AMERICAN soybean

SUMMER 2013

Vol.1, No.1

People. Policy. Profitability.

A PUBLICATION OF THE AMERICAN SOYBEAN ASSOCIATION

Sustainability

U.S. Soy's Pledge to Global Customers

ASA
American Soybean Association®

If you believe, belong.

AMERICAN soybean

SUMMER 2013

Vol. I, No. 1

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American Soybean is published quarterly by the American Soybean Association, 12125 Woodcrest Executive Drive, Suite 100, St. Louis, MO 63141. Phone: 314.576.1770. Web: www.SoyGrowers.com

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, educational and leadership development efforts are made possible through the voluntary membership in ASA by farmers in states where soybeans are grown.

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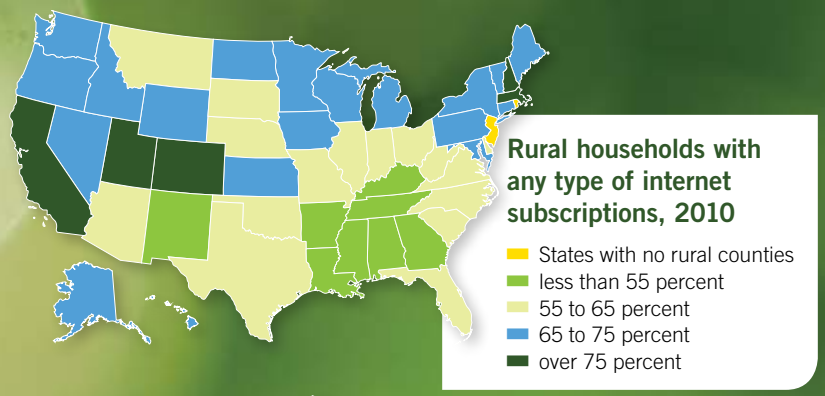
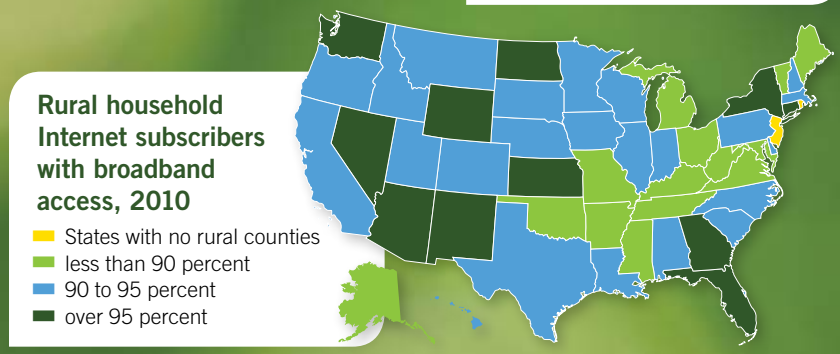
SOYnews

Rural Broadband Access Increasing, but Still Trails Urban Counterparts

According to data released by the U.S. Department of Agriculture in June, access to broadband internet service is increasing, but remains lower in rural and farm households within soybean-growing states than elsewhere in the country. As of 2010, 92 percent of rural households and farms with internet access also have access to higher-speed broadband internet service, however the percentage of rural and farm households with any internet access at all remains comparatively low at 62 percent.





Note: As used here, rural areas are synonomous with nonmetropolitan areas, as defined by the Office of Management and Budget.
Source: USDA, Economic Research Service calculations based on U.S. Census Bureau Current Population Survey data.

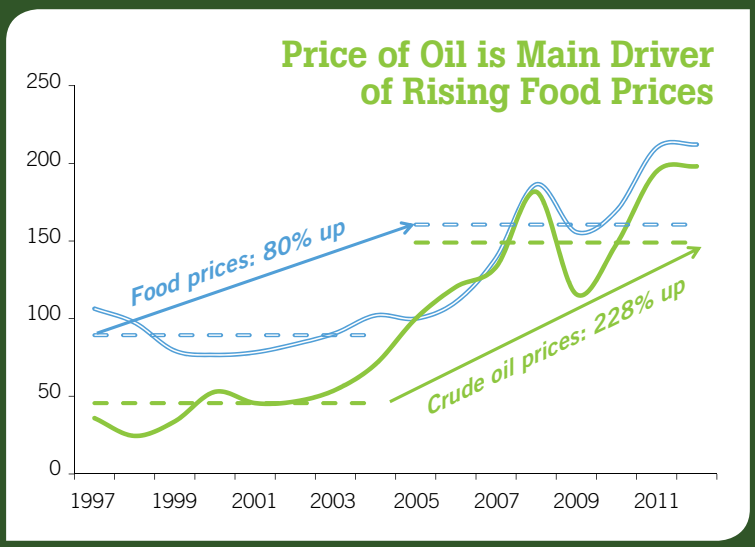
"At the moment Europe is missing out. Less than 0.1 percent of global GM cultivation occurred in the EU. While the rest of the world is ploughing ahead and reaping the benefits of new technologies, Europe risks being left behind. We cannot afford to let that happen."

The Right Honourable Owen Paterson MP, Great Britain's Secretary of State for Environment, Food and Rural Affairs, in a June 20 speech at the Norman Borlaug Institute for Global Food Security in Harpenden, Hertfordshire, England — *Source: DEFRA*

New York Sets Statewide Bioheat Standard

In June, legislators in New York State passed a new standard for all heating oil sold in the state, requiring it to contain at least two percent biodiesel, or B2, known in the industry as Bioheat,® by 2015. New York is the nation's largest heating oil market, and the move will reduce air emissions and create jobs statewide. According to the National Biodiesel Board's Shelby Neal, the standard will replace approximately 30 million gallons of petroleum annually with a cleaner burning, renewable fuel. New York City, the largest municipal consumer of heating oil in the country, has already taken advantage of biodiesel's benefits by instituting a citywide two percent biodiesel requirement in October of 2012. *—Source: NBB*

WORLD BANK:



The rising cost of crude oil is the most significant factor in rising global food prices, according to a joint policy research working paper released in May from the World Bank's Development Prospects Group and the Poverty Reduction and Economic Management Network. The study, conducted by economists John Baffes and Allen Dennis, looked at the factors thought to be responsible for higher food costs—including the use of agricultural commodities like soybeans and corn in the production of biofuels—and found the cost of crude oil to be the most impactful.

SOY BY THE NUMBERS

195–234

The vote count for the Federal Agriculture Reform and Risk Management Act of 2013, otherwise known as the House's version of the farm bill. Following the bill's defeat, ASA called on both Republicans and Democrats to "find a way forward for American agriculture."

6,214

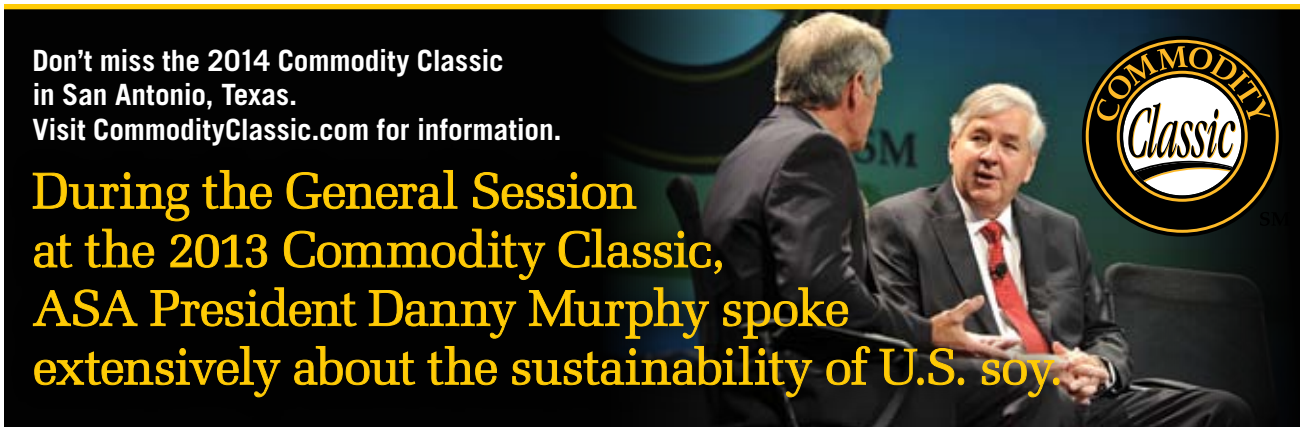
The record number of attendees to the 2013 Commodity Classic in Kissimmee, Fla. The annual event also saw a record number of growers and first-time attendees. The 2014 Commodity Classic will be held Feb. 27 to March 1 in San Antonio, Texas.

8.3 million

The record amount of soybeans, in tons, imported by China in June, according to the China National Grains and Oils Information Center. The volume represents a 63 percent increase in imports over the previous month.

504 million

The amount of biodiesel produced, in gallons, through May 2013. The industry produced 135 million gallons in May alone, and is on pace to once again surpass the Renewable Fuel Standard's volume requirement of 1.23 billion gallons for 2013.



Don't miss the 2014 Commodity Classic in San Antonio, Texas. Visit CommodityClassic.com for information.

During the General Session at the 2013 Commodity Classic, ASA President Danny Murphy spoke extensively about the sustainability of U.S. soy.

On the U.S. Soy Industry's Sustainability Protocol...

"The Protocol is the product of more than a year of hard work and cooperation between ASA, the United Soybean Board and the U.S. Soybean Export Council. It's essentially a commitment to all of our customers that we will supply soy that is sustainably produced.

"The Protocol states that the U.S. soybean family will deliver healthy soy products for human consumption that offer superior amino acid profiles, enhanced feed efficiency and improved overall animal performance.

"What's particularly effective about the Protocol is that it's not simply a buzzword — it's the only certification for soy that provides quantifiable information that can be tracked annually regarding social impacts of soybean production, such as labor hours, farm-related injury rates, air pollutants, smog formation, and toxicity. It's supported by comprehensive auditing and data collection and offers a high level of correspondence with existing sustainability certification schemes.

"The Protocol is based on what we hold to be true about sustainability at its most basic level: solid farm family values. It's about ensuring that our legacy of good stewardship is passed down from generation to generation of American farm families."

On Making His Farming Operation More Sustainable...

"A lot of what makes our industry sustainable is the generational nature of our farms.

"My grandfather bought our home farm in 1944, and shortly after, his neighbors told him much of the place was not worth farming and only fit to hold the world together. My grandfather took that as a challenge, and through careful stewardship, cover crops, and terracing, that original piece of land produces some of the better yields on our farm. Today, my brother and I continue to improve the farm by using reduced-till and no-till practices.

"To me, this should be the definition of sustainability: taking the land we grow up farming with our fathers and grandfathers, doing our best to improve it and leave it better for our kids and theirs. Over 70 years, my family was able to take poor, unproductive land and improve it, and at some point, we'll pass it on to the next generation, who will use it to continue providing the food, fuel and fiber needed by a hungry and growing world."

On the One Thing He Wants Consumers to Understand About Soybean Sustainability...

"We've seen the negative side of the food and farming discussion — of the perceived detrimental impacts of production agriculture, but it's important to note, I think, that it doesn't come from any ill will. I think it simply comes from the fact that many consumers just don't understand that farm families are families just like theirs.

"But we can't sit back and expect the consumer to come to us. We've got to be more proactive in explaining why the very nature of our businesses makes us sustainable." ◘

To me, this should be the definition of sustainability: taking the land we grow up farming with our fathers and grandfathers, doing our best to improve it and leave it better for our kids and theirs. – Danny Murphy

The American Soybean Association is looking out for the best interests of U.S. soybean growers by doing important farm and trade policy work on Capitol Hill:

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

The law says your soybean checkoff can't do these things. But ASA can.

If you believe this work is important to your bottom line, make sure you belong to ASA and your state soybean association. Become a member today at **soygrowers.com**.

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Visit soygrowers.com or contact the American Soybean Association at 800.688.7692

SoyState UPDATE

Status**ILLINOIS**

The Illinois Soybean Association is making it easy for educators and consumers to see the growing process in action. SoyCam – funded by the Illinois soybean checkoff – follows 11 participating Illinois soybean farmers as they document their farming operations and processes throughout the growing season with photographs and commentary. SoyCam can be found online at www.SoyCam.com.

Status**KANSAS**

Kansas Soybean Association President Terry Reschke participated in an April meeting about risk management in Topeka with the U.S. Department of Agriculture's (USDA) Risk Management Agency (RMA) Administrator Brandon Willis, Rebecca Davis, director of USDA-RMA's regional office and representatives of several other state and regional commodity organizations.

Status**KENTUCKY**

Despite their disappointment that growers still didn't have a farm bill, Kentucky soybean farmers forged ahead to plant the crops that feed the world. Planting was a bit behind schedule in some areas of the state, trailing last year's rate and the five-year average rate because of the state's rainy spring. The soybeans that are emerging look quite promising.

Status**MISSOURI**

Missouri's Right to Farm legislation was written as a pro-active measure to protect farmers and ranchers from the activists' radical agendas and defend farmers' freedom to operate. The Humane Society of the United States opposed the Right to Farm legislation late in the process after staying on the sidelines for most of the legislative session. After going through two separate conference committees, the Missouri House and Senate agreed on the final language of Right to Farm, and the measure passed 132 to 25 in the House, and 28 to 6 in the Senate. The amendment will most likely appear on the November 2014 ballot as a constitutional amendment.

Status**NEBRASKA**

Nebraska Soybean Association leaders lobbied on several agricultural issues during the 2013 session, which adjourned in June. Over the term of the 90-day session, some top issues of interest to the state's soybean producers included Senators adopting a two-year state budget, funding for school aid, debating restructuring Nebraska's tax laws and passing a bill to create a task force to set priorities for funding of projects to help manage Nebraska's water resources.

Status**NEW YORK**

The New York Corn and Soybean Growers Association and Empire Farm Days have teamed up to offer a new Corn & Soybean Center at the 2013 Empire Farm Days, Aug. 6–8, at Rodman Lott & Son Farms in Seneca Falls. The Center will feature the latest technologies and innovations for crop producers. At the center, successful New York state corn and soybean growers will share their tips in panel presentations to help growers break yield barriers and produce crops more efficiently and economically.

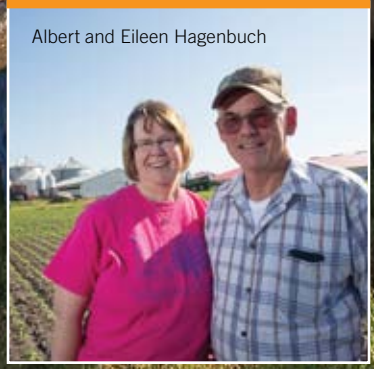
Status**SOUTH CAROLINA**

South Carolina Agriculture Commissioner Hugh Weathers released a statement in June commending and thanking two of the state's U.S. Representatives, Tom Rice and Joe Wilson, for voting for the 2013 Farm Bill in the House. He encouraged South Carolina's other Representatives to focus on the bill's agricultural merits and to maintain a bipartisan nature for creation of a farm bill, and urged all South Carolinians to thank those members of Congress who supported the bill and to encourage the other members to see its importance.

SOY HORIZONS

Four Generations: Tradition & Change

Albert (left) and his son John Hagenbuch on their multi-generational farming operation in Waltham Township, Ill.



Albert and Eileen Hagenbuch

John & Kate Hagenbuch and their children *(from left)* Mae, Isabella and Nolan.

| By **Adam Williams**

Early on a recent Saturday, a clear sky and fresh morning's sun sprawls across Waltham Township, Ill., and the Hagenbuch farm, where four family generations have lived spanning 75 years.

The youngest member of the youngest generation on the farm, 4-year-old Nolan Hagenbuch, is at the side of his father, John, who cleans and lubes the Case IH seed driller he ran until midnight the night before. John's father, Albert, soon joins his son and grandson and, together, the men remove a hog manure pump from outside one of their buildings.

Before the sun rises much further, the rest of the three present generations, which live as a closer-than-close-knit family in two houses that stand only a dirt-clod toss away from each other, also appear: Albert's wife, Eileen; and John's wife, Kate, and their daughters, Isabella, 7, and Mae, 5; plus their black, 9-year-old Labrador Retriever, "Betty."

The farm has been a place of continuing tradition — and change — since Albert's parents, Charles and Ethel, started living and farming there in 1938. Charles grew up in a house across the road from where he'd eventually make his family's home and livelihood. He and Ethel brought up Albert and his brother, Henry, who has been Albert's farming business partner since 1979 and lives a mile west, in the farmhouse now owned by John and Kate.

Though Albert and Henry now own and work 1,100 acres within a five-mile radius of the original family home, it took years of generation-to-generation skill and prosperity to reach that point. When Albert started farming in 1970, his parents had put together 400 acres for corn, oats, a little hay, and some cattle and hogs. Albert and Eileen, a retired schoolteacher who, Albert says with humor, "taught school to support my ag habit," married in 1971. They lived in a trailer across the dirt driveway from his parents' house. When Albert and Eileen were expecting the birth of their second of three children, John, in 1977, they built the house they live in now.

By the late 1970s, when Henry left his engineering career with the Department of the Interior in Klamath Falls, Ore., for the family business in Illinois, Albert and Eileen had added 220 acres. Then the two brothers continued to accrue land. That's something the first two generations could afford to do. For John and Kate, that's a less realistic opportunity.

"If we could afford to own land, we would," John says. "A young, starting farmer can't compete with it anymore."

"I don't know how far the pendulum can swing, though," adds Kate. "Hopefully, one day the prices will come back down."

Diversifying the Family Operation

In the mean time, the 30-somethings are carving niches in which they can contribute to the growth of the family business: hog finishing and manure, and sprayer operation.

Albert and John's families live on 160 acres. Ten acres include the two houses, three hog buildings and a handful of grain bins. The rest of the acreage is tillable, with soybeans surrounding them there this season.

John works full time as a precision farming specialist at Grainco FS, which helps make necessary the midnight fieldwork at home. Kate works three days a week as a speech-language pathologist at Mendota Community Hospital. They also are involved in community and agribusiness associations, such as the Illinois Soybean Association (ISA). All of it is necessary like never before for success, they say.

Though the Hagenbuch tradition stays constant, much about their farming continues to change. Regulations have become significant since the previous two generations established themselves. Consumer lifestyles and habits also are ever-changing. The family changes with the tides.

"Now you have to take a test to be licensed to spray chemicals," Kate says. "You need permits to build livestock buildings. Those can take a year or two to get. The EPA and State of Illinois need to approve plans for putting up hog buildings."

Kate sought the help of Mike Levin, the director of issues management at ISA, for guidance in the process. She is diligent in learning about operating a farm in today's more stringently regulated environment.

"I went and completed a certified livestock management training course to learn how to make that Comprehensive Manure Management Plan," she says. "It's about a two-inch-thick binder we put together for that, for each of our two locations."

It's a part of the stark contrast to what previous Hagenbuchs had to do.

"It used to be you could drive around and see hogs out in the fields, in the 1950s," Albert says. "As you moved into the 1970s, everything went to confinement and eliminated having livestock in the fields."

That change meant no more spring fence mending, and ground saved for grass could be planted and profitable. Charles decided to transition to confinement earlier than many, and could do it easily. "When Albert's dad wanted to put up a building for hogs (in 1954), he just did it," says Eileen.

"He could do whatever he thought would make money," adds Albert. So could Albert and Eileen, and Henry and his wife, Wendy.

Albert and Henry kept around 700 to 800 head of hogs until the mid 1980s. They depopulated their stock, and focused on growing corn and soybeans. When John graduated in 1999 with an associate's degree in swine management from Joliet (Ill.) Junior College, he revived Hagenbuch hog farming.

"I started with 100 sows. I'd sell 900 to 1,500 head per year, farrow-to-finish," John says. "I wanted to grow the hog operation, but would have had to get really big to compete and make a living at it farrow-to-finish."

So he and Kate, who married in 2002, contract finish 24,000 hogs a year now, getting them at 50 pounds and feeding them to 260 pounds. They have space for 10,000 hogs at a time.

"When we owned sows, we only could spread manure on about 40 acres," John says. "Now, we spread 1,000 acres a year." That includes 500 of Albert and Henry's.

Involved and Online

Creating opportunities like that is the ingenuity that will keep generations of Hagenbuchs in the farming life. Energetic participation in agribusiness organizations — and the Internet — also helps.

Kate is involved in Illinois Farm Families (IFF), an organization that unifies outreach efforts of farming groups, including the ISA, Illinois Farm Bureau and Illinois Pork Producers, another group Kate is active with. Through IFF, Kate helps communicate with Chicago-area moms about farming. She blogs for the IFF, and has participated in farm visits with the "Field Moms." Those events are central to the program, in which the Field Moms visit families at hosting farms, and learn about where their food comes from and how it's produced.

"As the American population has shifted away from farming communities, it has become essential to communicate with consumers in ways like this," Kate says.

For Albert and Henry, let alone their father's generation, such efforts weren't possible, but they also weren't necessary. "The Internet probably is a helpful thing," he says, "because there aren't very many people that are connected to farms any more."

That even goes for those that represent farming interests. That's a need John and Kate have recognized, and they've heartily embraced the responsibility. When government representatives are in their area for events, the Hagenbuchs attend and look for the opportunity to introduce themselves to the leaders and make their 30-second "elevator pitch" about what matters to farmers.

Though John and Kate, graduates of the American Soybean Association/DuPont Young Leader program, don't always wait for a scheduled event. They held an open house in 2011, inviting political representatives to visit their farm and learn about what they do. Even when a congressman isn't handy for a face-to-face, the Hagenbuchs reach out.

"The Illinois Soybean Association makes it easy to get in touch with congressional leaders online," Kate says.

"Contacts are easy to find through their Voice for Soy (an online advocacy tool centered on legislative action)," says John.

"Computer-wise, communication has become easier," Eileen says.

"If you want to be heard, you have to make the effort," says Albert, "because people don't have that farm connection."

"That means we have to educate them," adds Eileen.

The Hagenbuchs have a website for their farm as part of their 21st century farm education efforts: www.hagenbuchfamilyfarms.com.

On the Horizon

Charles died in 2004. Ethel passed in 2002. But they had laid the foundation for present and future farming Hagenbuchs. Every so many years, a new, passionate generation comes along, echoing the one before it.

"I always knew John wanted to farm, since kindergarten," Eileen says. "He always wanted to be outside, to be on the tractor with his dad."

Now, the family sees how John's young son, Nolan, is the same. Kate describes Nolan's fits of impatience with riding in a grocery cart as she pushes him through a store, yet the same boy shows an unimaginable calm when riding in the field for 12-hour stints with his father in a tractor or sprayer. He isn't the only of the youngest generation to adore life on the farm, though.

On a walk into the soybean field that surrounds the family homes, John and Kate's girls tell what they love about their lives. For both, it's being outside. For Isabella, it's especially the work. For Mae, the play.

For the parents and grandparents, it's something deeper. "It's nice to see what you've worked very hard to build be carried on," Eileen says.

"You know you're leaving something for them, that they'll always have something good to do," says John.

"By being here, with their great-grandparents having been here, and by living by grandma and grandpa, I hope our kids will get a sense of the heritage, the legacy," Kate says. "I hope they will see it's not just a job. It's our lifestyle." ◘

Mae, Isabella and Nolan adore life on the farm as the youngest of the four Hagenbuch generations to reside there.

ASA in Action

ASA American Soybean Association®
If you believe, belong.

ASA President Danny Murphy, Board member Dean Campbell and CEO Steve Censky, along with USB Secretary Lewis Bainbridge, hosted a team of officials from the China Soybean Industry Association (CSIA), a China government-created association of soy-related industries and academic institutions. USSEC Regional Director-North Asia Paul Burke, China Country Director Xiaoping Zhang, Technical Issues Director Kim Nill, and intern Elizabeth McLeod also participated.

Presentations to the CSIA team and subsequent discussion covered the ASA/USB/USSEC organizations and how they interact with the U.S. Department of Agriculture and each other; USSEC's international marketing programs; and USB's Domestic Marketing/New Uses/Production programs.

Following the meeting, plans were made for a group of ASA and USB grower representatives to pay a return visit to CSIA in China later this year.

ASA photo by Cassandra Langley

CSIA representatives along with U.S. grower-leaders and staff of ASA, USB and USSEC outside ASA headquarters.

ASA photo by Steve Dolan

ASA farmer-leaders visited with U.S. Secretary of Agriculture Tom Vilsack in the ASA booth at Commodity Classic in Kissimmee, Fla., this spring.

ASA photo by Patrick Delaney

In a week that saw a Supreme Court decision in *Bowman v. Monsanto*, the announcement of additional studies on biotech crop varieties from USDA, and the markups of farm bills in the House and Senate Agriculture Committees, ASA President Danny Murphy and Executive Committee member Richard Wilkins joined members of the National Association of Farm Broadcasting (NAFB) at the organization's Washington Watch in the nation's capital.

During the event, Murphy and Wilkins spoke with more than 20 broadcasters about current industry priorities and ongoing farm bill discussions.

Alongside the United Soybean Board, ASA sponsored both the Issues Forum reception and the Monday evening dinner, which featured a discussion led by Jason Clay, Market Transformation Senior Vice President at the World Wildlife Fund, on the challenge of providing for the needs of 9 billion people on the planet by 2050.

ASA will join NAFB again in November for the association's annual Trade Talk event in Kansas City, Mo.

DuPont YOUNG LEADER PROGRAM American Soybean Association

The 2014 Young Leader Program is designed to awaken the leader in each participant, strengthening and building upon natural tools to the betterment of soybean growers domestically and internationally.

Through in-depth and hands-on training, Young Leaders will:

- Strengthen their leadership and communications skills
- Build relationships with other growers from across the country and Canada
- Expand their agricultural knowledge

Graduates of the ASA/DuPont Young Leader Program frequently assume leadership positions in soybean industry organizations while applying the training principles to achieve greater success in their business and other volunteer endeavors.

Who are the Young Leaders?

A Young Leader is a soybean grower 21 years or older who is interested in developing their leadership skills. Spouses who attend are active participants in the program.

For More Information and to Apply

www.soygrowers.com/DYL

Application deadline: October 1, 2013

The two-phase training program is as follows:

Phase I: November 19 - 22, 2013
DuPont Pioneer Headquarters
Johnston, Iowa

Phase II: February 25 - March 1, 2014
San Antonio, Texas
(held in conjunction with the Commodity Classic)

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DUPONT PIONEER.

Industry PERSPECTIVE

One of ADM's mobile treatment units turns corn stover into valuable feed.

How does your company help farmers be more sustainable?

Providing an innovative method to harvest more feed from fewer resources is just one way leading agribusinesses are helping farmers and ranchers reduce their environmental footprint.

ADM, Syngenta and BASF recently shared how they are assisting their farmer-customers in answering the call for greater environmental sustainability.

By **Candace Krebs**

Feeding more livestock using fewer resources is the aim of ADM's Second Crop stover treatment process.

As global concern rises over how to meet soaring corn and soybean demand, **Archer Daniels Midland Company (ADM)** is offering a new feed treatment process called Second Crop, which transforms crop waste into a replacement for corn in cattle feed, says Jackie Anderson, ADM's manager of global media relations.

"ADM's Second Crop process treats stover with hydrated lime, creating a second harvest from existing acres. The process can also be used on wheat straw and other fibrous feedstocks. Within a week after the treatment, the stover can be used in cattle feed, replacing up to 20 percent of the corn in the cattle's diet and offering a cost-effective alternative for ranchers facing high corn prices," Anderson says.

"Adding protein sources, such as wet or dry distillers grains or soybean meal to the treated stover, allows replacement of up to 70 percent of the corn, depending on the rest of the feed ration," she continues.

The process is done in a mobile treatment unit operated by a trained ADM technician. Over several days, the lime breaks down the fiber and makes the carbohydrates available as a cost-effective — and environmentally friendly — feed. ◘

Jennifer Shaw
Head of sustainable sourcing for Syngenta.

At **Syngenta**, the need to measure environmental factors, set benchmarks and account for improvements is a top priority. More than 10 years ago, the company began offering a recordkeeping program that helps growers track and document key environmental use factors.

Called AgriEdge Excelsior, the program is designed to help participating growers boost their profitability by uncovering the right mix of products and production practices for their specific farm, according to Jennifer Shaw, Syngenta's head of sustainable sourcing.

The program also forms the basis for several Syngenta pilot projects being conducted in collaboration with "Field to Market: The Alliance for Sustainable Agriculture," an initiative of food, agriculture and conservation interests seeking to more clearly define sustainability. Measurements of land use, water, soil and greenhouse gas emissions are collected and used to establish a baseline, so that growers can chart the benefits gained from changes they make to tillage, irrigation, harvesting and crop input practices.

The program is not only good for the land, but also makes good business sense for participating growers, Shaw says. Quantifiable improvements in resource use can provide a "differentiator" when marketing crops to companies that are under pressure from the public to minimize their environmental impact, while helping the entire industry polish its credentials. ◘

Nick Fassler
Special projects lead for BASF.

Measuring and sharing sustainability efforts is also the emphasis at **BASF**, another member of the "Field to Market" consortium. Nick Fassler, special projects lead charged with overseeing ag sustainability, says in addition to promoting use of the consortium's field calculator, the company is also piloting an in-depth computer-modeling program called AgBalance.

"It's a very holistic tool that looks at more than 60 different indicators," he says, including economic measures such as impact on the local community and social criteria, such as worker health and safety.

"As a company, we have been assessing ourselves for decades and that's where these tools come out of," Fassler says.

BASF's core crop protection business allows growers to optimize production from every acre while pioneering continual improvements in such areas as sustainable packaging. The company also works to convey the environmental benefits to the public.

In Canada, BASF created a series of online videos that started out by asking an urban consumer what one key question they had about agriculture and then taking that consumer to a farm in Western Canada to learn the answer.

"Growers have a lot of technology and tools at hand to improve their farming practices," Fassler says. "The public needs to understand what they do and why they do it." ◘

Soy SHOTS

From Lake Benton, Minn., farmer and ASA Vice President Bob Worth: Planting soybeans in Minnesota.

Submit Your Soy Shots at:

membership@soy.org

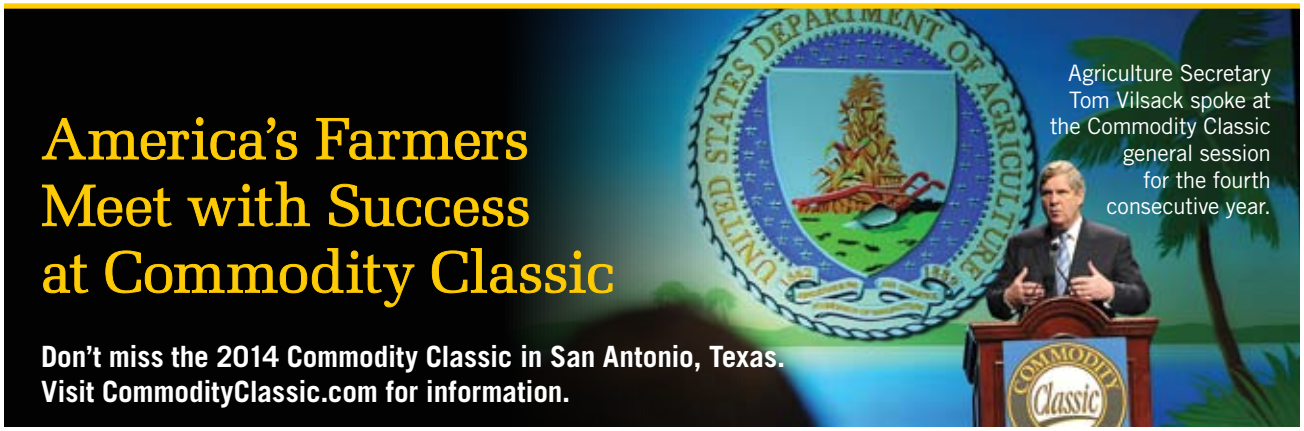
No-till soybean field in Canton, Miss., on the farm of ASA President Danny Murphy.

From Twitter user @Indyfarmer in Cicero, Ind.: Beans going in the ground.

From Twitter user @MIZZOUinNE on April 25 in Osceola, Neb.: Canopy EX + 2-4,D fall applied burn down for beans still staying spotless of weeds so far.

Wendte family farming operation in Altamont, Ill.

From Twitter user @Cornfrmr in south central Nebraska: Changing seed plates from corn to beans.



This past spring, farmers numbering in the thousands came to Commodity Classic in Kissimmee, Fla., to see the latest technology and equipment and find information to address challenges and opportunities on their operations — and they weren't disappointed.

Farmers who attend Commodity Classic find it important to stay in touch with new technology and production techniques, and stay informed on federal policy related to agriculture. They get a good dose of both at the nation's largest farmer-led, farmer-focused convention and trade show.

In addition to the more than 1,000 booths on the trade show floor, the consistently high-quality Learning Center and What's New sessions captivated a progressive group of farmers from around the country.

Soybean growers charted the American Soybean Association's policy course for 2013 at the ASA Voting Delegates Session — the culmination of a grassroots policy development effort that starts with individual producers.

Commodity Classic is presented annually by ASA, the National Corn Growers Association, National Association of Wheat Growers and National Sorghum Producers. The event offers a wide range of learning and networking opportunities for growers in the areas of production, policy, marketing, management and stewardship — as well as showcasing the latest in equipment, technology and innovation. ◘

"Earthworms are the canary in the coal mine when it comes to soil health," said Gail Fuller, who grows soybeans as one of a dozen cash crops at his Emporia, Kan., farm. "A lack of earthworms indicates deteriorating soil health. When they come back, it's an indication that things are improving."

Gail Fuller
Emporia, Kan.

SUSTAINABILITY, IT BEGINS WITH THE

We need to use what we know about soil to create better soil.

Gail Fuller and other soybean farmers across America are discovering that improved soil health is a critical factor in reaching yield objectives, ensuring the long-term viability of their operations and the long-term productivity of their land. Some might call that "sustainability," but Gail Fuller thinks that doesn't go far enough.

"To me, the word 'sustainable' implies that we're satisfied with the status quo," Fuller said. "I don't think that's good enough. We need to rebuild our soils, not simply maintain what we have today after decades of deterioration and loss."

H. Grant Troop lives in Oxford, Pa., and farms just less than 100 acres in Perryville, Md. "This is not simply about nutrients, but the overall biology of the soil," he said. "We need to increase organic matter and increase the microbial populations in the soil exponentially. We need to use what we know about soil to create better soil."

Increasing organic matter in the soil increases the level of nutrients and microbes. "Once you get back to more native organic matter levels, you have a huge reservoir of nutrients," Troop added.

"A high organic level means a lot of carbon, but it's living in the form of microbes and microorganisms," Troop said. "Look at the fence rows around fields. The vegetation in them is green and lush with no nitrogen deficiency. That's because those areas haven't been tilled and the carbon has not been oxidized away."

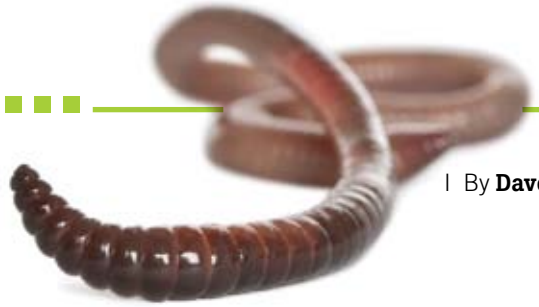
While they are alive, the microbes take up nutrients and capture them, keeping them in place in the soil profile. When those microbes die, they release nutrients that are highly available to the plant, creating a more sustainable system to feed the crop.

The first action Troop pursues when a new tract of land is acquired is to request a conservation plan from the local Soil Conservation District/Natural Resources Conservation District. "My goal is to produce the highest economic crop yield levels that each parcel is capable of producing," said Troop. "Then I try to manage the soil and water resources with the highest level of stewardship. For me, these two goals are inseparable." Troop won a regional Conservation Legacy Award from the American Soybean Association (ASA) in 2010.

Before he began managing for soil health, Gail Fuller said he could turn several spades of soil and not find a single earthworm. Now it's a bad day if he doesn't find several in every spadeful. "We patted ourselves on the back when we finally were able to see worms every time we dug. We knew we were doing something right — but we also knew we needed to keep doing more," he said.

Troop agrees. "Your garden-variety earthworm is good to see. But we know we're really doing well when the large night crawlers start showing up," Troop said. "They clean the surface of residue and take it down to their deep burrows to feed upon the moist soil. Sometimes they are surprisingly aggressive in cleaning up—almost too much so."

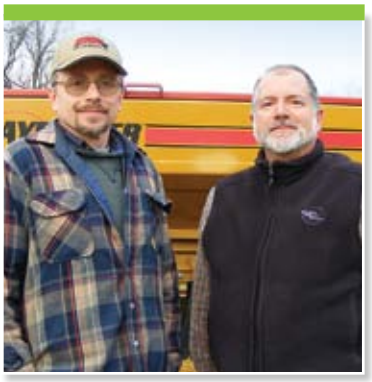
EARTHWORMS...



| By **Dave Buchholz**

Cover Crops are Key

Adopting no-till practices is typically the first step in addressing issues related to soil health. Gail Fuller was concerned about erosion and the loss of topsoil on his Kansas farm, so he switched to no-till in 1995, thinking that was the answer. But the erosion problem did not improve. "There simply wasn't enough residue," he said. "Continuous cover is the key."



H. Grant Troop (right) and business partner Ken Scott.

Cover crops are used to keep soil, nutrients and moisture in place after harvest. These plants also add to the nutrient profile and serve to increase microbial activity in the soil.

Selecting and managing cover crops requires patience and observation. It's been a sharp learning curve for Fuller. He started with two- to three-way mixes of cover crops and is now using mixes with 15 to 20 species. He says this diversity is important in managing pests and disease. "Monoculture has contributed to the problem with cover crops, too," he said. "We need to restore diversity in the cover crop rotation and keep Mother Nature guessing."

Fuller, who was the national Conservation Legacy Award winner this year, uses a five-year rotation using a wide range of cover crops including grasses such as sudan, millet and triticale; broadleaf plants such as alfalfa, clover and sunflowers; and brassicas such as turnips, radishes and kale. "One cover crop isn't going to do it," he said. "Only diverse, nature-based systems are going to be resilient."

But a farmer's choices in this regard depend on the location. "Mixed species work great if you have the environment and climate, but we have a late harvest," said Troop. "We're really stuck with winter grains such as winter rye, barley and wheat for a cover crop."

"We let the cover crop grow to about 30 inches and then terminate it at the optimum level of forage quantity and quality," Troop said. "If it gets too late, the straw becomes lignified and won't break down as quickly. But it has to be lignified enough that it lodges and lays on the soil as mulch and protects moisture over the long term."

The cover crops also create a nursery for beneficial insects such as firefly nymphs, daddy longlegs, ground beetles and large voracious spiders. "These beneficial insects in conjunction with seed treatments keep the pests in check," Troop said. "We use no broadcast insecticide and haven't for years."

Fuller has taken it one step further. "We're now able to do biological testing on soil samples to determine microbe populations," he said. "At this point, our predator and prey counts are such that we no longer need to use seed treatments."

We need to restore diversity in the cover crop rotation and keep Mother Nature guessing.

Nutrient Management

Making soils healthier improves the nutrient load available to crops, but in the meantime, there is still the need to add nutrients through a sound fertility program and manage those nutrients responsibly.

Cullen Bryant farms in Dillon, S.C., growing soybeans, cotton, corn and peanuts — employing no-till or strip-till on all his acres.

Bryant uses a neighbor's chicken litter as part of his fertilizer program, especially in areas where phosphorus and potash are low. "We use commercial fertilizers as well, but we're trying to be as cost-efficient as possible." Bryant bases his fertility program on annual soil tests to "keep everything in balance."

Soil characteristics pose specific challenges for Bryant. "We develop hardpans here in the coastal plains through natural compaction," he said. "We need to use a no-till subsoiler that knifes 14 to 16 inches into the ground with minimum impact on the surface. That allows water to percolate and the root system to penetrate — while keeping residue in place for cover."

Bryant is also adopting cover crops in his operation. "We suffer from a lack of deep organic matter, so we're moving toward more cover crops," he said.

This spring, Troop used processed bio-solids — cooked to kill any possible pathogens and then granulated for dry application — on his Maryland land. "Getting a high level of organic matter was the driver, even though it required us to change our nutrient management plan," he said.

"It can be scary to take this step since farmers get used to applying nitrogen at certain levels," Troop said. "Last year, we reduced nitrogen on corn after soybeans by 100 units per acre. That requires some close monitoring but the financial and environmental impacts are well worth it."

Cullen Bryant of South Carolina uses a neighbor's chicken litter as part of his fertilizer program.

Fuller has an aggressive goal of reaching a 90 percent reduction in all inputs by 2015. He's already reached as much as a 60 percent reduction in fertilizer inputs. "How are we going to produce fertilizer when we run out of crude oil, rich topsoil or phosphorus? We're almost out of all three of these resources and I believe we'll run out of at least one in my lifetime," Fuller said. "We need to aggressively create our own nutrients and regenerate our topsoil."

(continued page 24)

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The Important Role of Livestock

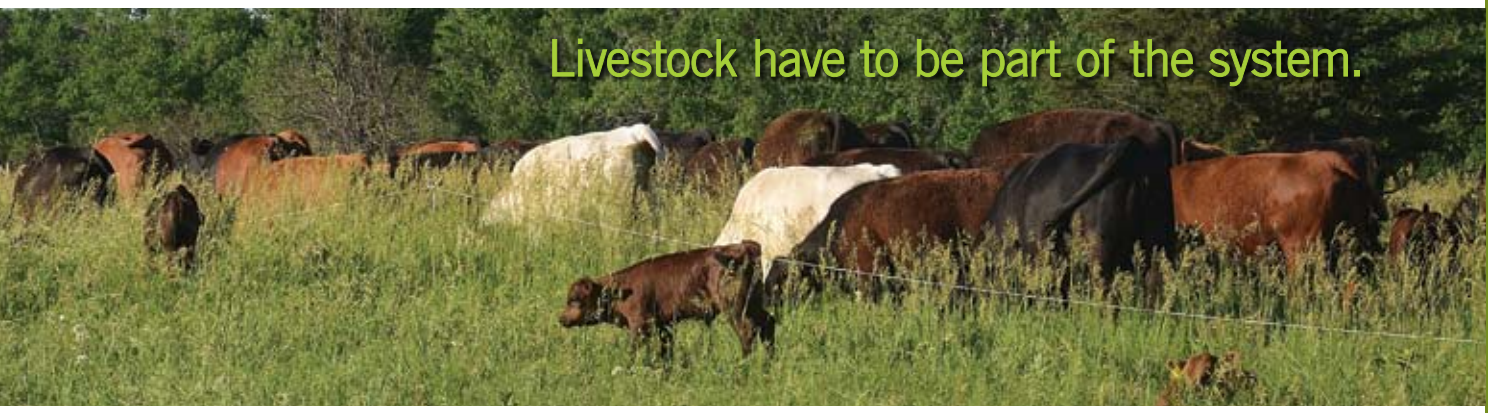
In Fuller's estimation, one of the biggest mistakes crop farmers made was kicking livestock off the land. "The buffalo roamed the land during a time when the complex tall grass prairies were thriving with no inputs. Livestock have to be part of the system," he said.

Fuller originally introduced livestock on his fields because the cover crops provided cheap feed and the manure provided cheap fertilizer. But he quickly saw the benefits of allowing cattle to forage among the diverse cover crops he provides.

Proper management is important in order to avoid soil compaction and to avoid the nutrient build up that typically occurs around shade and water where cattle can congregate. "Compaction is caused by time, not pounds. That's why moving the herd is key. We only have the cattle in one area for a few hours at a time," he said.

Moving the herd frequently also prevents overgrazing. The trampled biomass acts as a cushion to prevent compaction—and the manure and urine are spread evenly over time. Fuller said that research indicates that the manner in which cattle bite and pull on plants stimulates the microbial root community around the plant.

And again, here come the earthworms. "Earthworms follow the livestock. You'll find 20 to 30 of them per spade under a cow pie," he added. Those worms, along with other insects, make quick work of the manure to further enrich the soil biology. "We'll put 60 head of cattle on a sixth-acre per day and you could walk across that area the next day wearing your church shoes."



Soil Health and Water

Water is the most limiting factor on yield. Improving soil health increases the water holding capacity of the soil and keeps precious moisture available to the crops. At the same time, keeping water in the field keeps nutrients there as well.

A long-time no-till practitioner, Troop says conserving moisture is paramount. "We're drylanders in the humid east, so we need to make crop out of every drop of moisture," he said. While moisture conservation is important, so is the potential effect of his management on one of the nation's most sensitive ecosystems.

"The nutrients leaving my farm have some of the greatest impact on the entire Chesapeake Bay watershed, going directly into the Lower Susquehanna River," Troop said. He uses a system of field borders and buffer strips from 35 to 50 feet in depth. Planted with native grasses, these areas provide superb filtration preventing nutrients from creeping into waterways.

Troop actually manages field borders and buffer strips by mowing one pass on each side of the area, creating travel lanes for deer and making local hunters happy in the process.

"You'd better be worried about water if you want to be a good neighbor," said Fuller. "In our case, the cover crops keep the nutrients in place."

Bryant's variable nutrient application practices also reduce leaching and nutrient runoff. He conducts soil tests every year to determine nutrient levels, pH and electroconductivity (EC) of the soil. He uses this information to develop variable rate nutrient prescriptions matched to the soil profiles throughout his land. "We saw a tremendous reduction in nutrient application rates — especially at first," he said. "We're applying only what the soil needs and only where it needs it."

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Sustainability Protocol Aims to Avoid Patchwork of Standards | By **Michael Howie**

Jim Miller
Belden, Neb.

From Brussels to Guangzhou, global soybean and soy product buyers are asking questions about sustainability. Specifically, they are asking if U.S. soybeans are grown in a sustainable manner – and then wanting such claims backed by sound data.

"While we recognize the sustainable way U.S. farmers grow soybeans today, there are numerous groups with their own ideas of what sustainability means who want to set their own standards," said Jim Miller, a farmer from Belden, Neb. and an ASA Board member. He also sits on the board of the U.S. Soybean Export Council (USSEC).

"We have a lot of standards to meet already, from conservation and water quality requirements to farm bill programs," Miller said. "Those initiatives help ensure we are operating in a sustainable fashion, and data and audits back up the claims that U.S. soybean farmers have adopted a number of practices that promote sustainability." As such, he said, American farmers would prefer one standard across the industry that says, "This is why we're sustainable." The answer is the U.S. Soybean Sustainability Assurance Protocol.

The Soybean Sustainability Assurance Protocol

The Protocol explains how U.S. soybean production is based on a national system of sustainability and conservation laws and regulations combined with careful implementation of best production practices by the country's nearly 280,000 soybean farmers. It pulls together data that is audited by third parties and explains that auditing process. Finally, the Protocol describes the existing regulations, processes and management practices that ensure sustainable soybean production, laying out the information in four detailed directives:

1. Biodiversity and High Carbon Stock Production Control Measures and Regulations
2. Production Practices Control Measures and Regulations
3. Public and Labor Health and Welfare Control Measures and Regulations
4. Continuous Improvement of Production Practices and Environmental Protection Control Measures and Regulations

Recognizing the importance of sustainability in a global marketplace – and the need to promote a common set of standards – ASA, the United Soybean Board and USSEC worked together to develop the Protocol, which was released in March. It's available for download at www.ussec.org.

If farmers meet the regulatory burdens to which they are already exposed, then according to the Protocol, soybeans produced on the farm should be considered produced in a sustainable manner.

"When we look at whole beans, meal and oil, we exported about 59 percent of all soybeans grown in the United States last year, which translates to some $24 billion in product," Miller said. "Exports are important, and more customers are asking about sustainability. Thanks to the Protocol, we have answers to the sustainability question and can hopefully avoid a patchwork of other standards."

Miller recognizes that it may take time to receive acceptance globally, but is hopeful.

"Early responses to the Protocol have been positive, but it will take time, as it's not something to look at once and accept," he said. "We have to continue meeting with government officials, purchasers and end users, helping them get to know U.S. farmers and listen to our sustainability story."

Farmers Key to Promoting Sustainability to Others | By **Michael Howie**

Richard Wilkins
Greenwood, Del.

"The issue of sustainability is a hot button topic in the food marketplace today," according to Richard Wilkins, a farmer from Greenwood, Del., who grows everything from soybeans to barley to vegetables, while also raising beef cattle on the Delmarva Peninsula. The peninsula is surrounded by the Delaware Bay, Atlantic Ocean and Chesapeake Bay – and is a quick drive from Washington, D.C. – making it some of the most environmentally scrutinized farmland in the country.

"From my perspective, sustainability is driven mostly by food marketing and the food industry because they want to show they have a corporate culture of caring about their customers, so they want to say food products they retail are being produced in a sustainable manner," said Wilkins, who is a member of the American Soybean Association's (ASA) Executive Committee.

> "Self-assessment will help us demonstrate we can and do meet sustainability standards...the more data, the better our story."

Sustainability also surrounds renewable fuels, particularly in Europe. There, the Renewable Energy Directive mandates the feedstock for renewable fuel, like soybean oil for soy biodiesel, must come from a certified sustainable farm.

From his perspective as a multi-generational family farming operation, sustainability means leaving the land that is entrusted to his family in better condition ecologically and environmentally than when they started using it while at the same time being able to sustain raising a family and making a living off that resource.

"It's near and dear to our heart, and many farmers get offended when someone says we're not sustainable," he said. Yet his story doesn't always capture the ear of those who prefer every farmer go through a certification process or audit, something that would be incredibly challenging and costly considering the breadth of soybean farming in the U.S. and the current grain handling system that commingles loads throughout the production channel.

The U.S. Soybean Sustainability Assurance Protocol, however, provides the opportunity for Wilkins and others to talk about the U.S. soybean industry in the aggregate – as one collective group. The Protocol was developed through the cooperation of ASA, the United Soybean Board and the U.S. Soybean Export Council.

The Protocol allows farmers, soybean organizations and affiliated industry partners to share the good sustainability story about U.S. soybean production – all backed by sound facts. (See story, p. 25.)

Some of those facts and key data points come from research supported by soybean farmers and included in **Field to Market**, a diverse initiative that brings together farmers, agribusinesses, food companies and conservation organizations. The initiative includes an opportunity for farmers to take a self-assessment, at fieldtomarket.org. Wilkins encouraged fellow farmers to complete the assessment.

"If we can get enough of our members to do this self-assessment, it will help us demonstrate to customers that in aggregate we can and do meet sustainability standards," he said. "The more data, the better our story."

In the meantime ASA, will continue working with food companies who have an interest in sustainability standards, encouraging them to adopt the Protocol as certifying requirements.

Wilkins, who earlier this year presented at a BASF sustainability symposium in Germany, said farmers taking steps to promote the Protocol and demonstrating their sustainability is also important because it gives ASA opportunities to promote their story to a bigger audience – and "demonstrate to customers that we are genuinely concerned that we produce food in a sustainable manner."

(continued from page 24)

A Systems Approach to Managing Resources

As one would expect, soybean farmers who are this focused on soil health and nutrient management also employ other stewardship practices on their farms.

Recognized with a regional Conservation Legacy Award in 2012, Bryant's commitment to the environment extends well beyond the soils in his fields. He recycles engine oil and uses it to heat his shop in the winter. He plants buffer strips. He uses anti-drift nozzles on sprayers and GPS-controlled spray booms and variable rate planting to improve accuracy and avoid overlaps. He is also a strong advocate of soy biodiesel, using it in equipment that, in some cases, is up to 40 years old — with no performance problems.

Bryant also has several wildlife plots on his land and even hosts an annual hunting event focused on young people. "They learn how to hunt safely, but this is also an opportunity for them to experience the outdoors and develop a respect for the land."

Respect for the land is also on Troop's mind. "I worry if the next farmer on this land will want to farm it in the same way," he said. "With these steep hills on the headwaters of the bay, reverting to tillage or changing contours could undo a lot of what's been done."

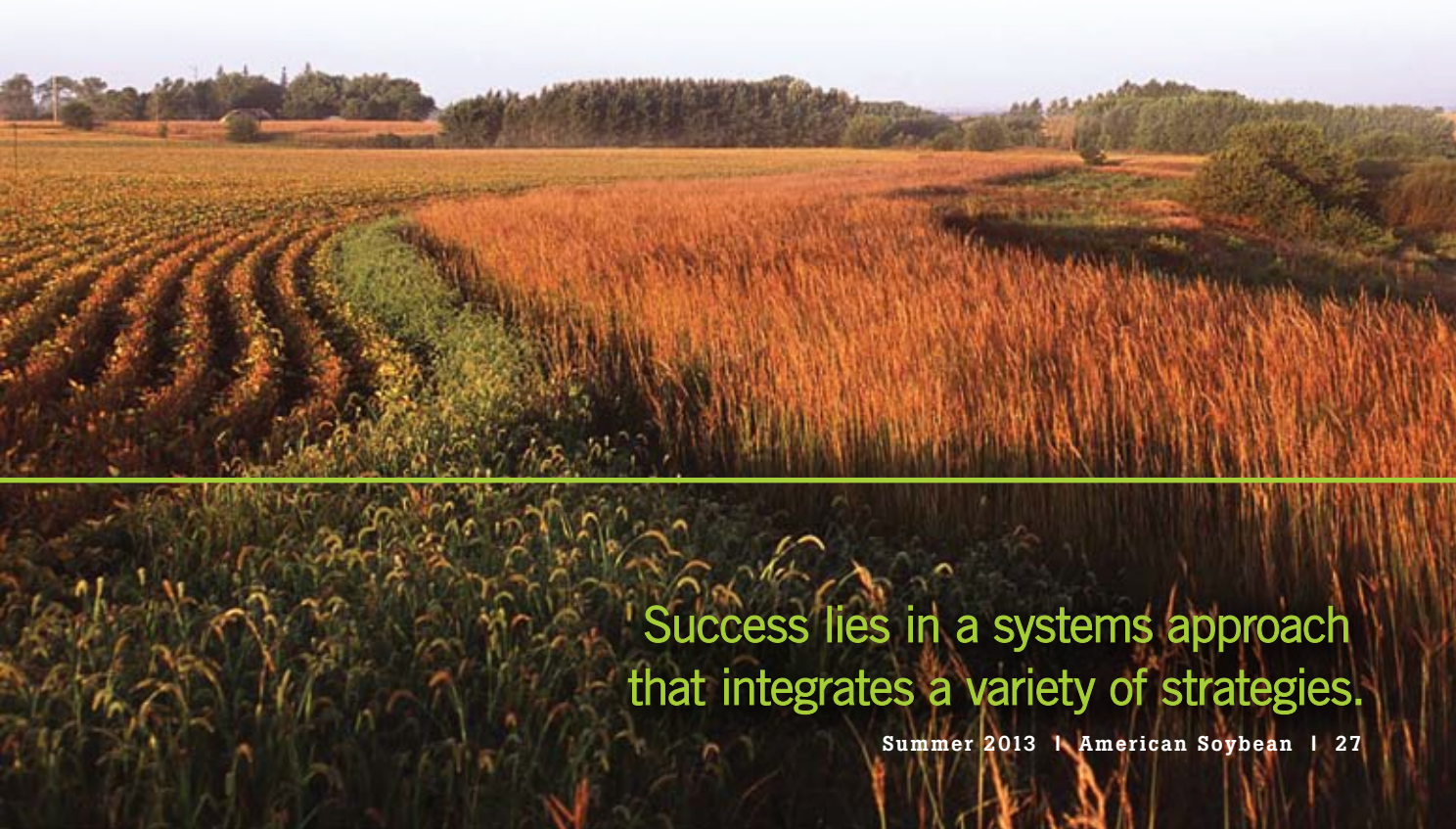
Troop defines sustainability as farming in a way that enables that parcel of land to be productive into the indefinite future — and that soil loss cannot exceed the rate of soil formation. "Lose your primary resource, and you're not sustainable no matter what else you do," he said.

Bryant said that farming operations have to be sustainable from a financial standpoint as well. "I don't care how good you are at production or maintaining the environment, if you don't have funds to operate, you can't accomplish a great deal," he said. "As farmers, we need to stay on top of our game in terms of efficiency and stay environmentally responsible at the same time."

"It's intensive management now because we're early in the process," said Fuller. "It takes a lot of homework, a lot of time thinking, scouting and preparing. But the results are evident. For years, we've been overthinking all of this. We need to let Mother Nature handle it."

Just as there is no one ecosystem or soil type, there is no one answer or one management practice that works for all farmers. But one thing is certain: Success lies in a systems approach that integrates a variety of strategies.

"In effect, all of these strategies — crop rotation, cover crops, soil health and livestock — become your crop insurance," said Fuller. "Now *that's* freedom to farm." ◘



Success lies in a systems approach that integrates a variety of strategies.

Sustainability Discussions Help Build Relationships in EU

Though years of research has illustrated that U.S. soy is a sustainably-produced crop, some potential customers still need convincing. And the soy checkoff works hard to illustrate U.S. soybean farmers' sustainable practices through international dialogues.

In a recent effort to promote U.S. soy's sustainability performance, Sharon Covert, a checkoff farmer-leader from Tiskilwa, Ill., spoke with representatives from the food industry in the United Kingdom, Belgium and the Netherlands.

"We had really positive meetings," says Covert. "The representatives I spoke with were very concerned with how their intermediate products are made. U.S soybean farmers are very concerned about the sustainability of their operations. We have regulations in place to help assure our operations are sustainable and they are enforced."

Sustainability demands have become increasingly important to consumers, and manufacturers around the world have shown a desire to source sustainably-produced ingredients.

"One of the reasons that it's so important that we talk about sustainability is that it's becoming more and more important throughout the value chain," Covert said. "Southeast Asian companies buy large quantities of U.S. soy to produce items for EU manufacturers that demand sustainably-produced goods."

Covert says customer-focused efforts like these recent meetings help build and maintain global markets for U.S. soy.

"My impression is that the people I spoke with are interested in doing more business with the U.S. soy industry, which is great news." ◘

U.S. Meat Prospers in Peru Benefiting America's Soybean Farmers

Adobo. Anticuchos. Huatia. All of these traditional Peruvian dishes have one thing in common: meat.

As Peru's economy continues to grow, so does its demand for beef, pork and poultry, and the quality of U.S. meat exports has led to increased exports to the South American country.

"The U.S. label is well received in Peru," says Joel Thorsrud, United Soybean Board (USB) Domestic Opportunities Target Area coordinator and a soybean, corn and wheat farmer from Hillsboro, N.D. "U.S. meat has a very good reputation in South America for being good quality and a safe product."

It is proudly marketed in restaurants and supermarkets, and many consumers want to buy these U.S. imported products.

Thorsrud, along with fellow USB farmer-leader David Hartke from Illinois, and other pork, beef, soybean and corn farmers, recently attended the U.S. Meat Export Federation (USMEF) Market Expo in Lima, Peru, and Panama City, Panama. They met with importers of U.S. meat and learned about USMEF's meat-marketing efforts that are being funded by various checkoffs, including the soy checkoff.

Meat exports support U.S. animal farmers and soybean farmers alike. Growing exports for U.S. meat also means growing demand for U.S. soy meal to feed those animals here in the United States.

"The fact is we're all working together," says Thorsrud. "Industry leaders in corn, soybeans, pork and beef are collaborating to make a difference, which is moving product and creating extra demand for all our commodities."

With its growing economy, Peru has been a consistent customer of U.S beef for the last several years. In 2012, the country imported nearly 12.9 metric tons, valued at $29.7 million, according to USMEF. South Americans also enjoy offal and other underutilized cuts such as beef tripe, heart and knuckle.

Peruvians are huge poultry consumers. U.S. pork is relatively new to the country, but Thorsrud says the people just need time to become more familiar with the product. ◘

Mapped Soybean Genome: Key to Creating a Better Soybean

Like a pirate looking for treasure, researchers are using the map of the soybean genome to hunt down genes that can unlock yield increases, higher protein levels or disease and pest resistance.

These five soy checkoff research projects could create better soy products for end-users:

Generation Study – This retrospective look at changes in the soybean genome is giving researchers at Iowa State University (ISU) clues into what's been responsible for continued yield improvement. Crossing two successful genotypes together creates varieties that are better than either of the parents.

Resequencing – University of Missouri researchers are sequencing important soybean genotypes to understand how they differ from Williams 82, the first soybean genome sequenced. As data is generated from many soybean varieties and genotypes, it will be easier to determine which genes control which traits, a helpful tool for plant breeders. This could help with plant development, disease resistance and seed quality. This project is jointly funded by the soy checkoff, Bayer, Dow AgroSciences and Monsanto.

Soybean Cyst Nematode (SCN) Resistance – Rhg1 is the most widely deployed SCN resistance gene, and although genetic markers linked to Rhg1 were discovered more than a decade ago, the gene or genes responsible remained elusive. In late 2012, researchers at the University of Wisconsin-Madison and University of Illinois demonstrated that not one but three genes at Rhg1 are responsible for SCN resistance. In addition, ten copies of each of the three genes are present on the chromosomes of typical SCN-resistant varieties.

Nested Association Mapping – The University of Illinois nested association mapping project locates genes that control yield and seed composition, as well as other agronomic traits, so that those genes can be exploited to create better varieties more quickly. Using both elite U.S. soybean varieties and soybean germplasm from other parts of the world, researchers can identify and determine gene locations on soybean chromosomes, which makes subsequent breeding much easier.

Epigenetics – New technology, being used at the University of Georgia, measures soybean epigenetics, which is variation caused by nongenetic factors. Researchers are looking at this variation to determine how it contributes to soybean physical characteristics, also called phenotypes. ◘

ASA's WISHH Program Formally Inaugurates Extruder in Pakistan

This summer in Pakistan, ASA's World Initiative for Soy in Human Health (WISHH) program formally inaugurated the E-750 Extrusion equipment shipped to local private-sector partner Oryza as part of the U.S. Department of Agriculture (USDA)-funded "FEEDing Pakistan" program. Oryza will use the extruder to produce high protein floating fish feed with U.S. soybean meal—the first feed of its kind to be produced in Pakistan.

This new technology has the capability to greatly improve the aquaculture sector and to impact food security in Pakistan.

WISHH and the Pakistan Fisheries Development Board started the FEEDing Pakistan program in 2011.

FEEDING Pakistan is a $1.5-million USDA Foreign Agricultural Service initiative that will use 25 metric tons of U.S. high-protein soybean meal for feeding trials in Pakistan. Other elements of the program include:

- Assessment of the Pakistani fish farming industry
- Feeding trials to demonstrate the results of fish feed formulations
- Cooperate with Kansas State University in training courses on fish feed manufacturing and best management as well as technical assistance to industry stakeholders, such as feed manufacturers and farmers.

Pakistan has an extensive system of fish farming but no commercial fish feeds are produced in the country. Soy-based fish foods are expected to allow the fish to grow 4-5 times faster. With approximately 187 million people, Pakistan is the sixth most populous country in the world. Therefore, FEEDing Pakistan is key for better nutrition and economic growth. ◘

The group at the formal inauguration ceremony at Oryza outside of Lahore, Pakistan. (Photo by R.S.N. Janjua, ASA/WISHH/PK)

WISHH Hosts Farmer Field Day Events in Pakistan

WISHH hosted farmer field day events at seven sites throughout Pakistan earlier this year. The Farmers' Field Days are part of the outreach strategy under WISHH's FEEDing Pakistan program funded by USDA.

The events provided an opportunity for stakeholders to witness the harvest of tilapia fed hi-protein fish feed produced with U.S. soybean meal. More than 450 participants attended the events including progressive fish farmers, members of academia, research fellows, fish traders, feed millers, federal government officials, provincial government officials, representatives from the fisheries department and members of the media.

Attendees were highly impressed with the growth of the fish that had been fed the newly-introduced feed. ◘

Field Day participants witness the harvesting of tilapia before discussing the value of soy in fish feed. (ASA/WISHH/PK photo)

WISHH is a program operated by ASA to promote exports of U.S. soy protein for use in human diets in developing countries. Visionary soybean checkoff boards and other state soybean grower organizations founded WISHH in 2000.

Ohio Farmer Meets U.S. Soybean Customers in China

It's impossible to overstate the importance of China as a market for U.S. soybeans. More than half of the world's soybean exports are purchased by China, including one out of every four rows of soybeans grown in the U.S.

ASA Board member Rob Joslin, a soybean farmer from Sidney, Ohio, traveled with United Soybean Board (USB) representatives to China to provide international customers of U.S. soybeans with information on the 2012–13 U.S. soybean crop, global soy supply and demand outlook, soy price projections and risk management recommendations. USSEC reports that crushers and end users in China were concerned about soybean supplies due to tight ending stock estimates in the U.S. and the uncertainty over soybean production in South America. Joslin confirmed to the group at the U.S. Soybean Market Seminar and Crop Quality Conference in Shanghai that U.S. farmers will fulfill their commitments to supply U.S. soybeans not only to China, but to the world.

ASA farmer-leader Rob Joslin (second from left) is greeted by Beijing Resource Group Chairman Liu Junyi. The integrated swine company has shown great interest in working to promote the benefits of essential amino acids in U.S. soybean meal to animal performance. At left is Minnesota Soybean Research & Promotion Council Direct Craig Bangasser. (USSEC photo)

"Soybeans and soybean products are the most important U.S. export commodity," said Joslin. "Soybean producers are at the vanguard of efforts to improve the U.S. trade balance." ◘

China's aquaculture industry, which is the largest in the world, uses over 4.1 million metric tons of soybeans (about 151 million bushels) annually, compared to zero a decade ago.

The Middle East: A Growing Opportunity for U.S. Soy

ASA Board member and Indiana soybean farmer Alan Kemper traveled over 7,200 miles to lend a hand in constructing bigger opportunities for U.S. soy in the Middle East. Along with USB Director Bob Metz, Kemper was on hand with a large group of soy protein commercial decision makers from throughout the Maghreb, Mediterranean Rim, Gulf States and Egypt for the Dubai Commercial Launch. The event introduced the new USSEC Middle East/North Africa and Asia Subcontinent regional office in Dubai.

While in the region, Kemper was able to talk about the sustainability of U.S. soybean production and quality.

ASA Board member Alan Kemper, left, and USB Director Bob Metz, right, with a Saudi poultry farmer. (USSEC photo)

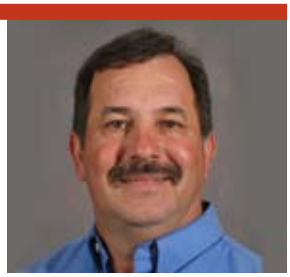
"We had a chance to talk about how we raise soybeans in the U.S. and farm sustainably — specifically in my farming operation, being a fifth generation farm in Indiana. They were excited about that," Kemper said. "We also had a chance to talk about how the quality is better from the U.S. than our competitors."

"The U.S. soy family has made a pledge to our international buyers that we're raising soybeans in a sustainable manner," Kemper said. "All the soybeans on my farm are no-till, meaning we don't disturb the soil. That's good for wildlife habitat, water quality and the soil. That's a good global message. When we go into China, Europe and the other markets around the world, they're concerned about sustainability, so the U.S. soy family is working on building that platform together." ◘

USSEC operates ASA's international marketing offices located in key marketing areas throughout the world. The activities of USSEC to expand international markets for U.S. soybeans and products are made possible through ASA's investment of cost-share funding provided by USDA-FAS, and by producer checkoff dollars invested by USB and various state soybean councils.

ExtensionInsight

Optimal Soybean Planting Dates



By **Ronald Levy Jr., Ph.D.**, Louisiana State University AgCenter Soybean Specialist

Early planting of soybeans has increased in Louisiana over the last several years because of grower success. Despite cold soil temperatures and slow plant growth of seedlings, producers have seen a yield advantage from early planting.

There are many advantages to early planting. Germination and emergence are slower in cooler soil temperatures but soybean plants are less sensitive after first trifoliate (V1) producing about two nodes per week. Later planted soybeans simply cannot catch up with soybean node development of earlier planted soybeans. Earlier soybean planting increases crop yield potential by allowing plants to generate more stem nodes. Plants need to produce as many stem nodes as possible, simply because stem nodes are where the plant produces flowers, then pods, and ultimately seeds within those pods.

In order for plants to acquire carbon dioxide to produce dry matter, the stomates in the leaves must open, allowing water inside the leaf to escape and carbon dioxide to be taken in for photosynthesis. Crop water use includes evaporation loss directly from the soil, and water lost as transpiration from the leaves. Crop water use efficiency can be improved by reducing evaporative water losses. Early planting helps reduce water loss because the cooler soil and air temperatures in early plantings reduce water evaporation compared to temperatures in late May and early June plantings. Canopy closure earlier in the season reduces solar radiation on the soil surface, lessening soil water evaporation. Higher humidity in a closed canopy also minimizes soil water loss.

Earlier canopy closure will cover the ground sooner in the growing season, collecting nearly all of the incoming sunlight for use in photosynthesis. For highest yields, the soybean crop should collect as much of the available solar radiation as possible, simply because plants require the energy of sunlight to convert carbon dioxide into carbohydrates, protein, and lipids (oils). Later planted soybeans will not have the opportunity to collect as many hours of sunlight compared to earlier planted crops, reducing yield potential. Remember the longest day is June 21, summer solstice.

In the future, planting dates could be slightly earlier. In some years higher yields have been recorded from earlier than our optimum plantings date. Earlier planting dates will result from varieties developed to provide sufficient vegetative growth under cooler soil temperatures and adverse conditions. Planting date studies continue to answer questions concerning the optimum planting dates. It appears many of the new varieties are not as photoperiod sensitive as older varieties; therefore, early planting has contributed to increased yields. Late planting dates are usually the most damaging to yields. Yield losses are quite variable but decline rapidly as soybeans are planted beyond the optimum planting dates. ◘

Optimal seeding dates for each maturity group planted in Louisiana are:

Group III – April 15-May 10
Group IV – April 15-May 10
Group V – March 25-May 5
Group VI – March 25-April 30

IssueUpdate

Federal Fuel Policy Yields Local Benefits

By **Anne Steckel**, National Biodiesel Board Vice President of Federal Affairs

For the third year in a row, annual biodiesel production is set to top one billion gallons. This success is in a large part due to the Renewable Fuel Standard (RFS), and to the vision of biodiesel leaders and soybean farmers for a thriving U.S. industry.

Since 2010, the RFS has required a variety of alternative fuels including biodiesel to be blended into the U.S. fuel stream. The policy provides a stable marketplace that stimulates investment and job creation. Over its short tenure, the RFS has been among the most effective public policies for driving domestic energy production. The RFS is working, and biodiesel is among its greatest success stories. It is the first and only EPA-designated Advanced Biofuel to reach 1 billion gallons of annual production, and the only Advanced Biofuel under the program to exceed its RFS requirements for two years running.

The biodiesel industry supported some 50,000 jobs last year along with billions of dollars in GDP and household income. In some areas, biodiesel plants are the driving force of the local economy. For soybean farmers, biodiesel has provided a stable oil market and kept oil prices competitive.

Biodiesel helps diversify our transportation fuel supplies so that we are not at the mercy of global oil markets, heavily influenced by unstable parts of the world. No matter how much oil we produce at home, without diversity we are constantly vulnerable to highly volatile global oil prices. Visit www.americasadvancedbiofuel.org for more information about biodiesel's contribution to changing the mix of our energy picture.

The RFS is also helping to reduce emissions and greenhouse gas. For example, according to the EPA, biodiesel reduces lifecycle greenhouse gas emissions by as much as 86 percent compared to petroleum diesel. With some 4.6 billion gallons used since 2005, biodiesel has reduced lifecycle greenhouse gas emissions by 74 billion pounds – the same impact as removing 5.4 million passenger vehicles from America's roadways. Additionally, the EPA consistently cites tailpipe emissions from traditional diesel – primarily from older trucking fleets and other heavy-duty vehicles – as a major national health hazard. Substituting higher amounts of biodiesel for traditional diesel fuel is the simplest, most effective way to immediately reduce emissions.

Though some livestock groups have raised concerns about the RFS and meal prices, a number of livestock production groups including the National Pork Producers Council are on record supporting biodiesel production because it reduces livestock costs. First, similar to the growing market for used cooking oil, biodiesel production has created a strong new market for animal fats that increases the per-head value of livestock and reduces price pressures on meat and dairy products. In addition, the protein meal from soy is less expensive today because of the demand for soy-based biodiesel. Increased demand for the oil used in

biodiesel production leads to larger supplies of protein-rich meal, which suppresses prices.

Finally, the growth of the biodiesel industry is helping reduce prices at the pump as well. Gadsden, Ala., Mayor Sherman Guyton represents just one of the many cities coast to coast using biodiesel and benefiting from the RFS. The city is saving about $100,000 in fuel costs and taxes by purchasing biodiesel blends for its fleets. "We are being kinder to our environment, we are saving money and we are reducing our dependence on foreign oil," he recently told the *Gadsden Times*. "There's no downside. It's a win, win, win situation." ◘

SoyForward

Farming for the Future: The Brown Revolution

During the twentieth century, the United States built a powerful economy as a result of an agricultural and an industrial revolution. Later, production techniques developed in the U.S., combined with advances in crop breeding, brought a "Green Revolution" to many parts of the world. Going back centuries, agriculture has been the backbone of every society, and when it has been neglected, civilizations have literally failed.

We have learned much from the Green Revolution, but it is now history, so we must ask: what is the future? I believe the future requires a "Brown Revolution," which advocates for the design and adoption of context-appropriate farming systems that increase yields while addressing soil health, water quality, and environmental impact. With today's technology and knowledge, there is no reason the Brown Revolution cannot be greater than the Green Revolution. It must be if we are to defeat global hunger.

All farmers, but especially soybean farmers, will be critical to this success. There are simple things that farmers have done for decades that contribute to the goals of the Brown Revolution. Crop rotations and continual soil cover are two of them; both are practices very familiar to most soybean farmers.

American farmers have long been global leaders in advancing agricultural production and in providing commodities to support critical food relief and emergency food aid worldwide. However, we face new challenges, and we must continue to be leaders.

Our challenges are intensified as the world becomes smaller, both as the number of farmers decreases and as communications have become prolific. When those communications misrepresent facts or advocate for a broken status quo, they hurt not only farmers, but also those who are hungry. We need to tell our story, not let others frame the debate. That is why the Howard G. Buffett Foundation is working with university partners such as Penn State, Purdue, Texas A&M, Southern Illinois University, and others to find ways to increase productivity while minimizing our environmental footprint.

Our foundation's research demonstrates that we can modify our actions without disrupting the basics of our agricultural systems. We are using new tools and new approaches because investment and innovation are paying off. Efficiency and flexibility have reached new levels.

Our industry's knowledge of no-till, strip-till, cover crops, and nutrient management has gone from experimentation to implementation. We have more opportunities ahead of us than the successes we are leaving behind us. But we must recognize that society expects more from us, and our environment demands it. Even at the local level, we each carry a global responsibility.

If we want to control our own destiny then we need to provide our own solutions. If we do not act with urgency, we will face even greater scrutiny and regulation, as well as misinformation from uninformed sources and critics that have misguided agendas. But we are not without fault. If we did not include the soil erosion savings gained through the Conservation Reserve Program (CRP), we would be facing the worst soil erosion numbers in history. That isn't the legacy I want to leave; it isn't a legacy the world can afford.

As farmers, we all understand the importance of time. Each of us has about 40 chances, or 40 growing seasons during our farming career to get it right. We all must do the best job we can, by growing the best crop we can, while looking toward the demands of the future. As we face these challenges, there is no group of individuals I would rather put my faith in than American farmers. I am proud to say that, as soybean growers, we are already on the path to the Brown Revolution. ◘

Howard G. Buffett

Howard G. Buffett operates a 1,500-acre family farm in central Illinois where he grows corn and soybeans, and utilizes a variety of cover crops. He also oversees three conservation ag research farms operated through the Howard G. Buffett Foundation: 1,400 acres in Arizona, 3,500 acres in Illinois, and 9,200 acres in South Africa.