■

Issue Update

ASA Makes Strides in Setting Sustainability Framework

| By Beverly Paul

The Association fought for a mainstream standard to combat an unrealistic set of requirements that very few producers outside of organic production would qualify for.

The American Soybean Association's (ASA) work on sustainability standards took another significant step forward earlier this year with the finalization of the American Society of Agricultural and Biological Engineers' (ASABE) X-629 sustainable agriculture standard. The ASABE X-629 standard was influenced by the Soybean Sustainability Assurance Protocol (SSAP), developed by ASA, the United Soybean Board (USB) and the U.S. Soybean Export Council (USSEC), and functions as a more viable replacement for the Leonardo Institute's controversial 2015 LEO-4000 standard.

ASA was a part of the LEO-4000 standard in the early stages but departed following disagreements over the initiative's direction. What follows is a look at the sustainability work undertaken by ASA and the finalization of the X-629 standard.

The drive to create a sustainability standard for agriculture began in 2007, when ASA learned of an effort to set a national standard based on the idea that only organic production is sustainable. The standard was being prepared for submission to the American National Standards Institute (ANSI), the internationally-recognized coordinator of the United States' voluntary consensus standards system.

ASA leaders quickly realized the threat it posed to mainstream production agriculture. With the concept of sustainability growing in importance

for consumers, a national standard that defined sustainability as only organic and approved by an internationally-recognized body jeopardized commercial soybean production.

The draft standard was the work of Scientific Certification Systems, a company that sells third-party environmental and sustainability certification and sponsored by the Leonardo Academy, a nonprofit organization that develops sustainability standards. SCS-001 came to be known as LEO-4000 in 2010. If approved by ANSI, the LEO-4000 standard would define only organic and non-biotech food, feed and fuel as sustainable and would require elaborate certification processes for farmers.

In April 2008, ASA registered a long list of concerns with ANSI, calling the draft standard fundamentally flawed, and stating, "...the draft standard arbitrarily specifies that only organic and non-biotech production can qualify as 'sustainable' production. Such specification is not based on objective, scientific performance measures, but rather wholly subjective ideology. The draft standard arbitrarily excludes 99.8 percent of U.S. soybean production from the definition of 'sustainable' soy production."

At the same time, ASA joined with an industry-wide coalition to create the Sustainable Agriculture Standard Task Force (SASTF). ASA, the



American Farm Bureau Federation (AFBF) and the National Corn Growers Association (NCGA) were founding members of the coalition, which eventually grew to include more than 50 groups representing production agriculture.

Together, the SASTF began its work to ensure that LEO-4000 would not become the recognized benchmark to define which soybean farms would be labeled sustainable. ASA's goal, through SASTF, was to confine the draft standard to the organic niche in which it belonged.

ASA Vice President Ron Moore was an active member of SASTF, and volunteered to serve on a subcommittee for the ANSI process.

"The LEO-4000 standard was an unrealistic set of requirements that very few producers outside of organic production would ever qualify for, and if they did the cost would be extremely

high,” Moore said. “Furthermore, mainstream agriculture was not represented particularly well on the committee with only corn, soybeans, cotton and Farm Bureau in attendance. The rest of the attendees were from environmental, social justice, organic, and certification organizations.”

Moore and other SASTF representatives worked to ground impractical ideas about production agriculture, fighting off proposals that would exclude farms using most inputs like fertilizer, chemicals or biotechnology.

“There were people on the committee who did not understand that the standard they were promoting would exclude over 200 million acres of corn, soybean, cotton, and wheat,” Moore said.

In all, 10 members of SASTF, including Moore, were selected as voting members of the National Sustainable Agriculture Standards Committee. But after nearly two years it became clear that the process was biased against a balanced analysis of modern agriculture. The SASTF members resigned as a group in 2010.

Recognizing that sustainability issues were here to stay, SASTF members began a separate, grower-driven process called the National Initiative for Sustainable Agriculture (NISA), housed at the University of Wisconsin. Ultimately, together with USB and USSEC, ASA recognized the need for a unique soy standard and developed the SSAP, which led to the ASABE X-629 standard.

Still, the ANSI process wore on, and ASA continued to raise objections. In 2014, ASA again wrote to ANSI to urge rejection of LEO-4000, noting the unrealistic nature of the standard, its lack of understanding of modern agriculture practices, and the lopsided weight it assigned to environmental sustainability as compared to economic and social sustainability.

ANSI ultimately approved the LEO-4000 in November 2015, eight years after work began. While the broad-based SASTF coalition preferred for it to be rejected, the

process led to an alternate and credible parallel standard submitted through ASABE.

The ASABE X-629 standard provides a framework for continuous improvement and supports the SSAP by ensuring national standards do not discriminate against modern agricultural practices such as fertilizer, pesticides and biotechnology.

As a direct result of the SASTF’s work, the LEO-4000 standard will not be the only one purporting to represent U.S. agricultural sustainability. LEO-4000 will function only as the organic and non-GMO standard, provided that community accepts it.



Although the SASTF coalition no longer meets, sustainability remains a top priority for ASA. Additionally, given the high-profile nature of sustainability as a consumer buzzword, poorly thought-out initiatives are always around the corner. The SASTF was able to achieve its goal of confining the LEO-4000 standard to its niche in the organic community and paved the way for a legitimate sustainability framework through the ASABE that reflects all of U.S. agriculture. More importantly, the coalition set the soybean industry on its way to our own unique approach, demonstrating the sustainability of U.S. soybean production. These achievements are thanks to the time, energy, and knowledge of farmer leaders. And for the time being, their work is done. ▣

“There were people on the committee who did not understand that the standard they were promoting would exclude over 200 million acres of corn, soybean, cotton, and wheat.”— ASA Vice President Ron Moore

Soy Checkoff News from the United Soybean Board

Sustaining U.S. Soy's Sustainable Advantage



The U.S. soy sustainability story is a great one. From soil health to water management, when compared with competitors such as canola, palm and South American soybeans, the sustainable practices used by U.S. soybean farmers are second to none.

And now that great story is not only paying off in the field with environmental benefits, but with increased customer demand as well.

"A lot of our customers ask about sustainability, and some, like Unilever, a major manufacturer of food and other consumer products, have told us that they want to source 100 percent of raw materials from a sustainable source by 2020," said Neoh Soon-Bin, director at the Soon Group, an integrated grain, feed, oilseed and oil-processing company based in Malaysia.

As more consumers show interest in sustainably-sourced ingredients, more customers of U.S. soy need to prove that the raw ingredients they buy – such as U.S. soybean meal for animal feed – are produced in a sustainable manner.

"That puts a lot of pressure on us to find sustainable soybeans. And we will do what a customer wants us to do," Soon-Bin said. "If a customer insists that they want a sustainable

product, then we have to import sustainable soybeans."

Systems that show the sustainability metrics of U.S. soy production, such as the U.S. Soybean Sustainability Assurance Protocol (SSAP), Life Cycle Analysis and Field to Market, provide mechanisms for customers to demonstrate U.S. soy sustainability. Customers that are able to demonstrate sustainability are also able to add value to their end products. Combined with increased demand, proof of sustainability brings value back to you, the farmer.

But, just because the U.S. soy sustainability story is great now, doesn't mean it always will be. To prevent losing a seat at the table to another commodity, U.S. soy must maintain its sustainability advantage and continue to improve.

Improvement goes beyond implementing new sustainable management practices. Moving forward, technology and data collection will play an even more important role as end users are looking for numbers that show improvement is being made in areas like soil erosion, energy use and greenhouse-gas emissions. These numbers will only help to make the U.S. soy sustainability story even more powerful. □

U.S. Soy's Sustainability by the Numbers

U.S. soybean farmers are committed to continuous improvement – making sure the land that they farm now is prosperous for years to come. Here are just a few of the sustainable practices soybean farmers are already using day after day, year after year.

94% Soybean acres that are under planned rotation sequences and continuous plantings, contributing to increased biodiversity.

94% Share of U.S. farmland that is non-irrigated.

75% Sediment that is removed by conservation buffers, improving water quality.

95% U.S. soybean farmers who personally scout their fields each season to manage pests.

92% U.S. soybean farmers who have tested their soil to maintain proper nutrient levels.

10% U.S. farmland that is taken out of production to protect sensitive areas.



Captains of Industry Rally Around Soy

Checkoff support fuels innovative soy chemistries and more industrial demand

Lewis and Clark. Stanley and Livingstone. When it comes to making great discoveries, history verifies that two – or more – heads are better than one. The same can be said for new industrial technology that uses U.S. soy.

Over the past 25 years, soy-checkoff-supported partnerships have produced hundreds of new soy-based products and ingredients. These technologies increased industrial demand for U.S. soy from 14 million bushels in 2003 to more than 111 million bushels a decade later.

One very successful partnership created a major market for soybean oil that continues to grow. The checkoff has partnered with the National Biodiesel Board (NBB) since its inception. Among other efforts, this partnership produced studies that demonstrate the performance, economic and sustainability benefits of the fuel. NBB shares this vast amount

of data with influencers and end users to increase biodiesel demand.

Another great example of a product created by a checkoff partnership is soy polyols. Discovered as part of a checkoff-funded partnership with Biobased Technologies in Arkansas and Pittsburg State University in Kansas, soy polyols are being used today by multiple manufacturers as a replacement for petroleum-based ingredients in furniture, carpet, synthetic turf and other products.

“These partnerships keep building and paying dividends on our original checkoff investment,” said Lewis Bainbridge, soy checkoff farmer-leader from South Dakota. “The discovery of soy polyols led us to partner with Ford, which now puts soy foam cushions in every vehicle manufactured in North America. Our Ford partnership also led to the discovery of soy-based rubber being used in Goodyear and Bridgestone tires.”

The checkoff regularly checks in with its partners at Technical Advisory Panel (TAP) meetings, where manufacturers and researchers put their heads together and share information on what’s next in industrial soy use. Past meetings have led to the development of everything from soy-based equipment panels, paint, asphalt extenders, mattresses, textiles, adhesives, lubricants, furniture, printing, packaging and more.

“By doing our homework and partnering with companies that share our commitment to developing sustainable soy-based products, we’re confident that industrial sales of U.S. soy will keep growing. That growth will continue to pay great dividends on our checkoff investment,” Bainbridge said.

To browse hundreds of innovative soy products, and the partnerships that made them possible, check out the 2016 Soy Products Guide at www.SoyNewUses.org.

PEST MANAGEMENT



SUSTAINABILITY SETS US APART. IMPROVEMENT KEEPS US AHEAD.

Customers prefer U.S. soy because it’s sustainably produced.

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See ways to be more sustainable, and find local resources at SustainableSoy.com



SoyWORLD

WISHH Builds Soy Markets in Myanmar

The American Soybean Association's World Initiative for Soy in Human Health (ASA/WISHH) and the North Dakota Soybean Council (NDSC) are making inroads to markets in the Southeast Asian country of Myanmar. The emerging market has a huge interest in U.S. soybeans, said Matt Danuser, a NDSC board member who traveled there. Danuser is also a North Dakota State University agricultural economist.

Danuser witnessed Myanmar's growing demand for soy protein this year when NDSC supported his participation in WISHH's U.S. Department of Agriculture (USDA)-sponsored seminars with food manufacturers, edible oil processors and others. He presented on U.S. soybean production as well as buying soybeans from the Pacific Northwest trade route.



North Dakota Soybean Council Board Member Matt Danuser speaks at WISHH's USDA-supported seminar for the emerging markets food industry in Myanmar. He says the Asian country is looking to U.S. soy protein, and their companies are willing to invest.

"They are looking for a consistent and reliable product that can arrive in a timely fashion. The country is rapidly expanding so their demands can too," Danuser said. "You look at their diets, which are predominantly rice, without a lot of other good sources for protein."

North Dakota State University Agricultural Economist William Wilson describes Myanmar as a fast-growing emerging market. "There is a high degree of interest in soybeans produced in the United States, including questions on markets, shipping and large-scale farming," Wilson said. "There is lots of room for improvements in processing technology, products and as a result on the quality of raw ingredients. As a result, there is great demand for outreach and dialogues with Myanmar

interests and the U.S. industry. Myanmar is rapidly expanding with a huge interest in U.S. soybeans."

USDA supported WISHH conducting market research in Myanmar. Sometimes called Burma, 55 million people live in this country located between China and India. WISHH's research suggests that by partnering with the local industry to improve soy processing and increase awareness of soy and soy-based foods, human consumption of soy-based foods will expand in Myanmar, creating demand for U.S. soybeans.

WISHH is building relationships with the Myanmar Edible Oil Dealer's Association and the Food Science and Technology Association of Myanmar. The effort features WISHH and U.S. Soybean Export Council (USSEC) coordination: WISHH leads on human foods and edible oils while USSEC assisted with the market assessment and focuses on aquaculture and animal feed.

Danuser sees immediate opportunities for food-grade soybeans. WISHH assisted four Red River Valley companies to have their soybeans analyzed for soymilk production in Myanmar. While genetically modified organisms (GMOs) are not an obstacle in Myanmar's market, their companies are currently set up to buy in food-grade quantities rather than bulk high-tonnage commodities.

Myanmar is already using soy in some foods, ranging from soy nuggets, rice-soy blends, soybean curd, soy cookies and crackers as well as soy beverages, especially in Northern Myanmar. Soy milk is increasingly popular in major cities. Myanmar consumers also use large amounts of vegetable oils for frying as well as an ingredient in sauces, soups and curries.

"Myanmar's food companies are willing to invest," Danuser said. "There is a need to facilitate bringing these companies together, and WISHH is doing that with repeated contacts with customers. WISHH is promoting health, and it's a great symbiotic relationship."

Danuser said he believes U.S. soy has a future role for Myanmar's livestock feed sector too. He noted many of Myanmar's companies are transitioning to younger leadership. Many of these young professionals were educated in the United States and are interested in trading U.S. products. ■

Sustainability

Modern Sustainability

By **Dan Lemke**

Nebraska Farmer Sees Technology as Key to Sustainability

If agriculture had a poster model personifying sustainability, they would probably look a lot like Bart Ruth. He and his wife are the sixth generation to live on the original family homestead near Rising City, Neb.

"I'm proud to say the eighth generation lives just five miles down the road on the farm where my mother grew up," Ruth said, "And those grandchildren are frequent cab companions."

Ruth grows about 2,800 acres of soybeans and corn with his oldest son Geoff, who came back from college to join the operation a decade ago.

Ruth is a former American Soybean Association (ASA) director, serving as ASA president for the term mid-2001 to mid-2002. He currently co-chairs the 25 X '25 Alliance, a group calling for America's farms and ranches to produce the biomass, biofuels and other energy needed to meet at least 25 percent of the nation's energy needs by the year 2025, while providing an ample, affordable and safe supply of food, feed and fiber.

To supply energy and food to a growing world population, Ruth knows farmers will need to be productive and sustainable.

"Consumers have been convinced that nostalgic, agrarian agriculture is really what sustainability is about," Ruth said. "I think nothing is further from the truth."

To be sustainable, a farm has to take care of its soil and water resources, but it also must be economically viable.

"We have to utilize the amazing technology we have today. That means comprehensive soil testing, in my view it means no-till production, utilizing precision agriculture to plant, fertilize and control pests, utilizing integrated pest management, and using care to maintain soil health and integrity," he said.



Bart Ruth utilizes no-till production and cover crops to maximize soil health, reduce erosion and contribute to soil organic matter. He says telling the sustainability story is critically important for farmers. *Photo courtesy of Bart Ruth*

Ruth uses those tactics on his own farm.

Professional agronomists assist Ruth with vigorous soil testing and crop scouting. In-field sensing stations monitor soil moisture on about 1,200 irrigated acres. An underground piping system allows slurry from two nearby dairy farms to be used as natural fertilizer. Ruth utilizes no-till production and cover crops to maximize soil health, reduce erosion and contribute to soil organic matter. Combine this with prescription seeding, variable rate nutrient placements and biotechnology, and he's able to get the most out of every acre.

"The goal is to maximize production on productive acres," Ruth added.

Telling the sustainability story is critically important for farmers, Ruth said. Most have been reluctant to tell their stories, so agriculture is often placed in a reactive position. He believes what farmers are doing to feed the world while caring for soil and water resources is phenomenal.

"The philosophy a lot of farmers have is to leave the land better than when they received it," Ruth said. "That's more pronounced for me with the eighth generation coming. I don't want to do anything to degrade the land, I want to improve it." ■

"Consumers have been convinced that nostalgic, agrarian agriculture is really what sustainability is about. I think nothing is further from the truth." – Bart Ruth, Nebraska farmer

SoyForward

Visualizing a Practical Future: Renewable Energy Strategy to Bring Stability, Sustainability

By **A. G. Kawamura**

More than a decade ago, the 25 x '25 Renewable Energy Initiative set out to describe a different strategy for our nation's energy systems. That vision of a collaborative network of renewable energy industries and the natural resources so prevalent in this amazing country of ours was applauded and endorsed by 36 governors and 15 state legislatures. Instead of attempting to ordain a renewable energy favorite, the regional variations that describe our nation's geography, geology and local economies showed that multiple energy systems could thrive throughout the nation and each contribute to a dynamic energy portfolio that if realized, would allow the U.S. to become completely independent of imported energy.

That year, 25 x '25 set a goal of deriving 25 percent of our nation's energy from renewable sources by 2025. The fate of that goal rests in large part on the upcoming presidential election and the stance the new administration takes on renewable energy.

Perhaps the most valuable lesson we've learned in the time since, is how quickly the level of federal involvement can impact the economics behind progress or collapse. Of course there are other factors to be considered, including oil prices and the competitive nature of new emerging technologies replacing older systems. These market place dynamics are after all, why we even can conceive of a multi-dimensional and sustainable strategy of energy sources. It is that larger vision of our energy economy in 2025 and beyond, though, that gives this discussion such commitment from leaders around the country and the world.

Mark Twain once said, "You can't trust your judgment when your imagination is out of focus." This is the essence of why 25 x '25 encourages us to visualize a better and more practical future. The site-specific nature of multiple renewable energy systems allows for wind, solar, mini-hydro, biofuels, waste to energy, ocean thermal and geothermal to establish a different kind of strategic energy and economic grid. The capacity to expand all of these energy technologies and create dependable, interdependent, domestic energy abundance that enhances local economies and environmental goals makes it a commonsense path forward. It is no wonder that our

military has already taken the lead in embracing domestic biofuels that are less vulnerable to global disruption.

In the area of biofuels, maintaining flexibility in our food and fuel capacity is another goal born of smart thinking. We can clearly see that the current global food and fuel supply is not as resilient as we'd like. The changing nature of politics and climate makes it difficult to forecast stability for a planet with 9 billion people by 2050. And yet we can begin to visualize a more stable world where the food and energy dynamic is not fraught with uncertainty, but reinforced with a focus on multi-benefit design and purpose. We must recognize that our positive future will come from embracing the many sustainable energy options available to us, and we hope that the new administration will equally embrace the 25 x '25 vision. ■



A. G. Kawamura

A.G. Kawamura is co-chair of Solutions from the Land and a member of the board of directors of the 25 x '25 Renewable Energy Initiative. Kawamura is formerly the Secretary of the California Department of Food and Agriculture, and operates a produce farm in Orange County, California.

Showcase Conservation On Your Farm



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

Are you using a reduced tillage practice on your farm? Do you grow cover crops? Have you taken steps to reduce soil loss or improve water quality? These are just a few conservation practices used on some farms today that help produce sustainable U.S. soybeans. If you are using one of these practices or others, tell us about your accomplishments and you could win a Conservation Legacy Award.

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- Recognition at the ASA Awards Banquet at Commodity Classic.
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- Potential opportunity for the national winner to join other farmer-leaders on a trip to visit international customers of U.S. soybeans.

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MONSANTO





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- ASA fights for biodiesel tax incentives
- ASA advocates legislation fair to soybean farmers
- ASA promotes trade agreements for soy exports

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