

MISSOURI

Soybean Farmer

DECEMBER
2016

Grain Storage

On the farm, at the elevator or elsewhere, your grain storage plan is key to a successful year.

Election Results

State and Federal, election results and insights into what might be ahead for Missouri agriculture are in this issue's Policy Section.

Looking Back

Wrap up the Missouri Soybean Association's 50th Anniversary celebrations with a decade-by-decade look back.

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I WILL TAKE ACTION AGAINST HERBICIDE-RESISTANT WEEDS.

I will know my weeds. When they grow. When they pollinate. And I will stop them before they go to seed.

I will take action in the field and do whatever it takes to give my crops the upper hand against weeds.

I will take action with careful herbicide management and use multiple herbicide sites of action, because every action counts.

I will take action because it's my bottom line. It's not about this year or the next. It's about the long term.

I will take action. This time. For all time.

Now is the time to take action against herbicide-resistant weeds. Visit www.TakeActionOnWeeds.com to learn how you can prevent herbicide-resistant weeds from spreading.



INSIDE THIS ISSUE OF

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12 *TrumanOne is bringing biodiesel full circle this fall.*



17 *High yields require optimal soil conditions. Go beyond soil testing this year to get the full workup on your soil health.*

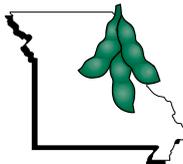
23 *Whether you're storing grain on-farm or at the elevator, there are many factors to consider.*



« Cover Shot

A bumper soybean crop means farmers have a lot to consider this winter, from their storage and marketing decisions to the readiness of their soils for the coming year. This shot was snapped on the Hurst farm during #Harvest16.





From The Field

Notes from Missouri Soybeans' leadership team

MSA Board Members:

Neal Bredehoeft, Alma
 Kelly Forck, Jefferson City
 Renee Fordyce, Bethany
 Johnny Hunter, Dexter
 C. Brooks Hurst, Tarkio
 John Kleiboeker, Stotts City
 Andrew Lance, Barnard
 Matt McCrate, Cape Girardeau
 Tom Raffety, Wyatt
 E.L. Reed, Chillicothe
 Peter Rost Jr., New Madrid
 Ronnie Russell, Richmond
 Greg Sharpe, Ewing
 Warren Stemme, Chesterfield
 Doug Thomas, Brashear
 Matt Wright, Emden

MSMC Board Members:

Robert Alpers, Prairie Home
 Cecil DeMott, Rock Port
 Kyle Durham, Norborne
 Harold Gloe, Hermann
 Tim Gottman, Monroe City
 Patrick Hobbs, Dudley
 John Kelley, Faucett
 Mark Lehenbauer, Palmyra
 Bob Littleton, Dalton
 David Lueck, Alma
 Baughn Merideth, Caruthersville
 Aaron Porter, Dexter
 Lewis Rone, Portageville

USB Board Members:

Richard Fordyce, Bethany
 Todd Gibson, Norborne
 Lewis Rone, Portageville

ASA Board Members:

C. Brooks Hurst, Tarkio
 E.L. Reed, Chillicothe



The mission of the Missouri Soybean Association is to improve the bottom line for soybean farmers. We say and write it fairly often, but how exactly we go about doing that is something I believe is important to share.

As the soybean farmers' voice on policy, we are active in a broad range of efforts, from advocacy to education. That can include working with regulators to move forward on approvals for new on-farm practices, technologies and reduced label restrictions. It also means pushing back on proposed regulations that would burden farmers with the cost of compliance, and those that don't benefit our soil, land and water resources, our markets or our many stakeholders.

That means, for example, that we advocate for growth in biodiesel because we know it provides a 15 percent price support for commodity beans. It also means that we will be at the table for transportation infrastructure decisions – without solid river, rail and road options, getting our crop to the marketplace becomes far more challenging, and expensive.

Soybean checkoff dollars can't be used for these efforts. We depend on membership dues – just \$60 for one year – and donations for policy work. Membership in the Association pays for itself if you take advantage of any of the discounts too. There's a lot of work ahead for us in 2017, and I hope you'll join us in making a difference for the farmers' bottom line.

Matt McCrate - Missouri Soybean Association President



There's that saying "Forewarned is Forearmed" that rings especially true this time of the year. With harvest largely behind us, now is the time many of us pause to take a breath. Taking that time, for deer season, sports, family gatherings and other pursuits after what is arguably one of the most stressful periods of the year, can be a much needed respite.

This is also a prime time for doing our homework – the forewarned part of that saying.

Most of us have been our own worst enemies a time or two – whether it was putting off some necessary maintenance or significantly underestimating what would go into a new piece of equipment, crop or construction project. Some of us have even taken some lessons from the school of hard knocks when it comes to figuring everything from our storage needs, to our marketing plans and tax burdens.

One of the benefits of our investments in the soybean checkoff is the opportunity to be forewarned – from yield data to soil and herbicide testing to global market analysis, we have a wealth of tools at our disposal. It should come as no surprise that markets and Mother Nature will continue to be a bit unpredictable. There's no sense in leaving opportunities to forearm ourselves against those uncertainties on the table now.

John Kelley - Missouri Soybean Merchandising Council Chairman



Letter from the Executive Director



Gary Wheeler, center, with members of the Missouri Soybean Association and American Soybean Association, recognizing Senator Brian Munzlinger with an honorary Lifetime Membership in the Missouri Soybean Association during the 2016 annual meeting.

Without a doubt, time is our most valuable commodity.

We feel it during planting and harvest, and anytime frost or heavy rain threatens a young crop. We feel it with our families and our businesses too, and often in the pressures we put upon ourselves.

Coming out of this combination of election season and harvest, and in the midst of a key time for growth for both the Missouri Soybean Association and the Merchandising Council, it'd be easy to justify that there's just not enough time - period.

Truth be told, we probably all put too many demands on our time and don't always do the best job separating the have-to from the should-do and the want-to-do. I know I'm guilty of that.

At the same time, agriculture, from innovation to policy, is run by those who show up. The people who make the time to be present, to be engaged and to be informed are largely those who make a difference.

Those are definitely the people who are making a difference through the Missouri Soybean Association,

improving the bottom line for soybean farmers, and the Missouri Soybean Merchandising Council, investing soybean checkoff dollars to create opportunities for soybean farmers.

Looking ahead, we have some serious issues on the horizon, from crumbling transportation infrastructure and dated energy policy to the increasing distance between consumers and agriculture, and preparations for the 2018 Farm Bill.

We also have great opportunities for fellowship among growers and a grassroots network of Missouri Soybean Association members ready for a new way of getting together this winter – from meetings with Farm Journal and Chip Flory (see pages 30-31) and a new series of Soybean Socials (watch your mailbox for an invitation to a social in your area).

It may not feel like there's enough time, but I hope you'll dig deep and find a way to engage with your Missouri Soybean Association and Missouri Soybean Merchandising Council this winter. We'll show up. And we look forward to seeing you. Together, we'll make a difference.

God Bless!

Gary Wheeler

Executive Director / CEO
Missouri Soybean Association
Missouri Soybean Merchandising Council
Mid-America Research Development Foundation



MISSOURI SOYBEAN FARMER

MARCH, 1985

Checkoff news published by the Missouri Soybean Merchandising Council

VOL. 2, NO. 3

Yearbook: Missouri Soybean

The Missouri Soybean Association celebrates 50 years of service to Missouri soybean farmers this year, and in this special section is looking back at some of those milestones. This is the last in a six-part series highlighting the organization's golden anniversary.

By Christine Tew

Rounding out the celebration of the Missouri Soybean Association's 50th anniversary, this last look back hits the high notes for developments affecting soybean production in Missouri.

Following the end of World War II, the soybean earned the nickname "Miracle Bean." According to the Commodity Research Bureau, that moniker came because "soybean prices were higher than corn prices and soybeans were generally easier to grow. Demand for soybeans quickly surged due in part to the high protein content in soybeans. Soybean meal, with its high protein content, could be used as a super-charger for animal feed. Soybean oil found very strong demand since it is nearly tasteless and colorless and is ideal for use in processed foods."

This timeline picks up in the 1960s, as soybean production in Missouri was growing rapidly and soybean farmers were coming together to form the Missouri Soybean Association. Many years earlier, in 1920, the American Soybean Association was founded to represent soybean farmers' interests. The national association went on to be formally organized in 1925 and was incorporated February 28, 1946.

1960s

In 1964, the American Soybean Association began funding research to find new uses for soybeans and to reduce the production costs for growing a soybean crop as soybean stocks became burdensome and exceeded usage.

The Missouri Soybean Association was founded February 1, 1966 during a meeting of Missouri farmers held on the University of Missouri campus in Columbia. Encouragement from the American Soybean Association's farmer leaders was instrumental in establishing the state association.

Soybean Day was held on the University of Missouri campus February 9, 1966 as



Charter board members of the Missouri Soybean Association held their first meeting February 9 during Soybean Day on the University of Missouri campus. Left to right, seated, R.P. Simcoke, Kennett; Parke Pepper, Weston, vice president; Glen Myers, Memphis; and Conley Bennington, Craig. Standing, C.E. Shortridge, Stoutville; Ted Sevits, Kirksville; J.I. Akeman, Slater; Stanley Wallach, Eureka; and Willis Baker, Memphis. Not pictured were Arline Avery, New Madrid, president; Don Pemberton, Cape Girardeau, secretary-treasurer; John Filkins, Kirksville; Dalton Harris, Jasper; and J.O. Wise, McCredie. Soybean Digest magazine covered the event and provided this photo as a courtesy to the Missouri Soybean Association.

part of Ag Science Week. The Missouri Soybean Association board of directors held its first meeting in conjunction with Soybean Day. Dick Simcoke was chosen as chairman of the meeting, and David Knight was chosen as secretary. The board of directors established bylaws and selected their first officers. Arline

Avery was elected president of the board, Parke Pepper as vice-president and Don Pemberton as secretary-treasurer.

The first Missouri Governor's Conference on Agriculture was held in 1967.

Soybean prices ranged from \$2.13 to \$2.75 per bushel during the 1960s, with a decade average of \$2.24, according to the USDA. Adjusting those prices for inflation takes them to \$2.60-\$3.55, with an average of \$3.20 per bushel for the decade.

1970s

During the early 1970s, soybean cyst nematode was found to have spread beyond Missouri's bootheel. The spread was seen north of Crowley's Ridge and along the Mississippi River from Cape Girardeau and Bollinger counties to Lincoln County.

In the summer of 1972, grain and soybean prices rallied sharply. Soybean prices nearly quadrupled from \$3.50 per bushel to a record high of \$12.90 per bushel (nearest-futures) in early 1973, according to the Commodity Research Bureau. That rally saw a response from the federal government encouraging US soybean farmers to increase their acreage to meet demand. Brazilian soybean farmers did the same, growing their production by roughly six-fold. The volatile soybean prices of the late 1970s are often attributed to that global surge in production.

In 1974, the Missouri Pesticide Use Act and the Missouri Pesticide Registration Act charged the Missouri Department of Agriculture's Plant Industries Division with licensing pesticide applicators and dealers, registering pesticides and performing inspections and investigations.

Missouri soybean farmers voted to create the Missouri Soybean Merchandising Council in 1979. The

new organization and its state-level soybean checkoff program kicked off a big increase in soybean-related research and educational opportunities for soybean growers.

"We knew we needed to increase funding for research and marketing efforts to improve soybean farming profitability so we set out to establish the state checkoff program," said Joe Pepper, a soybean farmer from Weston, who volunteered with the boards of both organizations 1967-1985.

In 1978, the American Soybean Association established its world headquarters in St. Louis.

The Missouri Department of Agriculture's Commodity Services Program was established in 1979 to support Missouri's growing number of agricultural commodity organizations. The program conducts annual board elections for many checkoff groups, including the Missouri Soybean Merchandising Council, as stipulated in state statutes and commodity council bylaws, ensuring that balloting is handled by an unbiased third-party.

1980s

The Missouri Agricultural and Small Business Development Authority was established in 1981 to provide financial tools for farmers.

University of Missouri extension specialist Dr. Zane Helsel began work as



Kenlon Johannes

the soybean specialist in 1981. He was known as the "Soybean Doctor" for his work with farmers throughout Missouri.

The interdisciplinary Food for the 21st Century Program was created at the University of Missouri. It went on to produce 15 soybean varieties through research collaborations. The program, launched in the mid-1980s with support from then-Governor Christopher S. "Kit" Bond, was intended to help Missouri's food producers.

In 1985, the Missouri Department of Agriculture launched the AgriMissouri program to promote Missouri-made and value-added products to consumers.

Missouri Soybean farmer leader Charles Kruse of Dexter stepped down from the board of directors to become Missouri's Director of Agriculture. He was appointed by Governor Ashcroft. Kruse, a farmer from Dexter, had represented district 7 on the soybean board.

In 1986 and 1987, the EPA granted 11 new herbicide registrations in Missouri, nearly all of which were soybean herbicides. EPA approved several new mixes for

“We knew we needed to increase funding for research and marketing efforts to improve soybean farming profitability.”

-Joe Pepper



Looking Back: Missouri Soybean Yearbook

soybean use during that 15-month window as well. Approved herbicides included Cobra, Reflex, Scepter, Whip, Canopy, Preview, Lorox and Gemini.

Arline Avery, the first president of the Missouri Soybean Association, was honored at the Association's 1987 annual meeting by having a new soybean variety released in his name. The new variety was developed by soybean breeder Sam Anand at the University of Missouri Delta Center in Portageville and was considered good yielding and carried resistance to Races 3 and 4 of the cyst nematode. It was a great honor for Avery, who farmed at New Madrid.

Kenlon Johannes was hired as the Missouri Soybean Association and Missouri Soybean Merchandising Council's executive director in 1988.

By 1988, soybean exports to the Soviet Union increased from 2.5 million to 91 million bushels. Palm oil imports declined as US consumers became more concerned about saturated fats in their diets, and soybean oil use increased. The American Soybean Association and the Missouri Soybean Association were promoting for soybean oil for dust control and for newspaper printing inks in an effort to boost demand. The Missouri Soybean Merchandising Council offered to pay for the first 100 gallons for businesses using soybean oil to control dust. The MFA Exchange in Trenton, Missouri was among those that made the switch to soybean oil under that incentive.

The Missouri Department of Agriculture's Petroleum Laboratory was constructed in 1989. It continues to be the home of Missouri's national-leading fuel quality testing program, including housing testing for diesel fuel and biodiesel.



Bill Wiebold



The American Soybean Association and Monsanto rolled out a SoySeal to mark industrial products, including soy-based inks, made with soybean oil in 1989.

In 1989, AP Rao-Arelli developed a new tool as part of the soybean research program at the University of Missouri's Delta Research Center in Portageville. The machine was able to automatically dispense 1,000 soybean cyst nematode eggs into a pot of soybean plants, replacing time consuming hand-counting and application, and adding consistency in soybean research studies.

1990s

On July 9, 1990, Governor John Ashcroft signed House Bill 1064 into law, requiring the state to print with SoyInk. The bill was a priority for the Missouri Soybean Association and was carried by Representative Larry

Thompson and Senator Steve Sharp, both democrats from Kennett.

Bill Wiebold, state soybean specialist, joined the University of Missouri Cooperative Extension Service in 1990.

Soybean farmer-funded research completed at the University of Missouri in 1990 found that soy-based milk could serve as a good substitute for dairy milk for drinking and baking for individuals not well-suited to consuming cow milk.

The national soybean checkoff was created through the Soybean Promotion, Research and Consumer Information Act, which became effective July 9, 1991 with the publication of the USDA Soybean Promotion and Research Order. National soybean checkoff assessments began September 1, 1991.

Missouri soybean farmers funded the earliest research into esterified soybean oil at the University of Missouri as a

replacement for petroleum-based diesel fuel in 1991. They suggested the fuel could be used in a 10 to 30 percent blend with petroleum-based diesel fuel and called the product SoyDiesel. The SoyDiesel initiative saw broad support from the United Soybean Board, American Soybean Association and at the state level as soybean producers raised awareness of soy-based renewable fuel in the coming years.

In 1992, the National SoyDiesel Development Board was established in Jefferson City. Kenlon Johannes left the Missouri Soybean Association and Missouri Soybean Merchandising Council to lead the new organization. Johannes was replaced by Dale Ludwig at the state level.

Following the flood of 1993, Missouri saw challenges from environmental groups opposing rebuilding levees to protect cropland in river bottoms. The Missouri Soybean Association stood up as an advocate for rebuilding as a critical part of the road to recovery.

The passage of a referendum continuing the national soybean checkoff in February 1994 led to some noticeable changes for soybean growers in Missouri. Prior to that vote, requests for refunds on the soybean checkoff were an option for growers. The 1994 referendum reduced the allowable refund amount to 10 percent, and led to the refund program ending the following year.

The Missouri Soybean Association launched its statewide soybean yield contest in 1995.

RoundUp Ready soybeans became available to Missouri soybean farmers in 1996.

The first Commodity Classic conference was held in 1996. The American Soybean Association and the National Corn



A 1999 image of the Missouri Soybean Association's new building on the western side of Jefferson City. The building became the home of operations for the Missouri Soybean Association, Missouri Soybean Merchandising Council and many of their partners.

Growers Association partnered on the event, which was held in Phoenix, Arizona.

In 1997, House Bill 557 authorized the Missouri Agricultural and Small Business Development Authority to award grants and administer loan guarantee programs for projects that add value to agricultural products, in addition to the existing responsibilities for providing agricultural producers financial resources below conventional rates.

St. Louis' Danforth Plant Science Center was founded in 1998. The Center, which was launched to find solutions for worldwide hunger, disease and depletion of the earth's natural resources, was established with the support of agriculture. Partners included the University of Missouri and Monsanto.

In 1999, the Missouri Soybean Association completed construction on the new building at 3337 Emerald Lane in Jefferson City. The building was funded by soybean

farmers and industry partners to house operations for both the Missouri Soybean Association and Missouri Soybean Merchandising Council.

2000s

In 2000, Missouri's Agriculture Innovation Center was created by the General Assembly to serve as a resource for Missouri's agricultural producers and businesses. In 2002, it merged with the Missouri Department of Agriculture's AgriBusiness Development Division to better serve the agriculture community.

The World Initiative for Soy in Human Health (WISHH) program was launched in St. Louis in 2001. The program promotes the use of soy products in food aid worldwide.

The 2002 Farm Bill saw the addition of soybeans as a program crop, meaning they were eligible for benefits under the direct payment and target price income



support programs, as well as under the marketing loan program, as a result of lobbying efforts by soybean farmers.

The Missouri Ag Mediation program, part of the Missouri Department of Agriculture, began in 2002, offering a low cost alternative to litigation by assisting Missouri farmers in settling disputes, including those related to program participation, contracts and crop insurance with USDA agencies, other farmers or lenders.

Missouri established the Qualified Biodiesel Producer Incentive Fund in 2002 to provide grants for biodiesel plants that had either majority ownership, 51 percent or more, by Missouri farmers, or used at least 80 percent Missouri-produced feedstock.

The Missouri Soybean Association purchased the Bay Farm in 2004, a parcel of land adjacent to Rangeline Road, east of Columbia. With that purchase, Missouri became the first state soybean association to own a research farm.

Missouri's biodiesel industry began to take shape in 2004, as the board of directors for Mid-America Biofuels, LLC, prepared to break ground on Missouri's first farmer-owned biodiesel processing plant. The groundbreaking for the plant in Mexico, Missouri was held October 24, 2005 and the facility held a ribbon cutting October 24, 2006. Construction on a second plant, Kansas City-based Paseo Biofuels, began in late 2006.

In January 2009, the Missouri Soybean Association rolled out the 100 BuClub – a special designation for soybean farmers topping the 100 bushel-per-acre mark in its annual yield contest. The first two honorees were Kip Cullers and Charles Hinkebein.

2010s

The Paseo Biofuels,



University of Missouri soybean breeder Grover Shannon holds a variety of soybean with high oleic acid content developed through the breeding process patented in 2015.

LLC, biodiesel plant announced an expansion project in 2012 to grow capacity by 40 percent in partnership with Cargill and the Missouri Soybean Association. The plant started in 2006 with an equity drive in which more than 650 agricultural producers in Missouri purchased shares in Paseo Biofuels, LLC, which formed a joint venture with Cargill to help make the facility a reality. It is located near the Paseo Bridge in Kansas City.

The Missouri Soybean Association opened the doors to the Bay Farm Research Facility in 2012, creating a state of the art facility for research benefiting the bottom line for soybean farmers. The facility quickly became a hub for soybean checkoff-funded research.



Gary Wheeler

In 2013, United Soybean Board farmer leader Richard Fordyce of Bethany was named Missouri Director of Agriculture. Fordyce had previously served on the state organization's board of directors as well.

In 2014, Gary Wheeler was named executive director and CEO for the Missouri Soybean Association and Missouri Soybean

Merchandising Council. He replaced Dale Ludwig, who left the organizations in late 2013, in that role.

In late May 2015, U.S. Patent No. 9,035,129 was issued for a method to produce soybeans with high oleic acid content developed through soybean breeding. The patented process is the product of a partnership between the University of Missouri, USDA, Missouri Soybean Merchandising Council and United Soybean Board, that included research funded by the soybean checkoff. The breeding method allows Missouri to bring the US's first non-GMO high oleic soybean varieties to the marketplace.

The Missouri Soybean Merchandising Council partnered with Farm Journal Media to make Missouri's first Soybean College program possible in 2015. The event was hosted on the Missouri Soybean Association's Bay Farm Research Facility and attracted more than 100 farmers and industry representatives.

In 2016, Missouri nominated its first female director to the United Soybean Board. Meagan Kaiser, also a member of the Missouri Soybean Association, was appointed to the board by USDA secretary of agriculture Tom Vilsack.



The nearly 300 acre farm supports and facilitates research, business and market development and educational programs and is home to partnerships between soybean farmers, the University of Missouri, USDA and many others. The farm is also home to a large portion of Missouri's soybean checkoff funded research.

Bay Farm Harvest Update

By Greg Luce

The 2016 growing season at the Bay Farm Research Facility, and much of Missouri, started off with good planting conditions followed by an unusually hot and dry June. In fact, it was so abnormally hot and dry that June was being compared to that of 1988, and we were braced for a long, hot summer. Instead, it turned wet in July, August and into September. Yields at the Bay Farm have been excellent, just as much of Missouri has experienced.

The fall has been excellent for harvest and getting completed early for the Bay Farm. Since the Association's Bay Farm is a research center, and houses the MU Northern Missouri Soybean Breeding program, harvest tends to go much longer than a typical farm. This is due to the wide planting window as the breeding program receives late arriving

soybeans from winter nurseries that are not planted until July.

The Northern Missouri Soybean Breeding program led by the University of Missouri's Andrew Scaboo is a main focus at the farm. However, many other things are also happening on the farm - including ongoing pollinator studies led by Ray Wright, and conservation planning and implementation for wildlife habitat with the Missouri Department of Conservation which is starting this fall.

We are also collaborating with the Missouri Strip Trial Program and we have two cover crop strip trials planted on the Bay Farm this fall. One strip trial was in soybean and will go to corn, and the other in corn last season and will be planted to soybean in 2017. We are

comparing cereal rye, wheat and no cover crop strips that are replicated for better accuracy of the data. Cover crop measurements will be taken as well as the impact on next year's corn and soybean crops planted following the cover crop termination next spring. Thanks to the team at the University of Missouri's Bradford Research Farm for the work they do at Bay Farm including helping us plant these important on-farm comparisons.

Other important research projects are conducted at the Bay Farm Research Facility and we encourage you to stop in and have a look for yourself. If you are interested in a tour of the facility, contact Greg Luce at gluce@mosoy.org.





By Jason Jenkins,
Mill Creek Communications

Missouri Made and on the move

TrumanOne, the equipment truck for the University of Missouri's football team, is bringing the Show-Me State's biodiesel story full circle. What began a quarter-century ago as a research project between farmers and the land grant institution is now powering important messages of partnership, commitment and sustainability.

Toughness. Team. Enthusiasm.
Determination. Attitude.

Many might connect to these words, but nowhere do they resonate more than in agriculture and sports. They resonate with Missouri soybean producers — where weather, disease, market volatility and other factors provide adversity year-round. They also resonate with Mizzou Football — where the trials and tribulations of playing in the nation's most competitive conference requires year-round commitment and discipline.

So, it's no surprise to see these words emblazoned on the Mizzou Football equipment trailer pulled by TrumanOne, a brand-new Peterbuilt Model 579

supplied by a homegrown Missouri trucking company and fueled by homegrown Missouri-made biodiesel.

The new partnership among the Missouri Soybean Merchandising Council, Wil-Trans of Strafford, Mo., and Mizzou Athletics is the latest in a series of biodiesel collaborations that extend back more than 25 years to the birth of the soy-based fuel in the Show-Me State.

"This is a great way for us to have a connection with soybean farmers in the state of Missouri," says Nick Garner, general manager of Mizzou Sports Properties. "Those producers might not be able to come home to Mizzou every Saturday in the fall because of harvest, but they are a big part of what we do.

This is a great way for all Missourians to be connected to Mizzou and feel like there's real ownership."

In college football today, the equipment truck is no longer a nondescript vehicle lost among the hundreds of tractor-trailers coursing up and down the interstate. Instead, what once was a blank canvas has been turned into an opportunity to share a message and play a role in building a brand.

"As the visiting football team, when you roll your equipment truck into town — whether that's into Gainesville or Nashville or Baton Rouge — you want to do it in style," Garner says. "It becomes a source of pride for the team and the fans who see it."

According to Garner, the University's athletic department came to his office before the season began with a request to wrap its trailer with the campus' new "#MizzouMade" branding campaign. Along the same time, Wil-Trans, which has company ties to the University, expressed a desire to get involved. When the Missouri Soybean Merchandising Council and soybean checkoff came to the table, the best way to fuel the new endeavor became readily apparent — biodiesel.

"Biodiesel made from soybean oil got its start in the United States at the University of Missouri," says Tom Verry, director of Outreach and Development for the National Biodiesel Board in Jefferson City. "The Agricultural Engineering Department got the idea after seeing biodiesel made from rapeseed oil in Germany."

In 1990, the Missouri Soybean Merchandising Council funded the nation's initial research into soy-based replacements for diesel. The first truck — a Dodge with a Cummins engine — ran on B100 in 1991, followed by "Old Brownie," a 1992 Ford F-250 that accumulated more than 375,000 miles while promoting the use of biodiesel. That truck continues to roll as an ambassador for the fuel at Rockwood Summit High School in Fenton, where the Monsanto Education Center for Sustainable Solutions and support from Missouri soybean farmers allows students to learn about biodiesel firsthand.

"Nationwide, biodiesel has built a really good positive view from the public, and this project with the football teams just helps reinforce that," Verry says. "As a well-respected institution, the University of Missouri provided a credible voice for the fuel 25 years ago and gave the industry a lot of support at the very beginning. Today, there's no better way to continue doing that than by working with the University and Mizzou Football on what is essentially a rolling billboard that will travel the country and help deliver the message of homegrown fuel."

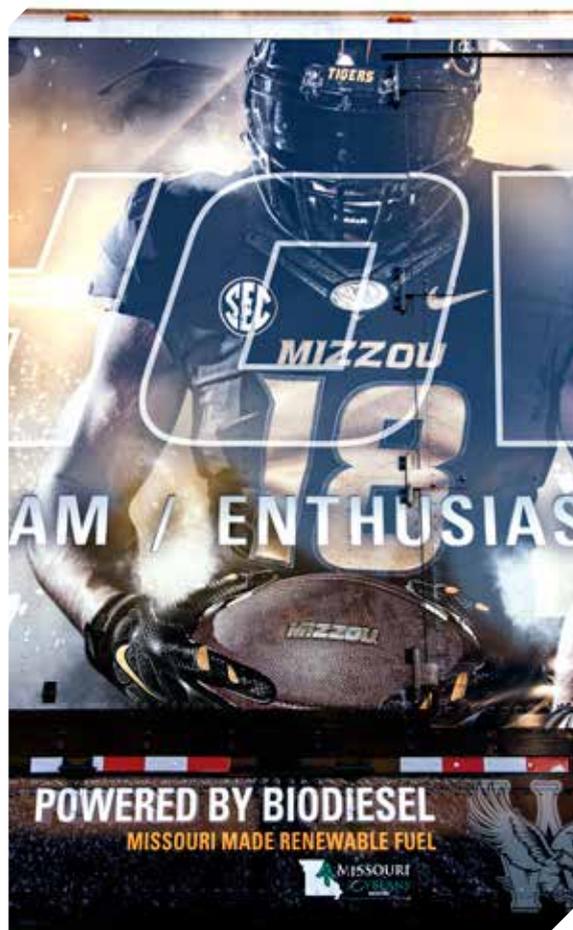
From the four wheels of "Old Brownie" to the 18 wheels of "TrumanOne," the biodiesel industry has witnessed tremendous growth in past quarter-century, driving demand for soy oil and adding value to the soybean supply chain.

Today, soybean oil is the biodiesel industry's primary feedstock in Missouri. As such, processing soybean oil into biodiesel increases the value of an acre's worth of soybean oil from \$168 to \$243 per acre. Between 2006 and 2012, the fuel helped increase soybean prices by 74 cents per bushel, according to research from the United Soybean Board.

Missouri's annual biodiesel capacity has reached nearly 200 million gallons, ranking the state fourth nationally in production, trailing only Texas, Iowa and Illinois. Of the state's estimated current capacity, 88 percent of the capacity is devoted exclusively to processing soy oil into biodiesel.

Today, biodiesel is offered for sale from coast to coast. TrumanOne's maiden voyage running on a biodiesel blend took it nearly to the East Coast when it traveled to Columbia, S.C., in November for the Tigers game versus the Gamecocks.

"The roots of biodiesel go back deep at Mizzou, and there was a great willingness by all partners to work together," says Garner, adding that athletics may look for other ways to incorporate biodiesel in its operations. "We hope that this leads to greater exposure for biodiesel in general and allow companies like Wil-Trans, which has a fleet of hundreds of trucks moving freight across the country, to run more



of its units on biodiesel, not just our truck. Our truck was really the case study to show off this #MizzouMade homegrown deal."

When TrumanOne isn't hauling equipment to and from football games, it can be found parked at the Mizzou Athletic Training Complex along Stadium Boulevard in Columbia, just west of Memorial Stadium. Garner says Wil-Trans — which also provides similar services to the University of Montana — has committed to operating TrumanOne for the next three years. He says Mizzou Sports Properties is looking forward to continuing to grow the relationship with Missouri's soybean producers.

"This is such a great branding piece for Mizzou and for our partners," Garner adds. "Hopefully, this is the beginning of a long-term partnership."

To learn more about Mizzou athletics, visit www.mutigers.com. ■



ELECTION WRAP UP OUTLOOK FOR MISSOURI AG

Missouri agriculture continues to be well positioned for success following the recent election cycle, and the Missouri Soybean Association remains highly engaged in ensuring soybean growers' priorities are addressed and farmers' bottom line protected.

The Missouri Soybean Association strongly backed Amendment 1, which extends the one-tenth of one cent sales tax for the operation of Missouri's state parks and highly successful soil and water conservation program for 10 years. Missourians showed their approval, supporting the measure by a resounding 80.1 percent – the highest margin by which the soil and water sales tax has passed.

Among the contests the Missouri Soybean Association was watching closely, the race for Missouri's next Governor stood out. Both major party candidates had policy positions that stood to benefit soybean growers. The Missouri Soybean Association board of directors voted to endorse Chris Koster in August, citing his history with the organization and support of agriculture. When the ballots were counted, Missourians chose Eric Greitens as governor-elect. Missouri Soybean Association president Matt McCrate led the congratulations to Greitens and his staff, and left no doubt Missouri's soybean farmer leaders are committed to working with him and his team (learn more about Governor-elect Greitens and soybean farmers' shared priorities at right).

Congratulations are also in order for many friends of the Missouri Soybean Association and farmers, including: Senator Roy Blunt, Lieutenant Governor-elect Mike Parson, and Attorney General-elect Josh Hawley, all endorsed by the Association. The board of directors also voted to endorse Amendment 4, which prohibited new state or local sales taxes from being levied on services. That amendment passed with 57.1 percent.

While the Missouri Soybean Association did not make endorsements in other contests, the Association supported several candidates through its SOYPAC who have previously

helped advance soybean farmer-focused priorities. Among those:

Rep. Kevin Corlew (R-Kansas City) won re-election to House District 14 representing Platte and Clay counties. Corlew has been a strong supporter of improving Missouri's public port facilities and has shown a solid understanding of river transportation infrastructure issues facing farmers.

Rep. Don Rone (R-Portageville) won re-election to represent House District 149, covering Mississippi, New Madrid, Pemiscot and Scott counties. Rone has been a champion for agriculture and serves as vice-chair of the House Ag Appropriations Committee. He also represents some of Missouri's top soybean-producing counties.

Rep. Caleb Rowden (R-Columbia), won election to the 19th Senate District and will represent Boone and Cooper counties. Rowden has toured the Bay Farm Research Facility and met with soybean farmer leaders to discuss infrastructure, regulation and research many times.

Members of the Missouri Soybean Association board of directors and their staff met with each candidate multiple times specific to making endorsement decisions, beginning in 2015. Staff and directors also met with many organizations involved with the constitutional amendments being considered.

For each endorsement decision, as well as on contribution decisions, the farmer leaders of the board of directors reviewed the candidate's record and compared those positions to the Association's priorities related to improving the bottom line for soybean farmers in a serious and deliberate process.

To learn more about how the Missouri Soybean Association is the soybean farmers' voice on policy and how the organization represents farmers to policy makers, visit mosoy.org. For more on Missouri's election results, explore the Secretary of State's election pages at <http://enr.sos.mo.gov/EnrNet/>.

Soybean Farmers Congratulate Governor-elect Greitens

Missouri's soybean farmers and the Missouri Soybean Association (MSA) congratulate Missouri's Governor-elect, Eric Greitens.

"Congratulations to Missouri's next Governor, Eric Greitens. We look forward to his leadership and will work closely with him and his team," Missouri Soybean Association president Matt McCrate, a farmer from Cape Girardeau, said. "Farmers continue to face the burden of federal over-regulation and crumbling transportation infrastructure, and our Governor-elect has committed to address those challenges. We will stand with him in that effort. Now is the time to focus on moving Missouri forward, and continuing to grow agriculture in our state."

Governor-elect Greitens has several policy positions that align with the Missouri Soybean Association's efforts to improve the bottom line for soybean farmers. Those shared priorities will be key in 2017 and throughout Greitens' time as Missouri's governor.

Prior to being named Missouri's next Governor, Eric Greitens participated in a Question & Answer session with the Missouri Soybean Association and Missouri soybean farmers. In his responses, he shared his support for biodiesel, commitment to improving Missouri's transportation infrastructure and his strong opposition to federal regulatory overreach.

"Our roads and bridges are how farmers get their product to market, and our state is failing at its duty to maintain these arteries of commerce, especially in rural Missouri. A closed bridge can mean costly detours during time-sensitive harvests, and that is not acceptable," Greitens said on improving



Governor-elect Eric Greitens

the quality and reliability of Missouri's highways and bridges.

Other questions addressed challenges facing the Mississippi and Missouri river systems, support for biodiesel in Missouri and growing livestock production in the state, as well as soybean-specific research efforts and an overall direction for agriculture. Those questions, and Greitens' responses, are posted online at mosoy.org. Members of the Missouri Soybean Association also received that information via email the morning of November 9.

The Missouri Soybean Association's mission is to improve the bottom line for soybean farmers and has been the voice of those soybean farmers for more than 50 years. To learn more about how the Missouri Soybean Association works to increase the profitability of Missouri soybean farmers through advocacy and education efforts across the state, and join the Association, visit mosoy.org.



Soybean Policy Update

The recent elections have stoked both optimism and uncertainty heading into 2017. The Missouri Soybean Association looks forward to working with our newly-elected state leadership, as well as with our congressional delegation, on priority issues for improving soybean farmers' bottom line.

State Policy Update

Pre-filing of bills for the 2017 legislative session opens December 1. Following in early 2017 with the new Missouri General Assembly convening January 4. This session will begin with special inauguration ceremonies for the new governor and other newly elected and re-elected leaders.

Thanks to those of you who completed our recent policy survey, included in the October issue of this magazine, Missouri

Soybean Farmer. Those responses are key to establishing policy priorities for the coming session, as well as for more long-term efforts.

Of importance to soybean growers, highway funding will certainly be on the docket for discussion once again. A majority of survey responses favor increasing the state's fuel tax. In the aftermath of dicamba-associated crop damage in the bootheel and elsewhere, efforts to increase penalties for misuse will likely be proposed as well. A majority of grower responses thus far on this issue have indicated this may not be the ideal solution. The Missouri Soybean Association has been and will continue to be highly engaged in finding the right response to this issue. Further, a strong majority of responses favor increasing biodiesel use through the development of a statewide renewable fuel standard.

In other positive news, Governor Nixon's administration continues to make progress on paying off the deferred payment balance under the Missouri Qualified Biodiesel Producer Incentive Fund. On October 21, Governor Nixon made available an additional \$3 million in funding for this program, with monies secured through a settlement reached with Volkswagen. Attorney General Chris Koster was instrumental in making this possible through his work on the issue and the Missouri Soybean Association thanks him for those efforts.

The 2016 legislative session was an exceptional one for agriculture and will be hard to surpass. This is a crucial time for agricultural policy development and we need to hear from you. Please send us your comments and suggestions at <http://mosoy.org/contact-us/> or by calling (573) 635-3819.



Federal Policy Update

The Missouri Soybean Association endorsed Senator Roy Blunt's re-election to the US Senate and we were pleased to see him win on November 8. Senator Blunt also earned MSA's Soybean Champion award for 2016 because of his tireless work on behalf of soybean growers, especially on the Agricultural and Transportation Appropriations committees. We look forward to working with Senator Blunt throughout his next term in office.

Congress returned to Washington November 14 for a brief lame duck session. At stake for soybean growers is the extension of the biodiesel tax credit, set to expire at the end of this year. The National Biodiesel Board has a fly-in scheduled for November 30 in which the industry will hit Capitol Hill to urge action on this issue. House Resolution 5240 which extends the credit, enjoys strong support from our Missouri delegation, with the recent addition of Congressman Sam Graves as a cosponsor. Thanks to all of you who have reached out to the House and

Senate on this issue. Please keep it up.

In other biodiesel-related news, soybean growers await EPA's finalization of the biodiesel volumes under the Renewable Fuel Standard as required by statute by November 30. The proposed rule, calling for 2.1 billion gallons of biomass-based diesel, is currently being reviewed by the White House's Office of Management and Budget. The Missouri Soybean Association and many other biodiesel industry advocates have called on EPA to raise the volume target for biodiesel to 2.5 billion gallons.

Congress will have to pass another short-term continuing resolution to extend government funding, as the current agreement expires December 9. Talks are shaping around a short-term deal that extends into next year to allow budget negotiations to begin with President-elect Trump. The Missouri Soybean Association remains hopeful that Congress can pass a Water Resources Development Bill (WRDA) before adjourning this year.

While Trump is being heralded as a positive change agent for rural America, it appears all but certain that soybean growers will have to wait for the Trans-Pacific Partnership to be renegotiated. Senate President Mitch McConnell has noted Trade Promotion Authority (TPP), which Congress has passed allowing the president to negotiate trade deals, extends to Trump, allowing him the authority to craft a new deal. Trump's plan is for the US to drop out of the TPP in his first 100 days in office and possibly the decades old NAFTA agreement as well if major changes are not reached. Trump is also pledging to get a decade long \$1 trillion infrastructure investment package through Congress during his first 100 days as well.

The legal battle over EPA's WOTUS rule continues, with action picking up at the 6th Circuit Court of Appeals during the first week of November. Opponents filed legal briefs that kicked off a new round of proceedings which will likely continue until late spring or early summer. ■

Note from Dan Engemann, Outgoing Director of Policy



I want to take this opportunity to let you know that it has been an honor to work for you, the hardworking soybean growers of our state as your director of policy.

This is my last issue of Missouri Soybean Farmer magazine writing to you in that role. I have accepted the position of Executive Director of the Coalition to Protect the Missouri River - a group that's focused on keeping the River vibrant for a variety of major water users. I will also be serving as a legislative aide to state Sen. Mike Cunningham (R-Marshfield).

Together, we have accomplished some significant things - like expanding grain hauling weight limits on state highways, the near completion of the Biodiesel Incentive Fund deferred payments and passage of a national standard on GMO labeling. The Missouri Soybean Association has made great strides in its grassroots advocacy program, fundraising efforts and relationships with legislators.

Again, thank you for your hard work. Don't ever let your voice go unheard in the public policy process.

--Dan



Xtendimax Approved

Monsanto's Xtendimax with Vapor Grip dicamba herbicide now has its EPA registration for use during the 2017 growing season, as well as some helpful changes to the label advocated for by the Missouri Soybean Association. However, the EPA approval only stands through the 2018 growing season.

November 9 was a big day for the Missouri Soybean Association. Not only was it the day after Election Day, November 9 also saw EPA approval on Monsanto's Xtendimax dicamba herbicide.

EPA issued final approval/registration for Monsanto's dicamba formulation Xtendimax with Vapor Grip for use on GM cotton and soybean crops. EPA issued a time-limited two year label, which will need to be reviewed and renewed in 2018, otherwise the label will expire after the 2018 growing season.

The herbicide and its label experienced a far longer than usual review process through EPA, and the Missouri Soybean Association stood with Missouri farmers in pushing the federal agency to finalize and announce its decision.

The Missouri Soybean Merchandising Council and soybean checkoff has likewise supported growers and their

agribusiness partners throughout this process, providing several educational workshops and discussions on this and similar herbicides throughout the summer and fall.

The EPA registration of the Xtendimax™ with Vapor Grip™ Technology for use on Xtend™ soybean varieties provides soybean growers another tool," said Greg Luce, Missouri Soybean Association and Merchandising Council director of research. "As with all pesticides, it is imperative that all label requirements are followed."

The final product label included several key changes the Missouri Soybean Association specifically commented on during the public notice of the draft label. Those changes should be helpful to producers, and included EPA removing the proposed tank mix prohibition, and allowing tank mixes so long as the mixed product is pre-approved and listed on the specific product website established as part of this process, [www.](http://www.xtendimaxapplicationrequirements.com)

xtendimaxapplicationrequirements.com. EPA also added language that would allow nozzles other than just the "Tee Jet TTI11004" nozzle, so long as the nozzle has been pre-approved and likewise listed on that product website. Further, EPA clarified that the 110 and/or 220 ft. buffer only applies downwind, rather than around the entire field perimeter specified in the proposal, as requested by the Missouri Soybean Association.

"It is important to note that this product was developed to have reduced volatility, but drift can occur with any product," Luce said. "To avoid off target issues with sensitive crops, all measures to avoid physical movement of the product must be followed. This new herbicide formulation allows farmers another mode of action in the fight to control problem weeds."

To learn more, visit www.xtendimaxapplicationrequirements.com or contact Greg Luce at gluce@mosoy.org. ■



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Fertility Fundamentals

In this time of ever-increasing input costs and challenging weather conditions, producers can't afford to overlook the importance of soil testing.

**By Jason Jenkins,
Mill Creek Communications**

Photos courtesy of the
University of Missouri

Without question, 2016 has been a productive year for Missouri's corn and soybean producers. Bins are bursting with record or near-record harvests thanks to ideal conditions during the growing season.

But Manjula Nathan doesn't just see storehouses brimming with bushels. Instead, she sees tons of nitrogen, phosphorus and potassium locked up in that grain, and she wants Missouri's soybean farmers to remember that they've just taken a big withdrawal from their soil's nutrient bank.

"When the yields are higher, you're removing more and more nutrients with every bushel of corn or beans," says the director of the University of Missouri Soil and Plant Testing Laboratory in Columbia. "Soil testing is an important management practice, a best practice. You can't drop that. You need to make

sure you test the soil and apply what you need for next year."

Based on early November estimates from the USDA National Agricultural Statistics Service, nearly 586 million bushels of corn and 278 million bushels of soybeans will be harvested in Missouri this year. That would make the corn crop the second largest on record behind only 2014, and the soybean crop would be the largest ever — averaging a record 50 bushels per acre.

With that level of productivity in the Show-Me State, it's crucial that producers recognize that maintenance and buildup fertilizer applications may need to be adjusted before planting the 2017 crop.

"There are tables that estimate pounds of nutrients removed on a per-bushel basis, but after such a big crop, it's a



good idea to take a soil test and really see where you're at," says Greg Luce, director of research for the Missouri Soybean Association and Merchandising Council. "It's a great time at the end of the season to take samples."

Nathan, whose lab tests 25,000 to 35,000 field crop soil samples annually, agrees. Not only does fall testing provide a snapshot of the soil after harvest, but it maximizes the window to make fertilizer applications before planting time arrives again. It also allows a

“If a nutrient deficiency is diagnosed in time, it can be corrected and yield reductions can be avoided.”

-Manjula Nathan

grower to take maximum advantage of price reductions in those amendments when they occur.

"Potassium fertilizer prices have gone down lately, so this is a good year to build up potassium if your field needs it," she notes.

About every three years, MU soil-testing recommendations suggest that a producer take one sample for every 20

acres. This sample should be a composite of 15 subsamples taken randomly at a depth of 6 to 7 inches from across the sample area. The sample needs to be mixed well to be representative of the soil conditions.

"Our recommendations are only as good as the samples we receive," Nathan says. "Different parts of a field, such as low-lying areas or those that are eroded, should be sampled separately. No one knows those differences better than the farmer."

The basic soil test will provide data on the essential nutrients of nitrogen, phosphorus and potassium, along with a lime recommendation for managing the soil's pH, which affects nutrient availability. Soybeans prefer a pH in the range of 6.0 to 7.0, so getting a fall soil test allows for timely application of lime, if needed.

Other nutrients also play key roles in varying importance to different crops, Luce explains. While corn is responsive to zinc, soybeans seem to respond most to manganese and boron.

"Whatever crop you're going to plant, it's a good idea to occasionally get a micronutrient analysis," he says. "You've submitted the sample anyway, and it doesn't cost much more to do it."

Nathan likens a crop's nutrient requirements to the staves in a barrel. Just as a barrel will only fill with water to the level of the lowest stave, a crop limited by deficient nutrients won't reach its full potential.

"The farmer needs to figure out the limiting nutrient and make it optimally available," she says.

Although making amendments to the soil is best before the growing season starts, MU also offers plant analysis as a diagnostic tool for soybean growers.

Find a Soil Testing Shop

Want to ensure your soil-testing service makes the grade? The Missouri Soil Testing Association (MSTA) accredits soil-testing labs both in and out of state to assure that results agree with allowable statistical limits. Soil test results from MSTA-approved labs will be accepted by the USDA Farm Service Agency.

Currently, four soil-testing labs have MSTA accreditation through June 2017:

Custom Laboratory Inc.
204 C St.
Golden City, MO 64748
Phone: 417-537-8337
Fax: 417-537-8337

Delta Soil Testing Lab
University of Missouri
P.O. Box 160
Portageville, MO 63873
Phone: 573-379-5431
Fax: 573-379-3383
<http://soilplantlab.missouri.edu/soil/>

MU Soil and Plant Testing Lab
University of Missouri
23 Mumford Hall
Columbia, MO 65211
Phone: 573-882-3250
Fax: 573-884-4288
<http://soilplantlab.missouri.edu/soil/>

Perry Agricultural Lab
P.O. Box 418
State Highway 54 East
Bowling Green, MO 63334
Phone: 573-324-2931
Fax: 573-324-5558
www.perryaglab.com

For a complete list of accredited labs, visit <http://bit.ly/MSTAlabs>.



The Soils Laboratory at the Fisher Delta Research Center takes in hundreds of soil samples each year from farmers, landowners and gardeners. Staff at the Center use a simple, yet precise method to fill the testing tubes in order to control compaction and disturbance of the soil physical properties.

“We receive quite a few soybean plant samples submitted at different growth stages to diagnose nutrient-related problems of either deficiency or toxicity,” Nathan says. “If a nutrient deficiency is diagnosed in time, it can be corrected and yield reductions can be avoided.”

Nutrient management has become even more advanced in recent years thanks to precision agriculture. Programs such as MFA Incorporated’s Nutri-Track are designed to manage, maintain and track fertility levels across operations by combining yield monitoring and GPS-based soil testing.

“This has led to ever-more intensive soil sampling on 2.5-acre and even 1-acre grids,” Nathan explains. “They’re monitoring carefully and trying to build more uniformity. By increasing inputs where they’re needed and reducing them where they’re not, a farmer can maximize yield without applying unnecessary nutrients.”

Nutrient deficiencies aren’t the only soil-related issue for which soybean producers should test. Soybean cyst nematode (SCN) remains a yield-reducing threat.

“We’ve been using the same source of resistance for many years, and it’s becoming less resistant than it initially was,” Luce says. “It’s something to keep an eye on. If a farmer is taking on new ground he’s not familiar with, it wouldn’t be a bad idea to have an SCN sample taken.”

At a time when low commodity prices remain on the foreseeable horizon, taking steps to maximize fertility and prevent disease will remain crucial to ensuring profitability.

“Soil testing costs a little bit of money. My lab charges \$10 per sample,” Nathan says. “For the return you get, it’s worth the investment.”

Give Your Fields A Physical

Soil is more than a medium for growing crops. It’s a “living” thing, full of interactions and complexities that go beyond the production grain and forage. Healthy soil absorbs and filters water, accumulates organic matter and stores and releases nutrients for both plants and microorganisms that drive other soil functions.

While traditional soil-testing services estimate fertility and provide recommendations for plant nutrient needs, there’s been growing interest in taking a more holistic approach to the study of soils. This approach not only characterizes soils on their physical and chemical properties, but it also addresses the biological component.

“You might call it a soil health checkup,” says Greg Luce, director of research for the Missouri Soybean Association and Merchandising Council. “There’s a center at Mizzou geared up for it. Some of the ideas that used to be popular are coming back around again.”

The University of Missouri Soil Health Assessment Center, which has been in existence since 1985 and is now located at South Farm, is responding to this growing interest by offering new analyses to its existing line of soil tests. These analyses measure key indicators of soil health just as physicians measure body temperature and blood pressure to evaluate human health.

A soil health checkup, in addition to a soil fertility test, allows producers to assess their current management, determine their required inputs and plan strategies for improvements. Key soil health indicators include potentially mineralizable nitrogen, optimum pH, aggregate stability, bulk density, active carbon and phospholipid fatty acid analysis, which estimates the groups of microorganisms in the soil as indicators of important, sustainable soil functions.

To learn more about soil health assessment and the center’s services, contact lab supervisor Russell Dresbach at (573) 882-3704 or visit www.cafnr.missouri.edu/soil-health.



HOLDING POWER

Properly managing on-farm grain storage can give soybean farmers advantages in marketing their crop.

**By Allison Jenkins,
Mill Creek Communications**

No room in the bin. It's a good problem to have, admits northeast Missouri grain farmer Doug Thomas as he reflects on this year's harvest.

"This is our biggest soybean crop by far," says the Brashear producer. "We have some on-farm storage, but not enough this year."

Thomas is not alone. Even though Missouri on-farm grain storage capacity has increased during the past few years to more than 520 million bushels, a record 2016 crop is squeezing that space. Based on early November reports from the USDA National Agricultural Statistics Service, the state's soybean production is forecast at 278 million bushels, up 53 percent from 2015 and the highest ever for Missouri. Yields also are expected to

set a record, averaging 50 bushels per acre, a 9.5-bushel increase from 2015. Pair this sizable soybean crop with Missouri's near-record corn production, and grain bins are filled to the brim across the state.

However, while yields are impressive, market prices are not. That means maintaining quality of stored grain is more important than ever, says Samantha Scantlebury of IntelliFarms, a grain storage technology company headquartered in Archie, Missouri.

"On-farm storage can be one of your most valuable tools," Scantlebury says. "If you're able to utilize that bin to hold your grain for longer and keep it in good condition, you can take advantage of more favorable marketing windows."

Storage may improve harvest efficiency, provide the ability to dry grain, help capture higher cash basis later in the season or create opportunities to market to local users of grain, such as ethanol plants, soybean processors or livestock operations.

On average, a crop is stored for three to six months as producers look for opportunities to make more money. Improper storage, however, can cost them money through quality deductions and losses, says Bill Jackson, general manager of AGRIServices of Brunswick, LLC, a wholesale supplier and marketer of fertilizer and a full-service agriculture retailer, grain elevator and feed supplier.

Moisture is a key to grain quality, says Jackson, and the elevator wants soybeans to be under 13 percent moisture and corn under 15.5 percent for long-term storage. If it doesn't meet those standards, marketed grain can be docked for moisture content and other factors such as test weight, foreign material, damage and sour, moldy or musty issues.

The good news? As a whole, Missouri producers don't seem to have many of these problems. They do a good job in storing their grain, Jackson says.

"Very seldom do we see problems from on-farm storage," he says. "The guys who mess it up only do it once. Usually, the only mistakes that an elevator will see is someone who is just getting into the business and storing for the first time. Most farmers have been doing this long enough and have enough sense to know that they have a valuable commodity in there, and they take care of it."

Just as today's farmers have precision technology to help them maximize grain production, they also have sophisticated options to help them optimize the crop after harvest. One such product is IntelliFarms' BinManager, an automated monitoring system that helps take the guesswork out of grain bin management.



One on-farm technology package for grain storage is the BinManager system from Intellifarms. With that system, information is communicated wirelessly through the internet-based system and can be monitored and controlled from a computer or mobile device, giving users real-time conditions of the grain along with historical data and progress toward their goals.

"BinManager was the first to measure both temperature and moisture simultaneously in the bin," Scantlebury explains. "The farmer is able to get a comprehensive picture of what the grain is doing at different points across the mass. There's such a science to grain storage management, and technology can help farmers be precise and, in turn, successful."

Thomas, who raises some 5,000 acres of soybeans and corn, has been using BinManager since it was introduced in 2008 and says the technology not only saves him time and money, but it also gives him "peace of mind." Even though he says he's "never really lost grain" to storage issues, the Missouri Soybean Association board member isn't taking any chances, especially with yields increasing and prices decreasing.

"When we started storing larger

quantities of grain, we needed a better way to manage it," says Thomas. "The main thing is we don't want to over-dry our grain. BinManager allows us to see what we have going on inside the bin and helps us make decisions about when it's ready to sell. We have the technology on 60 to 70 percent of our systems now, and we like the quality of grain we get with it."

Traditional grain storage practices put producers at the mercy of Mother Nature, Scantlebury says. Farmers fill their bins, flip on the fans, run them for a few weeks and then turn them on and off intermittently throughout the winter. They have to trust their own judgment about outside weather conditions and the progress of the crop inside the bin.

"When fans are running constantly over a certain window of time, there are times that the air being

pushed through the grain may even be counterproductive to your grain-drying goals,” Scantlebury explains. “BinManager takes into account the actual conditions of the stored grain. This helps determine when the outside air meets the right parameters and is productive toward drying goals.”

BinManager equipment consists of drop-down moisture and temperature cables that measure every four feet of grain, a master controller that runs the fans and heaters as needed, a sensor that measures temperature and humidity of the air right before it circulates through the bin and a weather station that provides an accurate reading of outside conditions.

Information is communicated wirelessly through the internet-based system and can be monitored and controlled from a computer or mobile device, giving users real-time conditions of the grain along with historical data and progress toward their goals. Farmers receive alert notifications when the system detects a problem such as a power failure or equipment malfunction.

“We’re not centrally located, so this allows us to monitor all our bins from our phone or iPad instead of having to go around and turn fans on and off manually,” Thomas says, admitting that surrendering control to technology has taken some adjustment. “Your fans will be running at times that you didn’t think they would, and there are times you’d swear they should be on due to moisture in the air, but you have to trust the system.”

Producers specify the grain type in the bin and pick the target moisture or temperature or both through their online BinManager account. The technology can even



Bumper crops can create storage challenges as farmers hold their grain until market prices improve.

adjust itself according to seed variety, says Scantlebury.

“We’ve really started to understand and value the characteristic differences from variety to variety,” she explains. “They perform differently in the field, so they’re going to perform differently in storage, too. We’ve begun to factor that in and even built the IntelliFarms University Grain Lab on site here. We ask our customers to send a sample of their grain, and we put that through a series of tests to simulate the experience of drying and cooling. We’re able to plug that data into the algorithm that runs the manager.”

While every storage situation is different, Scantlebury says a BinManager system for a 42-foot to 48-foot diameter grain bin is around \$10,000. That cost can be recouped in one to two years, she adds.

In a soybean case study by IntelliFarms, overdried bean loss was reduced from nearly \$5,000 to \$510 and fan run cost from about \$2,000 to \$1,000 for a more than \$18,000 return on investment over five years (based on a market price of \$11 per bushel).



Doug Thomas

In addition to quality and energy savings, the BinManager system can protect against spoilage and insect damage, rehydrate an overdry

harvest, minimize labor costs and improve safety by eliminating the need to manually probe the grain or enter the bin for crusting or blockage.

“We’re learning that we can harvest quicker and put a higher-moisture grain in the bin instead of waiting for it to dry in the field. That helps us avoid field loss,” Thomas says.

“You don’t have to crawl into your bins, so that’s a benefit from a safety standpoint. And you don’t have to walk them all the time, so it saves you there. You can pick up your phone and see what you have going on from anywhere, anytime,” he added.

While precision grain storage is making a difference individually for farmers like Thomas, Scantlebury sees a bigger-picture benefit to the technology.

“We’re trying to feed 9 billion people, and there’s never been more of a need and a demand for what our farmers have to produce,” she says. “We need to help them. Technology offers a way to bring value and profit back to the farm.”

For more information on IntelliFarms’ BinManager technology, visit intellifarms.com, call (855) 206-5612 or email sales@intellifarms.com. The University of Missouri Cooperative Extension Service also offers an online resource with basics of grain storage, drying, management and care at extension.missouri.edu/main/spotlight/grain.aspx. ■

HONOR WALL

Good news from those working on behalf of Missouri soybean farmers

Missouri's New United Soybean Board Directors

Missouri has two new farmer leaders appointed to lead national soybean checkoff efforts on the United Soybean Board (USB). Neal Bredehoeft, of Alma, and Meagan Kaiser, of Bowling Green, were appointed to three-year terms by US Agriculture Secretary Tom Vilsack. They'll be installed during USB's December meeting.

"It is a privilege and an incredible responsibility to represent soybean farmers and producers' investments in the checkoff program," said Meagan Kaiser, new USB director from Bowling Green. "I look forward to building upon efforts to ensure farmers have the technology and infrastructure necessary to not only produce a crop and put it in the hands of consumers, but to also cement U.S. farmers' competitiveness in the global marketplace for soybeans and soy products."

Bredehoeft and Kaiser are two of the 15 new directors Vilsack appointed to the board. Vilsack also renewed the appointments of 24 current board members to the 73-member United Soybean Board. The new and renewing directors will be officially seated during the December 9 meeting of the United Soybean Board in St. Louis.

Bredehoeft and Kaiser were nominated by the Missouri Soybean Merchandising Council, the state organization overseeing soybean farmers' checkoff dollars. They join Todd Gibson of Norborne, appointed in 2010, and George (Lewis) Rone of Portageville, who was appointed in 2014.

Long-time soybean farmer leader Richard Fordyce of Bethany will retire from the United Soybean Board this year. He has served on the USB board of directors since 2006. Fordyce is also the current director of the Missouri Department of Agriculture.

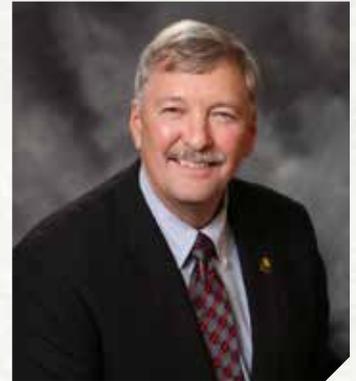
"Prioritizing research and developing markets for our soybeans has positioned the Midwest and US to succeed," said Neal Bredehoeft, new USB director from Alma. "Continuing to invest in programs that benefit the bottom line for growers, from breeding and genetics efforts to applied research into soil health and herbicide resistance, and then ensuring the results of that work are available to our soybean farmers, is key to the long-term strength of our industry."

In addition to their forthcoming service on the United Soybean Board, Bredehoeft and Kaiser are key figures in agriculture and in their respective communities. Both are active in agricultural organizations and advocacy at the state and national levels.

Bredehoeft farms with his brothers and nephew in Lafayette and Saline counties, and serves on the Santa Fe AgriLeaders board and the University of Missouri Review Commission. He previously served on the Lafayette County Farm Bureau board and the American Soybean Association board of directors, including as president of the American Soybean Association. He also dedicated 15 years of service to the Santa Fe School District School Board.

Kaiser farms with her husband Marc and his family near Carrollton, Missouri and is the chief operating officer for Perry Agricultural Labs in Bowling Green. She is a member of the local Farm Bureau board, president of the Rotary Club of Bowling Green and an active member of the Pike County Young Farmers and Ranchers organization. Kaiser is also the former executive director of the Upper Mississippi, Illinois and Missouri Rivers Association and a graduate of Missouri's Agricultural Leadership of Tomorrow (ALOT) program.

The Missouri Soybean Merchandising Council is a statewide, farmer-led organization working to improve opportunities for Missouri soybean farmers through a combination of research, outreach, education and market development efforts through the soybean checkoff. To learn more, visit the Missouri Soybean Merchandising Council online at mosoy.org.



Neal Bredehoeft



Meagan Kaiser

Rehagen Named NBB CEO

The National Biodiesel Board (NBB) recently named a new CEO. At the end of October, the board named Donnell Rehagen as the trade group's chief executive. Rehagen had been interim CEO since June after serving 12 years as NBB's chief operating officer.

"I have a passion for this industry," Rehagen said. "I'm proud to be a part of the team that has helped lead biodiesel's growth to become the first advanced biofuel to reach full commercialization, but I also recognize the challenges we face."



Donnell Rehagen

As COO, Rehagen managed the implementation and execution of NBB's budget and the day-to-day responsibility of managing the organization's program managers, staff and contractors. Additionally, Rehagen has led the annual National Biodiesel Conference & Expo, NBB's signature event that attracts thousands of enthusiasts to learn more about biodiesel and for industry professionals to network with their peers.

Prior to joining NBB in 2004, Rehagen was the fleet administrator for the Missouri Department of Transportation where he was responsible for all aspects of the department's \$400 million fleet including implementation of their biodiesel (B20) use program.

Donnell has a Masters in Public Administration from the University of Missouri and a Bachelor's Degree in Computer Information Systems from Southwest Missouri State University. He was born and raised in Jefferson City, where he and his wife Shelly have raised four children of their own. They are also the proud grandparents of two young grandsons.

Learn more about NBB online at biodiesel.org.

Congratulations

The Missouri Soybean Association and Merchandising Council would like to extend special congratulations to Ms. Ebby Neuner of Jefferson City. Ebby has completed more than 25 years with the Missouri Soybean Association and its partner organizations. Prior to joining the Soybean team, she worked for the State of Missouri. Congratulations, Ebby, and thank you for your service!



Ebby Neuner

Congratulations are also in order for Missouri Soybean Association members Chad and Monica McCollough of Burlington Junction. They were selected to represent Missouri as members of the American Soybean Association and DuPont



Chad and Monica McCollough with their sons

Young Leaders Program. This program is designed to help growers strengthen their leadership skills while networking with other farm couples from across the country. Phase I of the training was held at the DuPont Pioneer headquarters in Johnston, Iowa. The program continues February 28 - March 3, 2017 in San Antonio, Texas, with Phase II held in conjunction with the annual Commodity Classic Convention and Trade Show.

ALOT Class XVII

Missouri's Agricultural Leadership of Tomorrow program (ALOT) recently introduced its seventeenth class of growing leaders representing the breadth of agriculture in the Show-Me State. Up and coming leaders selected for the program include:

Reagan Bluel of Monett, Cody Brock of Norborne, Ryan Brooks of Concordia, Darryl Chatman of Foristell, Bradley Deeken of Linn, Curtis Delgman of Frankford, Bruce Drecktrah of Jefferson City, Sami Jo Freeman of Columbia, Acacia Hagan of Monroe City, Jeremy Haley of Columbia, Michael Heaton of Macon, Mark Langworthy of Columbia, Emily LeRoy of Hermann, Douglas Ludwig of Jackson, Kade McBroom of Qulin, Thomas Mershon of Leawood, Kansas, Joshua Poynor of Strafford, Dylan Rosier of Mound City, Pamela Stahlke of Odessa, Jeremy Valentine of Columbia, Julie Weathers-Kinkead of Cape Girardeau, Robin Wenneker of Columbia, Brett Wessler of Kansas City, James Woolard of Cape Girardeau, Matthew Wright of Emden and Danny Young of Green Ridge.

The class members will begin their program in early 2017 with a series of regional sessions across Missouri. They'll also visit Washington D.C. In 2018, the class will wrap up their experience with an international trip, to a destination selected by the ALOT board of directors. Previous groups have explored Vietnam, China, the Ukraine and Europe. For more information, email executive director Kristin Perry at alot@onemain.com.

They Started at Soybean

In addition to investing soybean checkoff dollars in research, promotion and consumer education related to soybeans, the Missouri Soybean Merchandising Council also invests in the future of agriculture in Missouri with a variety of internship opportunities.

By Adam Kirby

Laura Bolte, a 2007 Agribusiness Management graduate from the University of Missouri, never would have guessed her professional future would largely revolve around row crops. While growing up in Franklin County, Bolte was far more interested in cattle than soybeans or corn. A college internship shifted that perspective.

She interned with the Missouri Soybean Association and Merchandising Council in the summer of 2006. While at Soybean, Bolte focused on public relations and communications.

Upon arriving at Mizzou, Bolte was convinced she was destined to work in journalism or public relations, and contemplated majoring in agricultural sciences and journalism. However, she stuck with agribusiness management which soon worked out in her favor.

While searching for an internship on the CAFNR Career Services website, Bolte stumbled across the Missouri Soybean Association and Merchandising Council internship position listing. She applied, and the following summer she was one of the newest members of the Missouri Soybean team.

Although her main focus was on communications and public relations, Bolte's internship duties were more than just those areas. Her projects included

planning the summer golf tournament, interviewing those in the soybean industry and featuring them in Missouri Soybean Farmer magazine, many field days, biodiesel outreach, and grower relations. Bolte was also able to attend the groundbreaking for the Paseo biodiesel plant in Kansas City.

"What I loved most about my time at soybean was the ability to interact with people in agriculture from all across the state," Bolte said. "I was able to develop a passion talking to these farmers that I never imagined I would have."

Bolte recalls how working at Soybean was her first experience with row crops, and how much it changed her life. "I was able to develop my abilities and communication skills, which has helped me immensely in my career already."

After college, Bolte accepted a job offer from Bunge. She went through their internal grain management training program, spending time at several Bunge locations across the Midwest. Most recently, Bolte has been based out of Cairo, Illinois where she works in grain merchandising and management. She is building a career in Bunge and has worked for the company since her graduation from the University of Missouri.

Bolte credits her time with the Missouri Soybean Association and Merchandising Council for immersing her in the grain industry, and changing her perspective on her career. She never imagined she would be working with grain merchandising, but she loves every minute of it, she said.

Currently residing in Cape Girardeau Missouri, Bolte loves spending time with her family and friends in any free time she can find. ■



Laura Bolte

Growing up in rural central Missouri, Cody Jones always knew he wanted a career in agriculture, but never knew where. A 2011 graduate of Fulton High School, Jones learned of his passion for agriculture from his father and grandfather. He has been surrounded by production agriculture all of his life through the family farm, which includes soybeans and corn, as well as an angus cattle operation.

Showing cattle, working on the farm and eventually serving as a Missouri FFA State Officer, Jones was deeply immersed in agriculture. He went on to attend the University of Missouri. He graduated in 2015 with a bachelor of science degree in agribusiness management.

While interning for the Missouri House of Representatives, Jones caught wind of an opportunity to intern with Missouri Soybean and quickly took the initiative to apply. In the summer of 2014 he was selected to become an intern, focusing on grower and member relations.

Throughout his summer at Soybean, Jones traveled across the state meeting with board members on their various properties discussing agriculture in their respective areas. Jones also met with grain elevators discussing the soy industry and performance of Missouri Soybean.

“One of the greatest experiences I had was the ability to travel independently,” said Jones. “I was able to make a connection back to Missouri farmers across the state by meeting members.”



Cody Jones during his time in Ghana (top), and at home in Missouri (bottom).

Jones explained how that summer he learned to work as a team with the employees in the office, but also how to work on his own, shaping his future. While interning at Soybean, Jones also worked educational programs surrounding Missouri’s farming rights amendment and other tasks “always keeping it interesting” in his words.

One of those other tasks was supporting a partnership between Missouri Soybean and Missouri Corn on the MR 340 canoe race - raising awareness of the relationship between agriculture and our state’s river system.

Following graduation from the University of Missouri, Jones accepted a position at AgriCorps. His specific program included moving to Ghana, Africa a year.

While living in Ghana, Jones taught agriculture education to middle and high school students. He also hosted trainings for teachers, sharing his knowledge of agriculture with them, as well as new teaching methods they could implement with their students.

“Getting experience speaking to others in my internship greatly influenced my actions in Ghana. I was better able to hold conversations with others, and become more flexible in unknown situations,” he said.

Upon returning home from Ghana, Jones decided to return to the family farm, continuing the operation with his father and grandfather. In the near future, Jones hopes to expand and diversify the family farm operation, staying there long-term. ■

Note: This is the last regular column for “They Started at Soybean.” Beginning in 2017, look for profiles of Missouri farmers in this space. We’ll still highlight former interns of the Missouri Soybean Association and Merchandising Council from time to time, but are shifting the focus a bit. If you know someone who should be featured, please let us know by emailing communications director Christine Tew at ctew@mosoy.org. Thanks!



Upcoming Events & Activities

- December 2-3** *Missouri Livestock Symposium - Kirksville*
- December 4-6** *Missouri Farm Bureau Annual Meeting*
- December 14-16** *Missouri Governor's Conference on Agriculture - Osage Beach*
- December 15** *University of Missouri Crop Management Conference - Columbia*
- December 15** *Missouri Agribusiness Association MO-AG Winter Convention - Columbia*
- January 6-8** *Missouri Cattlemens Convention - Osage Beach*
- January 9** *"Profit from Pods" Soybean Meeting - Columbia*
- January 9** *"Profit from Pods" Soybean Meeting - Chillicothe*
- January 10** *"Profit from Pods" Meeting - St. Joseph*
- January 16-18** *National Biodiesel Board Annual Meeting + Conference - San Diego, CA*
- January 18** *Extension Soybean Meeting - Sikeston*
- January 23** *"Profit from Pods" Soybean Meeting - Hannibal*
- January 23** *"Profit from Pods" Soybean Meeting - Chesterfield*
- January 31** *Missouri Soybean Association Annual Meeting*
- February 14** *"Profit from Pods" Soybean Meeting - Sikeston*
- February 15** *"Profit from Pods" Soybean Meeting - Springfield*
- March 2-4** *Commodity Classic - San Antonio, TX*
- April 5** *Missouri Soybean Center Symposium - Columbia*

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PROFIT FROM PODS

A Soybean Short Course with Chip Flory

Join Farm Journal Media and the Missouri Soybean Merchandising Council as they present seven informational meetings at a location near you! With the recent downturn in soybeans, gain valuable insight with Chip Flory, Host of "Market Rally," as he discusses timely, important marketing and risk management strategies that will allow you to gain profit from your pods in 2017.



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TOP 5 REASONS TO ATTEND

- Soybean Industry Update
- Producer Panel Discussion
- Marketing & Risk Management with Chip Flory
- Question & Answer Session
- Meal Included with Registration

Attendee Ticket Price: \$20

MONDAY JAN. 9
Columbia—Breakfast
Chillicothe—Dinner

TUESDAY JAN. 10
St. Joseph—Breakfast

MONDAY JAN. 23
Hannibal—Breakfast
Chesterfield—Dinner

TUESDAY FEB. 14
Sikeston—Breakfast

WEDNESDAY FEB. 15
Springfield—Breakfast

To view detailed agendas and register, call (877) 482-7203
or visit www.regonline.com/ProfitFromPods.

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