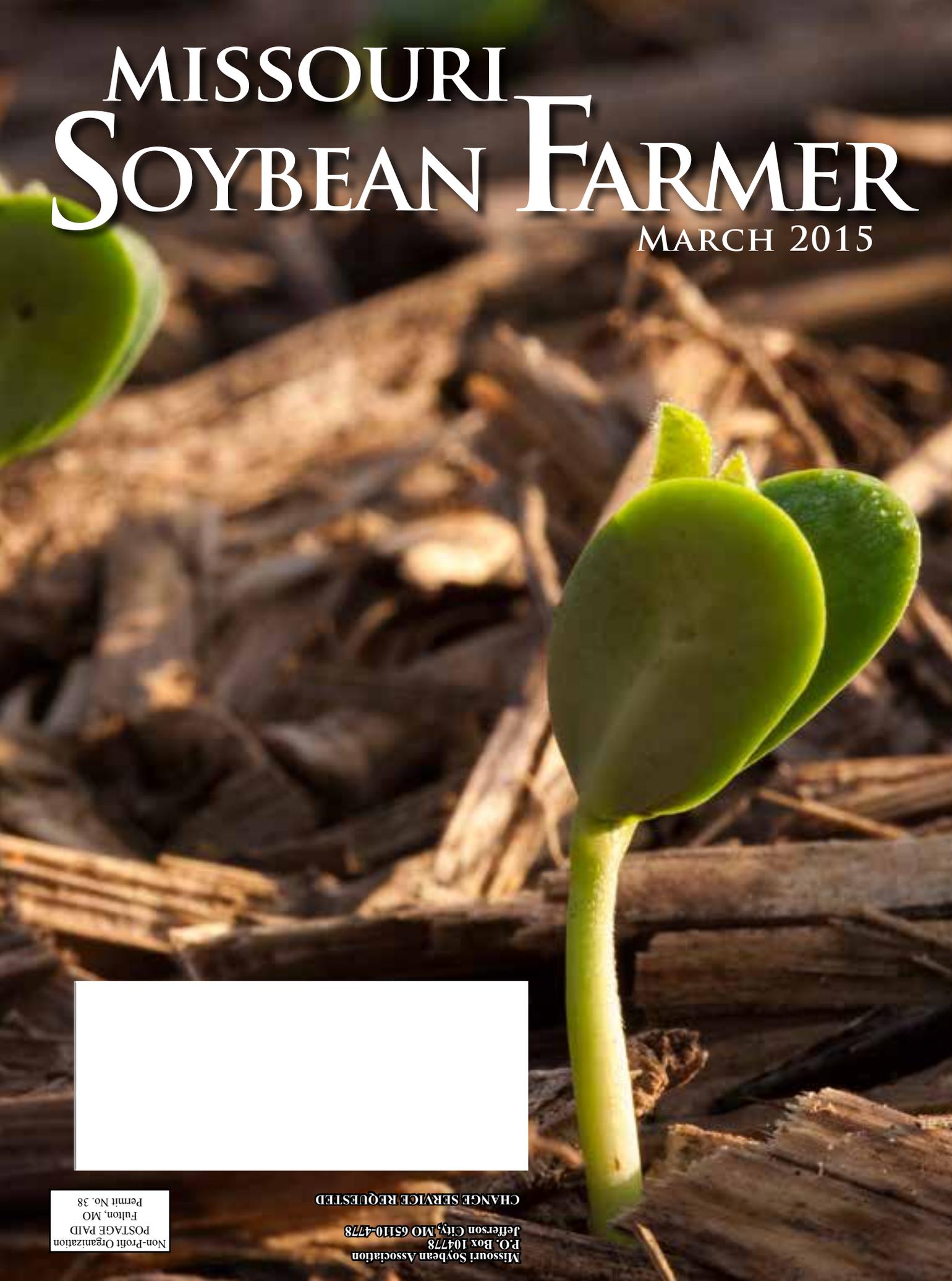


# MISSOURI SOYBEAN FARMER

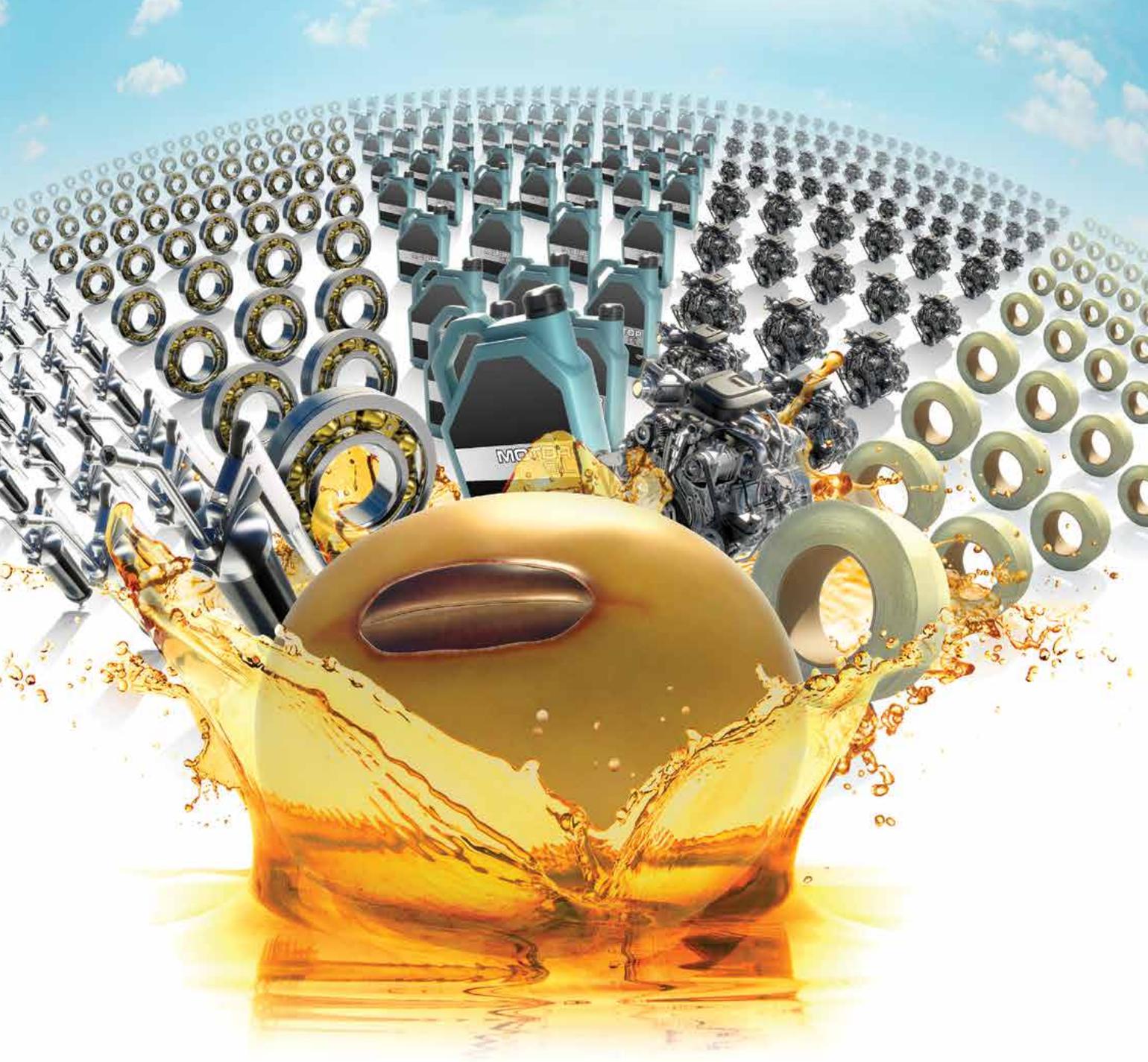
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**HIGH OLEIC**  
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# MISSOURI SOYBEAN FARMER



MARCH 2015 | VOLUME 19 | ISSUE 2

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High oleic soybeans are getting a lot of attention. Here's what you need to know about high oleic varieties for Missouri.



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Farming is widely known as one of the more dangerous occupations in the US, and tractors are the implements most often involved in fatal accidents on the farm. Get some tips to stay safer before you head to the field.



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Missouri is the Show-Me State, and Missourians have long been known for their innovative spirit. Learn more about one man's hands-on style for making a difference for soybean farmers.



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We hear so much about the importance of sharing our story of living and working on the farm, now see how one group of women is reaching out.





# FROM THE FIELD

*Notes from Missouri Soybeans' leadership team*

## MSA Board Members:

- Steve Alexander**, Hopkins
- Neal Bredehoeft**, Alma
- Peter Rost Jr.**, New Madrid
- Kelly Forck**, Jefferson City
- C. Brooks Hurst**, Tarkio
- T. Brooks Hurst**, Tarkio
- John Kleiboeker**, Stotts City
- Matt McCrate**, Cape Girardeau
- Tom Raffety**, Wyatt
- E.L. Reed**, Chillicothe
- Ron Russell**, Richmond
- Greg Sharpe**, Ewing
- Warren Stemme**, Chesterfield
- Larry Strobel**, Bell City
- Doug Thomas**, Brashear
- Matt Wright**, Emden

## MSMC Board Members:

- Robert Alpers**, Prairie Home
- Cecil DeMott**, Rock Port
- Harold Gloe**, Hermann
- Tim Gottman**, Monroe City
- Patrick Hobbs**, Dudley
- John Kelley**, Faucett
- Bob Littleton**, Dalton
- David Lueck**, Alma
- Baughn Merideth**, Caruthersville
- Lewis Rone**, Portageville
- Will Spargo**, Naylor
- Jim Underhill**, Palmyra
- Rex Wood**, Meadville

## USB Board Members:

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

## ASA Board Members:

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

**J**ust about every time we make a decision, we have to balance what we know with those things we don't. Whether we're looking at which variety to plant for the coming season and hoping Mother Nature cooperates, or setting marketing plans for the year and making what is effectively our best guess at what prices will do (other than that they'll change, of course).



The same holds true when we're looking at policy. We gather as much information as we can, weigh what we know against what we don't, what we can control against what we can't, and then make the best decision possible – ideally making the most positive impact for Missouri soybean farmers and all of agriculture.

In some situations, the answer is easy – going to the Capitol to talk about repayment of the Biodiesel Producer Incentive Fund, for example. It's important that we ensure our elected officials make good on those commitments to our growing biodiesel plants. In other decisions, like lifting restrictions on trade with Cuba, there are many other considerations that come into the conversation. Exporting our soybeans, meal and oil, to other countries raises a host of other questions, including others' acceptance of GMOs.

The universal truth in all this is that to gather the information necessary to make the best decisions possible, we have to keep the lines of communication open. Your Association needs to hear from you. Please join us at meetings in your area, for the annual meeting and other activities – call and email too. We look forward to hearing what's on your mind.

**Tom Raffety**  
Missouri Soybean Association President

**T**here's no more optimistic time to be a farmer than spring. Planting season is full of hope and high expectations. We're excited for the first warm days, itching to get into the fields with freshly calibrated equipment and to see how the new varieties we selected over the last few months do once in the ground. It can be tough to wait, especially when planting season comes right after all our national meetings and events. We've seen our partners from other states, heard the latest from our researchers and gotten updates on promotion and education efforts. We're ready to go, excited and bright eyed for what's ahead.



For me, it's especially great to see the strides we're making through the checkoff put into practice – from flood tolerant and higher protein varieties to the latest in soil health.

In February, we also heard about 33 new soy-based products that the checkoff helped bring to consumers, from the boxes and instructions that come with some cell phones to noise-reducing foams for household flooring and consumer vehicles. Many of those new products were developed by companies we know well, including Bunge and Sloae in the St. Louis area. Other Missouri companies, from Ecotec and SMD to Express Chem, BioSpan and Schaeffer Manufacturing, brought us new soy-based products for the Soybean Board's Soy Products Guide too.

Each of those new products means a new or expanded use for our soybeans, and as we look ahead, those new uses mean additional support, and demand, for Missouri-grown soybeans. It's hard to beat news like that.

**David Lueck**  
Missouri Soybean Merchandising Council Chairman



# LETTER FROM THE EXECUTIVE DIRECTOR

A year may never have passed so fast. April 21 marks one year since the soybean farmers of our state entrusted me with their Association, Merchandising Council and the Mid-America Research and Development Foundation. As your staff, we talk about moving quickly, being both decisive and engaged, while working continuously to raise the bar for Missouri soybean farmers, as well as the men and women working in processing, transporting and marketing our soybeans to consumers. The last year has been more than that.

In some ways, it has been like a child – occupying my thoughts, worrying me at all hours, and hitting milestones. It's those milestones that directly affect our soybean farmers, growing markets and adding to the bottom line, that make me more than proud.

Milestones like:

- Reconnecting with our members at events from Sikeston to St. Joe, raising the profile of our regional meetings and bringing back the Missouri Soybean Association's Annual Meeting.
- Setting a strategic plan for soybean research and investing growers' checkoff dollars to make the greatest impact now and for the future of soybean production, processing and marketing in Missouri.
- Building relationships with our industry partners, our elected officials and across our communities, knowing that we're stronger together. Partnering with our biodiesel plants and our fellow agriculture organizations to host events and raise awareness means that our growers benefit now and well into the future.
- Putting the Association and Merchandising Council on solid financial footing by bringing our investments under unified management, updating our technology and partnering with an outside accounting group to provide additional oversight. We're also working closely with our partners at the United Soybean Board and USDA to ensure Missouri stays in good standing with the soybean checkoff and our fellow states.



**Gary Wheeler with his family - his wife, Liz, and their children, Eli and Ella.**

The changes we've made over the last year wouldn't have been possible without the commitment from you, our growers. Thank you for your feedback along the way, your staff and I could not have done it alone. Not that we're done.

Some of you may have heard me refer to myself as the 'trashman' over the last 11 months – clearing out and cleaning up the way we communicate how the Missouri Soybeans team works for our growers. On paper, our goal is to improve the bottom line of the Missouri soybean farmer, however, at the end of the day, the most important thing for me is that we are transparent and earn your trust.

As we continue to grow in that mission, we'll find new challenges. We may not always agree, but it's important that we have the dialogue. ...and I'm certainly hoping we don't find too many dirty diapers in the process. But if we do, we'll get through it. The future is bright. There are great things happening for Missouri soybean farmers, the soy value chain and all of agriculture. Thank you for your support along the way.

I look forward to hearing from you.

Best regards,

Gary Wheeler  
Executive Director / CEO  
Missouri Soybean Association  
Missouri Soybean Merchandising Council



# QUALITY WHERE IT COUNTS

## *Results are in for Missouri's annual Soybean Quality Contest*

Photo courtesy of the University of Missouri College of Agriculture, Food & Natural Resources

By Christine Tew

**R**esults from the Missouri Soybean Association's annual soybean quality competition are in, with soybeans grown across Missouri coming in well above average for protein and oil content.

"Missouri soybean farmers are known for growing high quality soybeans, and this year was no exception. In addition to raising a bumper crop, our farmers' dedication and outstanding skills come through in their soybeans at market time," says Gary Wheeler, executive director and CEO for the Missouri Soybean Association and Missouri Soybean Merchandising Council. "All participants in this year's quality contest should be commended for a job well done."

### **Soybean Quality Contest Winners**

	<b>Entry</b>	<b>Community</b>	<b>County</b>	<b>Seed</b>
1 <sup>st</sup>	Eric Struchtemeyer	Mayview	Lafayette	Asgrow 4034
2 <sup>nd</sup>	Curtis Warren	Lockwood	Dade	Pioneer 93M11
2 <sup>nd</sup>	Justin Weber	St. Charles	St. Charles	Pioneer 92Y84
3 <sup>rd</sup>	Norb Mengwasser	Linn	Osage	Pioneer 94Y22

The contest winners were determined by comparing the protein and oil percentages within each sample of soybeans to the commodity market pricing for those products on a given date. For this year's contest, that date was December 7.

Lafayette County's Eric Struchtemeyer had the overall winning entry in the Soybean Quality Contest. Struchtemeyer's soybeans tested at 37.31 percent protein, more than 2.5 percentage points higher than the next entries.

The average protein content for all contest entries this year was 34 percent.

Soybeans entered into the contest were also tested for their oil content. Curtis Warren of Dade County and Justin Weber of St. Charles County both entered soybeans that tested at more than 21 percent oil.

The average oil content for all contest entries this year was 19.4 percent.

Analysis for Missouri's Soybean Quality Contest was done by Dr. Bill Wiebold, the University of Missouri Coopera-

tive Extension Service's statewide soybean specialist. His analysis included accounting for the percentage of the higher value soybean meal and its protein content, as well as the amount of oil available within the soybean samples.

Participants in the Missouri Soybean Quality Contest were required to enter their fields into the competition prior to the 2014 harvest. The 2014 yield and quality contest had 226 entries – a continued increase in participation in the annual competition.

Contest rules, as well as details on awards offered by contest sponsors, are posted online at [mosoy.org](http://mosoy.org).

Results from the 2014 Missouri Soybean Yield Contest were announced in December 2014 and are available online at [mosoy.org](http://mosoy.org).

Details for the 2015 Missouri Soybean Yield Contest will be posted online at [mosoy.org](http://mosoy.org) and announced in Missouri Soybean Farmer magazine during the summer of 2015.

To learn more, visit Missouri Soybeans online at [mosoy.org](http://mosoy.org).

# HIGH OLEIC ON THE HORIZON



By Adam Buckallew

**T**he days of the commodity soybean may soon be numbered. Researchers at public institutions and commercial seed companies are hard at work developing soybeans with higher levels of heart-healthy oleic acid. The soybean industry is projecting these high oleic soybeans may be capable of recapturing market share that soybean oil has lost to palm and canola oil in the last decade.

A decision made by the U.S. Food and Drug Administration (FDA) to add dietary trans fats to nutritional labels in 2006 sparked a movement by food companies to reformulate their products to eliminate trans fats. The new labeling regulations had an immediate effect on the market for soybean oil as food manufacturers began to use other vegetable oils in place of hydrogenated soy-oil. At the time, half of the soybean oil used in the United States was hydrogenated because it improved the oil's stability and shelf-life.

"The FDA food labeling laws resulted in a loss of demand for our product," says Will Spargo, a director of the Missouri Soybean Merchandising Council (MSMC). "Every

step in the soybean value chain is important to the pricing we see as growers and the loss of market share in the food oil industry hurt us."

The United Soybean Board (USB) estimates the soybean industry has lost 4 billion pounds of annual oil demand since the new labeling law went into effect. USB projects the industry could lose additional demand - some estimates as high as 700 million pounds - if the present situation continues unresolved. This has led to a recent increase in funding from USB and state checkoff boards to spur high oleic soybean seed development.

## **Grower Options for High Oleic**

While high oleic varieties have yet to be released in Missouri, there will soon be two distinct options for growers: biotech seed from commercial seed companies and non-genetically modified soybeans developed by University of Missouri (MU) researchers. Monsanto's Vistive Gold soybeans and DuPont Pioneer's Plenish soybeans were both developed using genetic engineering techniques to produce their high oleic trait. Each company has incorporated the

*Adam Buckallew is a former Missouri Soybean staff member who currently resides in Kansas City.*



Photos courtesy of the University of Missouri College of Agriculture, Food & Natural Resources

### Grover Shannon at the Fisher Delta Research Center in Portageville

trait into their elite genetic lines, resulting in varieties with similar yield to commodity soybeans with no impact on meal, protein or amino acid content. Both companies are still working toward important approvals from key export markets.

Although Plenish and Vistive Gold soybeans are currently available in Maturity Groups II and III only, USB has committed to supporting the high oleic variety expansion. USB has collaborated with Pioneer and Monsanto to expand commercialization into more maturity groups by pledging \$4 million per year to each company for five years. The goal is to have high oleic soybeans available in maturity groups that cover up to 80 percent of U.S. soybean acres by 2023.

Jimmy Sneed, who serves as the USB Oil Action Team Chairman, says the partnership between USB and the seed companies presented a great opportunity. “We’re leveraging the seed companies’ resources and our checkoff dollars to expand the variety zones much quicker than they would have done on their own,” says Sneed. “This investment

means we’re able to bring high oleic soybeans to more growers quicker over a broader area, which should in turn increase soybean oil demand.”

According to Sneed, one of the primary reasons for optimism about high oleic is the yield performance.

“We know, as farmers, that anything new has to be able to complete with what’s already available or it won’t be successful,” says Sneed. “We went through that with low linoleic beans. They had a yield drag and that will absolutely sink a new trait. Thankfully, the high oleic soybeans that are being grown now have proven to be very competitive with traditional commodity beans.”

#### Missouri Ingenuity

The non-transgenic high oleic soybean trait was discovered at MU by researchers Grover Shannon and Kristin Bilyeu. Shannon had been working on breeding crosses that would increase the oleic acid content from the standard 20 percent to something much higher. By crossing a line that had tested at 30 percent oleic content with another that had tested

*...continued on next page.*

## High Oleic Soybean Oil Availability\* (in billions of pounds)



Projection of  
**9.3 Billion**  
pounds of high  
oleic soybean  
oil available  
by 2024

\*QUALISOY high oleic soybean oil projections subject to fluctuate.

**Estimates are that Missouri soybean farmers could have high oleic soybeans as an option in 2017. Farmers would have the opportunity to be part of meeting the steep increase of demand for high oleic soybean oil - and to capture added value at the time of sale.**

at 40 percent oleic content, a breakthrough was made. The resulting soybeans had more than 80 percent oleic acid, or four times the normal amount.

“We were able to find two mutant genes that were responsible for the increased oleic acid,” Shannon says. “The mutations occurred naturally, so that means we can develop these soybeans without having to spend millions of dollars on product registrations and there are no trade restrictions.”

To be classified as high oleic by the oil industry, the oleic acid content must be greater than 70 percent.

The MSMC has been funding breeding research to develop better lines of soybeans with the high oleic trait through programs in Missouri, in addition to research funded by the United Soybean Board.

Shannon and Andrew Scaboo, a soybean breeder with MU, are working in tandem to develop soybeans with the high oleic trait for farmers across the state of Missouri. Scaboo is working on Group III and Group IV soybeans while Shannon breeds for Group IV and Group V soybeans. Shannon says his high oleic soybeans are nearing their public release.

“We’re very close to getting this in farmers’ hands,” Shannon says. “Our high oleic soybeans will be comparable in yield and overall performance to the soybeans that Missouri farmers are used to planting.”

Shannon expects the first varieties from his breeding program to be released in 2017. He and Scaboo are using off-season nurseries in the Caribbean and other locations to get three generations of breeding in per year for faster breeding progress. University researchers in Arkansas, Georgia, Indiana, Iowa, Michigan, Minnesota, and Tennessee are also working with the non-GM, high oleic trait to incorporate into their respective breeding programs.

“Eventually these genes will be in every maturity group from 00 to VII,” Shannon says. “That should give farmers a few choices when it comes to selecting their seed. Our non-GMO soybeans will come in Round-Up Ready 1 and conventional options.”

### A Promising Future

While variety development and production ramps up, the checkoff is working with all members of the soybean value chain to ensure high oleic soybeans are a success.

“We’re collaborating with the trait providers, farmers, processors and end users to make this thing happen,” says Sneed. “We’re making sure all our bases are covered.”

The soybean industry has set a goal for farmers to plant 18 million acres of high oleic soybeans by 2023. A recent analysis from the soybean-industry board QUALISOY reports that if that goal is met, each U.S. soybean farmer could gain 46 cents per bushel, or a total increase of \$3 billion each year for all soybean farmers. That amount is over the price each farmer would receive if the market does not adopt high oleic soybeans and food demand for soybean oil continues to decrease.

Spargo says these projections and the progress he’s seen from MSMC and USB investments into high oleic soybeans is encouraging.

“Knowing that our checkoff money is funding research with the potential to create so much profit potential for soybean farmers is very heartening,” says Spargo. “I’m proud that Missouri has been at the forefront of research into high oleic soybeans and I hope that it makes the farmers of this state proud to see their checkoff dollars at work on good research such as this. High oleic soybean oil should create a win-win for farmers and our end-user customers.”

Learn more about high oleic soybeans online at [soyinnovation.com](http://soyinnovation.com).



# BEHIND THE BEAN

*Grover Shannon knows his soy*

By Adam Buckallew

Soybean breeding has been Grover Shannon's passion for many years. His love for his work has benefitted farmers in Missouri, the Midwest and the Mid-South over a productive 50-year career. During that time, Shannon has been involved in the development of more than 80 soybean varieties (including 20-plus with utility patents) in soybean maturity groups III – VIII. His work in collaboration with other researchers has put the breeding program at the University of Missouri (MU) among of the best in the country.

An endowed professor of breeding stationed at the MU Fisher Delta Research Center, Shannon has been instrumental in advancing Missouri soybeans through cultivar breeding, germplasm enhancement and seed quality improvement. He's been one of the leading researchers in the development of soybeans with high-oleic acid content and he continues to work toward commercialization of the valuable trait. In addition to co-discovering naturally-occurring high-oleic soybean genetics, Shannon's work has included projects aimed at improving the protein and oil content of soybeans to bring additional value to growers.

"Through his research and outreach efforts, Shannon has helped the soybean industry make great strides in soybean genetics, disease resistance and improving the nutritional profile of the soybean complex," says Gary Wheeler, executive director and CEO for the Missouri Soybean Association and Missouri Soybean Merchandising Council. "His efforts, and the work his research has catalyzed in



**Grover Shannon and Andrew Scaboo present their research during a summer field day.**



**Grover Shannon with high oleic soybeans at the Fisher Delta Research Center in Portageville.**

Missouri, the Midwest, U.S. and around the world, have become the foundation for our modern soybean industry – including many of the innovations driven through the soybean checkoff.”

During his career, Shannon has focused his breeding on developing soybeans with resistance to Soybean Cyst Nematode, Soybean Root-Knot Nematode and other biotic stresses. These yield-robbing pests cost Missouri soybean growers millions of dollars in losses each year and the varieties Shannon has bred and introduced have helped growers combat these nuisances. Shannon has also led research into the investigation of exotic soybean germplasm for drought tolerance and the evaluation of breeding lines for flood tolerance. Many of Shannon's breeding projects have been funded by the soybean checkoff and the success he has had in releasing new and improved varieties demonstrates the value of investing checkoff dollars into research.

In addition to his work in the field, Shannon has authored many research papers (more than 50 by one count), served as a mentor to future breeders working as graduate students and served on various academic and professional committees.

Shannon's work has led to exciting advancements in soybean genetics, improvements in disease resistance and enhancements to soybean composition. The varieties he has introduced have raised the bar for soybeans in yield, farmer profitability and nutritional value. Through his breeding and research activities, it's clear that Shannon has made a lasting impact on the soybean industry.



**REDUCING SOYBEAN MEAL COSTS BY UP TO \$48 PER TON  
FOR POULTRY AND LIVESTOCK FARMERS**

**ADDING 74 CENTS PER BUSHEL TO THE BOTTOM LINE OF SOYBEAN FARMERS**

# BIODIESEL WORKS

Because higher biodiesel demand means more beans in the crusher, biodiesel helps to keep the cost of soybean meal down for poultry and livestock farmers. During a five-year period, biodiesel demand has saved animal ag farmers \$4.8 billion in soybean meal costs while adding 74 cents per bushel to the bottom line of soybean farmers. Biodiesel works. And thanks to farmer support and the soy checkoff, its success continues to grow. [www.UnitedSoybean.org](http://www.UnitedSoybean.org)



# BIODIESEL UPDATE

Missouri's production of the renewable fuel up to 200 million gallons per year



By Christine Tew

Soy-based biodiesel is gaining momentum in Missouri, which is good news given the continued increase in production, as well as the opportunity to grow demand for Missouri soybeans.

Nine Missouri biodiesel plants are reporting production numbers to the National Biodiesel Board (NBB), and with the final numbers in for last year: Missouri's 2014 biodiesel production was just shy of 200 million gallons of the renewable fuel.

That figure equates to the oil from more than 50 million bushels of Missouri-grown soybeans.

Three plants produce the majority of those gallons, although individual production numbers are proprietary and not available to be disclosed at this time.

A 2014 economic impact study by Missouri's Value Ag, LLC found that Missouri biodiesel production of roughly 120 million gallons equated to a total value-added economic impact of \$312,180,221. That figure only accounts for impact in Missouri directly related to biodiesel. Glycerin produced increases the impact by \$16,537,833.

Missouri currently ranks second biodiesel production, behind only Iowa. Nationally, biodiesel is credited with creating more than 62,000 jobs.

## What Do I Need to Know?

Biodiesel is nontoxic, safe to handle, store and transport. It is considered safer than petroleum diesel because it is less combustible. The flashpoint for biodiesel is higher than 130°C, compared with about 52°C for petroleum diesel.

Biodiesel is the first and only EPA-designated Advanced Biofuel that's produced on a commercial scale across the U.S.

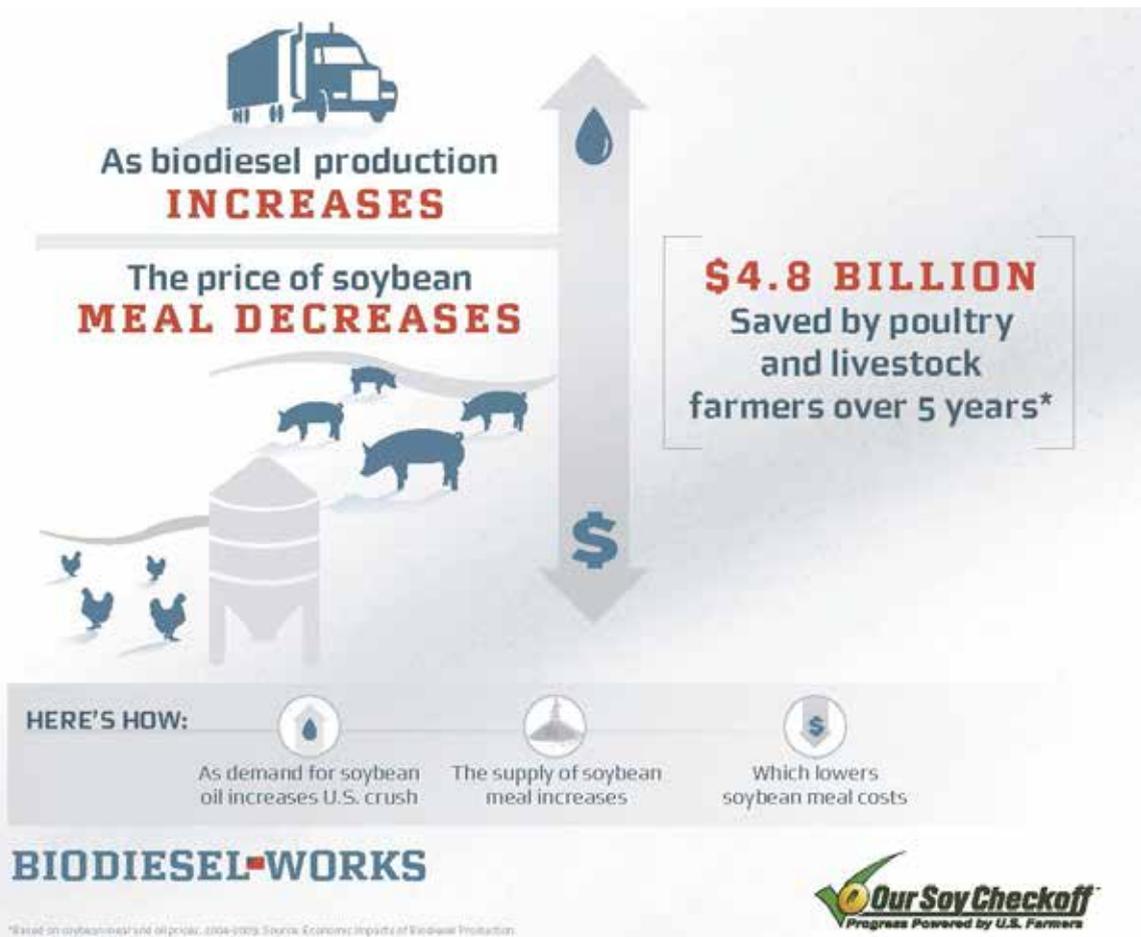
All Original Engine Manufacturers (OEMs) accept the use of B5 and many accept the use of B20.

High-level biodiesel blends (blends over B20) can have a solvency effect in engines and fuel systems that previously used petroleum diesel, releasing buildup which may result in clogged fuel filters.

Compared with using petroleum diesel, using biodiesel in a conventional petroleum diesel engine substantially reduces tailpipe emissions of unburned hydrocarbons (HC), carbon monoxide (CO), sulfates, polycyclic aromatic hydrocarbons, nitrated polycyclic aromatic hydrocarbons, and particulate matter.

## Want to know more?

Visit Missouri Soybeans online at [mosoy.org](http://mosoy.org), or the National Biodiesel Board's website at [biodiesel.org](http://biodiesel.org).





# PLANTING SAFELY

By Christine Tew

Courtesy of USB and the soybean checkoff

**N**o one plans to have an accident on the farm. However, large equipment and machinery, livestock, and chemicals from pesticides to lubricants, can all lead to accidents if not handled properly. Some studies suggest that tractors, one of the most common implements used on the farm, account for nearly half of all on-farm accidents and the majority of fatalities.

With the spring planting season in sight, putting safety ahead of the excitement of another year's growing season can be easier said than done, but is necessary.

Some of the most common tractor activities that result in fatalities are overturning and transporting equipment on or off highways, according to the University of Missouri Cooperative Extension Service and Missouri's Show-Me Farm Safety program.

The following tips from the University of Missouri Extension can help prevent those types of accidents.

## **Reduce speed when turning or crossing slopes and on rough, slick or muddy surfaces**

Slow down before making any turn. Centrifugal force is one of the major causes of tractor upsets. The centrifugal force tries to keep the tractor going in a straight line. As you double the speed of a tractor while turning, the danger of upsetting is increased four times.

Reduce speed when turning with a loader. As you turn with a raised loader, you increase the possibilities of a tractor overturn. Keep the loader as low as possible, and watch for uneven ground and obstacles, including ditches, holes and rocks, that might cause an upset.

## **Watch where you are going, especially at row ends, on roads and around trees**

When coming to the ends, slow the equipment down. Be alert to fence rows and make as wide a turn as possible. If you plan to apply a single brake in the direction of the turn, only do so at a very slow speed. Quick, short, brake-assisted turns can cause upsets.

When operating on highways, tractor operators must follow all rules of the road. Missouri law also requires a tractor to be equipped with at least one white light visible from 500 feet to the front and at least one red light visible 500 feet to the rear.

## **Where possible, avoid operating the tractor near ditches, embankments and holes**

Avoid holes and depressions that are likely to cause a sideways upset. Reduce speed to minimize the possibility of a sideways upset. To ensure safety around ditches and river embankments, just stay away. If you must operate near a ditch or riverbank, stay as far away from the ditch as it is deep. When operating around a ditch, look ahead for holes, gullies and washouts.

## **Hitch only to the drawbar and hitch points recommended by tractor manufacturers**

Hitching above the normal drawbar height may cause a tractor to tip over backward. Any time you are pulling a load with a tractor, the load is trying to pull the tractor over backward. The tractor tries to pivot around the point where the rear wheels touch the ground. When the hitch point on a tractor is raised, the chance for a backward upset is greatly increased. Always hitch to the drawbar and keep it as low as possible.

# WATCH THE PTO

By Linda Geist

## If the tractor has a rollover protective structure (ROPS), securely fasten your seat belt

The seat belt is intended to hold you within the safety zone of the ROPS frame, or rollover protective structure, if an upset occurs. The belt is there so that you will not be thrown from the tractor and crushed or receive additional injury. The rollover protective structure is designed to take the total impact of upset and at the same time protect you, the operator.

If your tractor is equipped with a seatbelt, but not with a rollover protective structure, you may want to think twice about whether to wear the seatbelt. If you do, you lose your chance of being thrown clear of the tractor in case of an upset.

In addition to those best practices, one of the key things farmers need to have in their safety plans is a stock of Slow Moving Vehicle (SMV) emblems.

The emblem reminds other motorists that the vehicle ahead of them may be moving far slower than the posted speed limit and extra caution is needed.

### Show Your SMV

Missouri law requires that no person shall operate on any public highway of this state any slow-moving vehicle or equipment after sunset to one-half hour before sunrise, or any other machinery, designed for use or normally operated at speeds less than 25 miles per hour, unless there is a SMV displayed, according to Show-Me Farm Safety.



Standards for the SMV emblem are set by the American Society of Agricultural Engineers (ASAE), the American National Standard Institute (ANSI), and the Society of Automotive Engineers. The SMV emblem is the easily recognizable reflective orange and red triangle found on the backs of tractors and implements.

Tractors aren't the alone in needing SMV's when traveling on roadways. Equipment being towed by trucks and tractors at slow speeds, such as planters and sprayers, as well as all-terrain vehicles (ATVs), and horse-drawn buggies, should bear the emblem.

The SMV emblem should be located two to 10 feet above ground level to be seen by motorists driving behind the equipment. The SMV should be firmly attached to the implement, visible at all times on the rear piece of equipment, and does not replace any other warning devices like tail lights, reflectors, or hazard lights.

A standard SMV emblem is visible from about 1,200 feet when used properly.



**Karen Funkenbusch tests an MU student's reaction time.**

Donnie Summers of Lathrop, Missouri, distinctly remembers the day his father's overalls got caught in a power take-off (PTO) of a silage cutter. The revolving device ripped his coveralls off and even pulled one sock out of his work boots.

Naked and shaken up, he walked down the country lane to his farmhouse. He was one of the lucky ones, says University of Missouri Extension safety specialist Karen Funkenbusch.

Since the 1930s, PTOs helped farmers harness the power of tractor engines to drive a variety of implements. The tractor powers a shaft that spins at hundreds of revolutions per minute.

Funkenbusch recently showed how quickly a PTO can grab clothing or hair and wrap it around its revolving shaft. She and other faculty from MU's College of Agriculture, Food and Natural Resources demonstrated a timer that mimics a PTO. People test their reaction time by hitting a switch to turn the PTO off; a digital readout shows how long it took to shut down the device.

In the time it takes a person with average reaction time to hit the off button, a 540 rpm PTO can wrap the operator around the shaft, Funkenbusch said.

"It is a common misconception that a human being can react fast enough to avoid serious injury," she said. "Once entangled, there is little a person can do."

Reaction time slows with age, declining physical condition, use of medication and lack of sleep.

Funkenbusch gives the following advice for the upcoming season:

- Always pull up long hair when working around equipment. Put hair under a hat for best results. Remove jewelry and earrings when working around PTOs.
- Don't wear clothes with loose sleeves, frayed edges or drawstrings. Avoid long shoelaces.
- Keep safety shields and guards in place, even after repairs have been made.
- Stay clear of moving parts.
- Always shut off augers and machinery equipped with belt and chain drives and rotating pulleys.
- Stop the PTO when dismounting from the tractor.
- Don't let children ride on or near a tractor. They can be entangled in the PTO if they slip.
- Walk around tractors. Never step over a rotating shaft.

To learn more, visit [extension.missouri.edu](http://extension.missouri.edu) and [farmsafety.mo.gov](http://farmsafety.mo.gov).

# TRANSLATING SCN RESEARCH

*From the lab to the field -  
for better soybean cyst nematode management*

**These soybean roots show some nematode cysts. The small, white circles are the hardened body of the nematodes and form when the nematode attaches itself to the root to create a feeding cell.**

By Caleb O'Brien

**B**eneath a North Carolina field in 1954, a tiny worm inched its way through the soil and butted against a soybean root. The worm pierced the plant, slipped inside and inserted a needle-like appendage into a cell. It pumped a mixture of proteins into the root cell and waited for the potent blend to take effect on the unsuspecting soybean.

Since the first detection of soybean cyst nematode (SCN) in the US, the worm *Heterodera glycines* has spread to about 80 percent of American soybean fields. In Missouri, SCN attacks soybeans in almost every county and causes decreased yields even in robust, healthy-looking fields.

Nationwide, SCN wreaks havoc to the tune of \$1.2 billion per year, making it by far the most costly soybean pest.

Despite the hefty toll, farmers still depend on the same small handful of resistant soybean varieties to combat SCN that they have used for years. But those natural defenses are becoming less effective as nematodes evolve.

“More than 90 percent of the soybean cultivars that farmers plant derive their resistance from a single source,” said Melissa Mitchum, a plant nematologist at the University of Missouri Bond Life Sciences Center and Division of Plant Sciences faculty member in the College of Agriculture, Food and Natural Resources. “Consequently, this has led to widespread virulence in the pathogen population, thereby reducing the effectiveness of those resistant cultivars.”

But in the past 10 years, researchers studying SCN have made numerous breakthroughs, unlocking the secrets of the nematode and exploring how the worm interacts with host plants. Now, scientists are poised to bring that knowledge from the laboratory to the field.

## **Found in translation**

Relatively little was known about SCN a decade ago. Scientists could determine the type of nematode in a soil sample and had just figured out the cocktail of proteins a nematode pumps into the soy root cell that transform it into a syncytium, or feeding cell.

Working in part with funding from commodity boards and farmer checkoff dollars, researchers around the country made breakthrough after breakthrough, deepening our understanding of SCN and equipping scientists with new tools to fight the pest.

That money helped scientists sequence the soybean genome, draft a SCN genome and pinpoint important soy and SCN genes.

Checkoff investments continued to pay dividends in 2012 when Mitchum and colleagues cloned the first gene linked to natural soybean cyst nematode resistance. This breakthrough is one key step in moving science from the laboratory into the field. With a SCN resistance gene in hand, new avenues for creating soybean varieties that fight off the nematode are opening up.

*Caleb O'Brien is a graduate student at the University of Missouri studying journalism. He is a graduate of Washington University in St. Louis and has served as a Peace Corps Volunteer in rural Paraguay and Panama.*

But other areas of research also hold promise in the struggle against soybean cyst nematode's parasitic ways.

Mitchum's group also identified the plant receptors that recognize and respond to the blend of proteins an attacking nematode inserts into a plant. In a recent project published in *Plant Biotechnology Journal*, Xiaoli Guo, a postdoctoral fellow in Mitchum's lab demonstrated that silencing those receptors in soybean roots helped the plant resist SCN.

This work has implications for more crops than just soybeans: Working with collaborator Xiaohong Wang at Cornell, Mitchum's group used their understanding of plant receptors to develop a potato resistant to potato cyst nematode.

### A roadmap for discovery

To build on the momentum of recent research, experts drafted a roadmap for the next decade of nematode research. Their goal, Mitchum said, is to address the challenge of translating these research breakthroughs into something tangible for the farmer.

With support from state farmer run organizations such as the Missouri Soybean Merchandising Council, the North Central Soybean Research Program and the United Soybean Board, researchers are formulating teams that "bring together commodity, industry and university funding to develop collaborative, interdisciplinary, multistate projects," said Mitchum.

And there's plenty of scientific firepower to advance research: MU's College of Agriculture, Food and Natural Resources alone has more than 90 faculty studying plant science, plant genetics and other areas of agriculture-related science.

The scientists' plan for the next 10 years involves a blend of molecular research, plant breeding, population biology and outreach. Researchers will focus on refining the existing draft SCN genome, which will help to develop a quick, inexpensive test for HG type and eventually contribute to understanding of how SCN overcomes a plant's resistance. They'll create an "atlas" of SCN genes researchers can use to block the pest. Updating yield loss estimates and mapping SCN distribution will also give scientists a better idea of the nematode's national impact.

Other efforts will allow breeders to incorporate new sources of resistance into commercially-available varieties, refine the use of non-host species to control SCN and develop a pipeline for creating and testing transgenic SCN-resistant soybeans. Finally, videos, webinars and training modules will help scientists, students and producers take advantage of new discoveries and techniques.

### Onward with research

A thorough understanding of SCN resistance and virulence starts with basic research and then moves into the field.



**This soybean mutant screen helps Mitchum's research team identify genes involved in soybean cyst nematode resistance. Screens are conducted by MU's Plant Nematology Laboratory. The laboratory tests soil and plant samples qualitatively and quantitatively for the presence of plant parasitic nematodes.**

"We all need to come together to transfer this knowledge to the breeder," Mitchum said, "and from there it gets out to the farmer."

Her lab recently received a National Science Foundation grant to continue their work on soybean protein receptors. Specific targeting of the receptors is just one potential strategy for producing new kinds of SCN-resistant plants.

A second grant, from the National Institute of Food and Agriculture, will allow the lab to continue refining their understanding of how SCN proteins overcome a host plant's defenses. To that end, Mitchum's graduate student Michael Gardner is identifying the genetic blueprint of the different SCN types present in Missouri fields.

"If we better understand nematode populations and what makes those populations distinct, we can better advise farmers confronted with virulent nematodes," Gardner said. "We'll be able to go one step beyond the HG type test and understand how nematodes are able to adapt in the long term, not just the next growing season."

But these breakthroughs do little good unless they then become useful tools for breeders and ultimately farmers. To that end, Mitchum and other researchers will help breeders use research results to produce soybeans with durable resistance. They'll also develop guides so farmers can easily incorporate new technologies and management strategies into their farms.

*...continued on next page.*



**Michael Gardner, Ph.D. student, Melissa Mitchum, associate professor of Plant Sciences, Xiaoli Guo, post doctoral fellow, conduct research at the University of Missouri. They investigate how soybean cyst nematode overcomes soybean resistance to identify novel approaches for management. They're housed in the Bond Life Science Center on the University of Missouri campus in Columbia.**

It's important for farmers, breeders and researchers to take a unified approach to fighting SCN, Mitchum said, because a tactic that seems successful at first could backfire.

For instance, combining resistance genes in a single soybean variety could actually be harmful.

"When we deploy it in the field, we select for nematodes that can overcome multiple types of resistance," Mitchum said.

A better approach might be to perfect varieties with distinctive resistance mechanisms and insure durable resistance by rotating among the resistant varieties and non-host crops.

"It's similar to taking antibiotics," Mitchum said. "Improper use and overuse selects for resistance." The strategic planning document should help everyone working with soybeans and SCN leverage and build upon new knowledge.

Despite all the research and recent breakthroughs, there remains only one certainty in the ongoing arms race between soybeans and SCN: "It is highly unlikely that we will eradicate it," Mitchum said, "We're going to have to find new strategies to protect and bolster soybean yields."

Thanks to the efforts of researchers such as Mitchum, in the future SCN might be a little easier to get along with.

## MU's Plant Nematology Laboratory: An Extensive Legacy

Bob Heinz spent his last day at work in December surrounded by nematodes. Heinz served as Mitchum's research specialist and coordinator of the Plant Nematology Laboratory, where he processed soil samples, responded to growers and assisted researchers. After 35 years on the job, he's retired, and Amanda Howland is now filling his shoes. The scientists and farmers who've worked with Bob over the decades thank him for his dedication and wish him luck in his retirement. And Amanda: Welcome aboard.

The Plant Nematology Lab, housed within Mitchum's lab at MU, represents a successful model for how research, teaching and extension program integration can promote interdisciplinary collaboration. Such an approach helps maintain an effective pipeline that brings research-based information and resources from MU to Missourians. The lab offers an array of tests that help farmers understand and manage nematode populations.

The available tests include:

- Vermiform Nematode Identification: Soybean Cyst? Root Knot? Lesion? Find out what kinds of nematodes are in your fields with this test.
- Soybean Cyst Nematode Egg Count: This procedure provides an estimate of the number of SCN eggs in your field.
- Soybean Cyst Nematode HG Type Test: Different types of SCN have overcome various sources of soybean resistance. A HG type test will help you determine the best source of resistance for the particular type of SCN in your field.

For more information, visit <http://soilplantlab.missouri.edu/nematode/>.



Courtesy of USB and the soybean checkoff

# MERCHANDISING COUNCIL JOINS SOY TRANSPORTATION COALITION

**M**issouri becomes the 13th state soybean board to join the Soy Transportation Coalition (STC). The thirteen member states of the STC comprise approximately 85 percent of total U.S. soybean production. The STC works to promote a cost effective, reliable and competitive transportation system.

The Missouri Soybean Merchandising Council approved joining the STC at its February 3-6 board of directors meeting in Jefferson City.

“In order to be successful, Missouri soybean farmers require a quality system of roads, bridges, railroads, locks and dams, and ports,” says Tim Gottman, a soybean producer from Monroe City and board member of the Missouri Soybean Merchandising Council. “It’s not enough to simply grow soybeans or have customers who want to purchase them. We need a transportation system that can actually get our soybeans from the farm to the customer. We therefore look forward to working with the Soy Transportation Coalition on the transportation issues that are key to farmer profitability.”

Established in 2007, the Soy Transportation Coalition is comprised of thirteen state soybean boards, the American Soybean Association, and the United Soybean Board. The goal of the organization is to position the soybean industry to benefit from a transportation system that delivers cost effective, reliable, and competitive service.

The STC works toward five objectives to strengthen U.S. soy:

1. Seek a cost effective transportation system for soy shippers and customers
2. Seek reliable transportation service for soy shippers and customers
3. Work to ensure the U.S. transportation system has the infrastructure and capacity necessary for the long term competitiveness of the soybean industry
4. Build and maintain collaborative relationships
5. Ensure the soybean industry understands the impact of transportation issues on their profitability and competitiveness

Scott Gauslow, a soybean producer from Colfax, North Dakota, and chairman of the STC, says, “The board of directors of the Soy Transportation Coalition welcomes the Missouri Soybean Merchandising Council as a member organization. Missouri is a significant producer of soybeans. Their engagement will increase our influence and impact as we work to provide a cost effective and reliable transportation system for America’s soybean farmers.”

Other state soybean boards participating in the coalition are the Illinois Soybean Association, the Indiana Soybean Alliance, the Iowa Soybean Association, the Kansas Soybean Commission, the Kentucky Soybean Board, the Michigan Soybean Promotion Committee, the Minnesota Soybean Research and Promotion Council, the Nebraska Soybean Board, the North Dakota Soybean Council, the Ohio Soybean Council, the South Dakota Soybean Research and Promotion Council, and the Tennessee Soybean Promotion Board.

To learn more about the Missouri Soybean Merchandising Council or the Soy Transportation Coalition, visit their websites at [mosoy.org](http://mosoy.org) and [soytransportation.org](http://soytransportation.org).



*“It’s not enough to simply grow soybeans or have customers who want to purchase them. We need a transportation system that can actually get our soybeans from the farm to the customer.”*



**Tim Gottman**



By Adam Buckallew

# THE SOYBEAN INNOVATOR

**R**obert “Rowland” Russell began farming in Millville, Mo. in 1936. In those days he used a team of horses to work his farmland. It was hard farming in the Dirty 30s, but Russell enjoyed it. At first he farmed with his father, but in time he was able to buy his own land. He raised corn, hay, livestock and something no one else in his area was growing – soybeans for seed.

Russell says he learned to grow soybeans from his father. The soybeans they grew were much different than modern varieties. These early soybeans produced taller, vine-like plants that were primarily grown for hay.

Growing soybeans for seed was unheard of in Ray County in the early 1940s, but that didn’t stop Russell from experimenting. He started out growing 100 acres for seed production in his first year. Unfortunately for Russell, soybean seed production was an oddity in western Missouri and there wasn’t a market for them.

“I couldn’t find anyone locally to buy my beans after harvest that first year,” Russell says. “So I ended up hauling them to St. Joseph, Mo. That was the closest market I could find for soybeans. I had visited with the owner of Hamacher’s Mill in Richmond, Mo., and he told me he wouldn’t know what to do with soybeans. But he promised that if I grew them again, he would buy them.”

News got around about what he was growing and Russell recalls he had some curious farmers who wanted to come by to see his fields. Slowly but surely, other farmers in Ray County and the surrounding area came around to the idea.

“Farmers were looking for protein sources and soybeans could meet that demand,” Russell says. “The other thing that really helped increase the popularity of soybeans was the introduction of the Allis Chalmers All-Crop Harvester. People didn’t have an efficient way of harvesting soybeans prior to the All-Crop Harvester. It was a small combine

you pulled behind your tractor and it could cut five feet at a time. That was good for harvesting about 30 acres a day.”

## **Anhydrous Ammonia Fertilizer for Western Missouri**

Not only does Russell have a pioneering history in soybeans but also in fertilizer. He was one of the first Missouri farmers to use anhydrous ammonia on his fields. The interest in fertilizer sprang from the poor condition of his farm’s soil and a need to maximize crop yield.

“I had always been interested in finding ways to get more out of our soils to improve productivity,” Russell says. “I used to tell people our soil was so poor it wouldn’t grow ticklegrass. I experimented with different fertilizers trying to find what would work best.”

During World War II, the United States government built 10 ammonia plants to supply its munitions needs. Nitrogen was a key component of TNT and other explosives used in wartime. When the war ended, the country was producing 730,000 tons of ammonia each year with the capacity of



**Russell & Sons Fertilizer**

producing 1.6 million tons. The ammonia surplus that was created by the end of the war presented farmers with an opportunity.

Farmers used ammonia nitrate pellets for fertilizer during the early 1940s, but this form of ammonia was highly explosive and dangerous. So researchers began to look for ways to apply anhydrous ammonia to the soil in a safer manner. In time, agricultural researchers in Mississippi discovered a way of injecting anhydrous into the soil. They developed a knife-like applicator with an iron pipe welded on the back of it to inject the gas safely below the soil surface.

“I heard about the potential for anhydrous ammonia and wanted to try it on my farm,” Russell says. “So I traveled to Mississippi where I learned all I could about it. Then I started experimenting with anhydrous on my own crops around 1950 and noticed it provided a substantial boost in yield.”

Russell had his anhydrous applicator built at a local shop because there weren’t any commercial applicators available for purchase at that point in time. He pulled the applicator, which he called the Nitro Shooter, with his WD45 Allis Chalmers tractor. He spent \$1,600 to buy the applicator and the tractor.

This was the beginning of Russell & Sons Fertilizer, a business Russell started in addition to his farm work. With the help of his wife, Sarah, who served as bookkeeper and accountant, Russell began working with local farmers to show them how effective anhydrous could be in boosting crop yields.

“I set up lots of test plots,” Russell recalls. “I would tell people, ‘try 10 or 20 acres. You’ll see the benefits.’”

Russell knew anhydrous had strong potential as a fertilizer and he started traveling across the region to demonstrate its performance. At each stop, he noted the improved growth from corn fertilized with anhydrous and the higher yield results his test plots achieved.

“People were astonished by the dramatic effect anhydrous had on corn,” Russell says. “Cars would stop to stare at my fields because the difference in the crops fertilized with anhydrous was noticeable from the road. One local fellow tested two fields that were side by side and he found there was a 100-bushel difference between the one fertilized with anhydrous and the one that wasn’t.”

After a few years of consistently positive results from the anhydrous fertilizer, local farmers finally came around to the idea and began to demand it. Phillips 66 became one of Russell’s main suppliers of anhydrous and the company put in a 30,000 gallon storage tank south of Richmond for Russell to service his customers. He later put in an additional 12,000 gallon storage tank on his property for anhydrous.

**Rowland and Ronnie Russell look back on historic photos of the family farm while being interviewed for this article.**

**Rowland and Sarah Russell**



It was around this time that Russell expanded his fertilizer supply company by adding dry fertilizers such as potash, phosphate and nitrogen. Although fertilizer was not sold in bulk when Russell started his business, the fertilizer market grew so big that he moved to selling it by the ton. Russell’s success in fertilizer sales eventually made him one of the largest independent suppliers in the state.

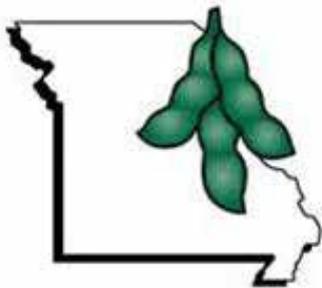
#### **Confidence is Key to Success**

At 97 years old, Russell has seen many changes in farming. But he believes the same principles that made him successful still apply to the next generation of farmers.

“It was difficult to farm when I got in to it, but I kept working at it and figured out a way to make it work,” Russell says. “If you don’t work at it, you don’t believe in yourself. If you don’t believe in yourself, it won’t happen. You must choose to believe that you have the ability to accomplish your goals. It’s important to have confidence in yourself.”

Russell says family and faith are also important parts of a farmer’s life. He and his wife were married for 73 years before she passed away in 2011. Together they had four children: Carolyn Sue, Rosalyn, Robert and Ronnie. His son Ronnie farms in the Millville area and manages the family fertilizer business. Ronnie serves on the Missouri Soybean Association board of directors, an organization that exists in part because of early farmers like his father who helped popularize growing soybeans in Missouri.





# HONOR WALL

*Good news from those working on behalf of Missouri soybean farmers*

## FOR THE LOVE OF CORN



**Gary Wheeler (second from left) was honored for his dedicated service and continuing work on behalf of Missouri farmers by Missouri Corn's executive board.**

Congratulations are in order for Missouri Soybeans' Executive Director and CEO Gary Wheeler. During the Missouri Corn Growers Association 2015 annual meeting, he was honored with the organization's President's Award for his work benefiting Missouri corn farmers.

Prior to his leadership role with Missouri Soybeans, Wheeler served Missouri Corn in a number of roles over nine years.

Other honorees included Attorney General Chris Koster, who received the Public Servant Award. Senator Brian Munzlinger and Representative Todd Richardson received Friend of Corn Growers awards, and Rich Hanson of Show Me Ethanol and Steve Murphy of POET Biorefining received Outstanding Partner awards.

Missouri Corn Growers Association CEO praised all the honorees during the annual meeting's banquet.

"While reflecting on the past year, it was only fitting to recognize those individuals who helped make our progress possible," said MCGA CEO Gary Marshall. "Our elected leaders stood by growers as they advocated for the Farming Rights Amendment and increased ethanol markets in Missouri. We thank all of our partners for their efforts to strengthen this state's corn industry."

To see other photos from the awards presentation, or to learn more about Missouri Corn, visit [mocomn.org](http://mocomn.org).



## FAULKNER RETIRES

Longtime Missouri Soybean Association director Cindy Faulkner retired from her seat in February. She had served on the Association's board of directors since 1991.

Cindy and her husband Rick farm in southeast Missouri's New Madrid County, raising soybeans, cotton and corn.

Her seat was filled by Peter Rost Jr., also of New Madrid.



**Cindy Faulkner**

## COONCE GRAUDATES

Diana Coonce, administrative manager for the Missouri Soybean Association and Missouri Soybean Merchandising Council, recently graduated from Columbia College. She earned her bachelor's degree in business.

She joined the Jefferson City staff at Missouri Soybeans last fall and is an integral part of the team.

Diana lives with her husband Jacob and their children in Jamestown.



**Diana Coonce**

# ASA CEO IS ST. LOUIS AREA'S AG LEADER OF THE YEAR

By Jordan Bright

The St. Louis Agribusiness Club named American Soybean Association (ASA) CEO Stephen L. Censky as the area's "Agribusiness Leader of the Year."

Since 1981, the St. Louis AgriBusiness Club has presented the prestigious award to a person who has made a substantial contribution to the well-being of agriculture in the St. Louis area, either on a local or national scale. Censky was nominated by Melinda Whittle, Kimberly Magin, and Molly Cline (retired) from the Monsanto Company, as well as by Dick McWard, an Illinois farmer and former Bunge North America executive.

The award is presented to someone who has made a substantial contribution to the well-being of agriculture in the St. Louis area, either on a local or national scale.

"Steve has continually pursued opportunities for soybean farmers throughout the U.S. to improve their position in agriculture," they said. "Whether in DC, Beijing, Brussels, or Hong Kong, Steve Censky has sought to maximize the opportunities of both the U.S. Soybean farmers and their very important customers."

Censky is the American Soybean Association's (ASA) Chief Executive Officer, a staff position he accepted in April 1996. As ASA's top executive, Censky is in charge of managing ASA's legislative, trade policy, international market development, membership and leadership development programs.

Prior to joining ASA, Censky worked in Washington, D.C. for over a decade. He began his career on Capitol Hill as a legislative assistant for agricultural and transportation matters to Senator Jim Abdnor (R-SD). Later he served in both the Ronald Reagan and George H. Bush Administrations at the U.S. Department of Agriculture (USDA), helping to craft the 1990 Farm Bill and eventually serving as Administrator of the Foreign Agricultural Service where he was involved in global trade negotiations and running our nation's export programs.

Censky received his Bachelor's of Science degree of Agriculture from South Dakota State University and his Master's Diploma in Agriculture Studies from the University of Melbourne, Australia. He grew up on a soybean, corn and diversified livestock farm near Jackson, Minn.

Censky accepted the award during the club's February meeting Feb. 10, 2015.

"I'm honored to receive this award from the St. Louis Agribusiness Club," Censky said. "Each member of this respected group has a hand in helping those who produce the food, fuel and clothing for our growing world population. I'm proud to be part of this team lending its voice to agricultural issues, leading innovation and ensuring growers have the tools and technology they need to continue feeding the world."



**Steve Censky, CEO of the American Soybean Association, received one of the St. Louis Agribusiness Club's highest honors recently, recognizing his work on behalf of all of agriculture.**

In addition to his work on behalf of all U.S. soy growers, the nominators cited Censky's contributions at home in the St. Louis area, working as a leader in agriculture to bring together the diverse interests of the grain trade, farmers, transportation, trait providers and politicians to create an environment where agriculture and farming can lead in the fields of innovation and profitability.

"We can think of no individual more deserving to receive the honor of St. Louis Agribusiness Club Agribusiness Leader of the Year," they said. "Throughout his career, Steve has continually sought new and innovative approaches to the challenges and opportunities facing not only soybean growers and the soybean industry, but also St. Louis Agriculture overall."

Founded in 1981, the St. Louis Agribusiness Club provides educational, networking, and professional development for nearly 400 members while promoting a positive image for the agricultural industry. The Club works to attract agricultural companies and associations to the St. Louis area and plays an important role in helping government leaders better understand the importance of agriculture to our nation. Agribusiness accounts for 12 percent of the St. Louis region's total area economic output and 20 percent of the region's workforce.

The American Soybean Association is a national, not-for-profit commodity organization with over 22,000 members and is headquartered in St. Louis. ASA works as the domestic and international policy advocate for soybean producer members.



Learn more about Censky and ASA online at [soygrowers.com](http://soygrowers.com).

# THEY STARTED AT SOYBEAN

*Many students have gained valuable experience as college interns with the Missouri Soybean Merchandising Council and Missouri Soybean Association. This feature follows some of those outstanding people who are now making a difference for agriculture as young professionals.*

By Adam Buckallew

Internships with the Missouri Soybean Association (MSA) have benefitted many students in their pursuit of a career in agriculture. The experience gained from internships can help students learn important lessons about working in the real world and better prepare them for future jobs. Not only are internships beneficial for students, but the work they do during the course of the internship is also valuable to MSA as well.

Former MSA intern Brendon Lueck grew up on a farm outside of Alma, Mo., where his family raised corn, soybeans and cattle. Lueck showed cattle with his local 4-H program and participated in the Santa Fe High School Future Farmers of America program where he was a member of the livestock judging team. When he started college at the University of Missouri, Lueck joined Alpha Gamma Sigma Fraternity and was planning to focus on a career working with livestock. During his time at Mizzou, Lueck studied in agriculture education and later added a second major in agriculture economics.

“I grew up working with cattle and that was originally the type of work I thought I wanted to do professionally,” Lueck says. “I eventually discovered that wasn’t for me and decided I’d rather concentrate on the crops side of the business. At the time, I was a sophomore in college and looking for experience. The internship with the Missouri Soybean Association provided an opportunity to learn more about the industry and was a great fit for me.”

Lueck was hired as a marketing intern and worked under Tom Verry on a variety of projects including analyzing data from soybean variety trials and assisting with the MSA golf tournaments in Sikeston and Richmond. He says a few projects stand out from his time as an intern.

“I recall working on a container project where we were looking into the logistics of shipping bagged beans to Asia,” Lueck says. “I didn’t even know about the container shipping business when I started, but it was a great chance to learn about soybean exports and to network with people in the soybean community and the shipping industry. I also fondly remember making soy doughnuts for two weeks at the Missouri State Fair.”



**Brendon Lueck**

Lueck says the experience he gained working at the MSA played an important role in the formation of his career path.

“I was able to use my successful internship with the Missouri Soybean Association as a stepping stone into two additional internships with Monsanto and Dow AgroSciences,” Lueck says. “That experience helped me get a full-time job with Dow AgroSciences and I have been with them for almost 12 years.”

During his time with Dow, Lueck has had the opportunity to serve in a number of roles including sales, marketing and corporate account management. His first position was in sales of crop protection products in Kansas and he later moved to the seed side of the company with Mycogen Seeds. He currently serves as a sales manager for Mycogen Seeds in Illinois and Kentucky where he manages 11 sales representatives.

Lueck resides in Springfield, Ill. with his wife, Katie, and they will be celebrating their tenth wedding anniversary this summer. They have 3 children: Madelyn (8), Wilson (5) and August (6 months).



**Brendon Lueck came to Missouri Soybean with a background in agriculture, including a strong interest in livestock production.**

*Adam Buckallew is also a former Missouri Soybean Merchandising Council and Missouri Soybean Association intern.*

**M**att Stuever knew he wanted to work in the agricultural industry someday, but he wasn't certain where that might lead him. Stuever grew up on a family farm near Dexter, Mo., raising beans, corn and cotton. Once he graduated from Bernie High School, he decided to continue his education at the University of Missouri. There Stuever joined Alpha Gamma Rho fraternity and studied in agricultural business.

While he was in the process of determining his career path, Stuever heard about the summer internship program with the Missouri Soybean Association (MSA) and decided to apply. He was chosen for one of three internship positions for the summer of 2005.

"I felt an internship with a farmer-led grassroots organization supporting Missouri farmers' interests would be a great learning opportunity," Stuever says. "It was the type of experience I was looking for in the ag sector and I knew it would be beneficial no matter what type of job I ended up taking in agriculture—whether that be on political side or the business side."

Stuever says he enjoyed working with soybean growers at MSA political action committee events, the golf tournaments and the various projects he was assigned during his internship.

"I definitely remember the comradery that the office staff had with the member growers," Stuever says. "It was neat to see the support the association provided to the state's soybean farmers and the gratitude they had for the hard work we were doing on their behalf. There were several value added projects we were involved in at the time and you could tell there was a great sense of pride in the work that was being done."

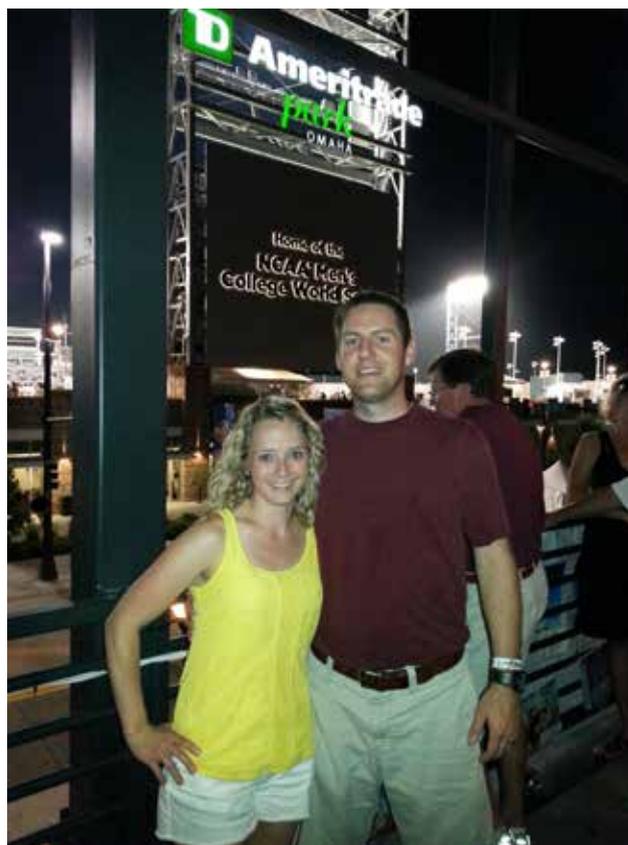
Stuever got a chance help provide support for politicians endorsed by the MSA since his internship occurred during election season. Another of his projects involved assessing the market potential for Missouri-grown edamame.

"I worked with John Kleiboeker to grow a couple acres of soybeans that were harvested using an old green bean picker before they reached full maturity," Stuever says.

His biggest project for the summer consisted of sales support for the Pony Express beer brand. Pony Express was a value-added soybean project because soy was used as a finishing product in the brewing process. Stuever says he focused on promotion of three Pony Express beers: Pony Gold, Tornado Red Ale and Rattlesnake Ale.

"We were trying to revive the brand and establish it in the Columbia, Mo. market," Stuever says. "I spent many hours making sales calls trying to get it into new locations."

Stuever says his internship with MSA allowed him to broaden his horizons and learn about many aspects of agricultural business.



**Matt and Emily Stuever**

"It gave me an understanding of what matters to farmers, the role they play in the industry and how to work best with them. These insights have been valuable in my career."

Stuever's experience with MSA helped him get an internship with Archer Daniels Midland Company as a grain merchandiser trainee.

After completing his college degree, Stuever accepted a position with Bartlett Grain Company (BGC) in Kansas City, Mo., as a commercial wheat originator.



In 2007, he moved to Wichita, Kan., for BGC to serve as merchandising manager at a wheat terminal. Two years later, he and his family moved to the Omaha area for another position with BGC. Stuever currently serves as merchandising manager for two BGC grain terminals in Council Bluffs, Iowa.

Stuever lives in Bellevue, Neb., with his wife, Emily, and their two amazingly energetic little girls, Madison (5) and Allie (3). They are expecting a third child in July.



# FINDING COMMONGROUND ORGANICS

**C**ommonGround is a national movement of farm women who share information about farming and the food they and their families grow across the U.S. One of the hottest topics is organics – specifically, whether organic foods are safer and more nutritious than food without an organic label or seal.

The simplest answer is that the label ‘organic’ refers to the way food was produced, not its nutritional value. The production processes involved in growing or raising food qualify it as organic, not the final product itself. Organic classification should not be an automatic green light indicating the quality or safety of a product. All foods – whether organic or nonorganic – must meet certain health and safety regulations before being sold to consumers. Several U.S. government agencies, including the Food and Drug Administration (FDA) and Environmental Protection Agency (EPA), monitor the food production chain through regulations and inspections from farm to fork to ensure that all food is safe.

The USDA, which certifies organic production, makes no claims that organically grown food is more nutritious than conventionally grown food. Organic food proves to be only different in how it is grown, handled and processed. For example, in the case of milk, stringent government standards include testing all types of milk for antibiotic and other residues to ensure that both organic milk and conventional milk remain equally pure, safe and nutritious. Organic or traditional, all milk contains the same valuable nutrients.

**Confused About Your Food? YOU'RE NOT ALONE**

**46% OF MOMS BELIEVE\***  
"Organic food is healthier."  
↓  
**SCIENCE TELLS A DIFFERENT STORY**  
A comprehensive review found no difference in the health benefits of organic and conventional food.\*\*

**69% OF MOMS WILL TELL YOU\***  
"Most farms are owned by giant, non-family corporations."  
↓  
**TRY HARDWORKING FAMILIES**  
98% of the 2.2 million farms in the U.S. are family farms.\*\*\*

**3 out of 4 MOMS AGREE**  
"Organic" means my food is grown without pesticides.\*\*  
↓  
**BELIEVE IT OR NOT**  
Organic food is produced without using most conventional pesticides.\*\*\*\*  
However, there are more than 50 synthetic pesticides that may be used in organic crop production if other substances fail to prevent or control the target pest.\*\*\*\*\*

**70% OF MOMS HAVE QUESTIONS about how their food IS GROWN OR RAISED\***

**commonground™**  
Conversations About Farming and Food

Get the answers to your food questions at [FindOurCommonGround.com](http://FindOurCommonGround.com)

\* Percentages based on the 2012 CommonGround Gate-To-Plate Survey.  
\*\* Critical Reviews in Food Science and Nutrition  
\*\*\* U.S. Department of Agriculture (USDA)  
\*\*\*\* USDA's National Organic Standards Board  
\*\*\*\*\* Electronic Code of Federal Regulations - Section 205.601

Brought to you by America's soybean and corn farmers and their checkoffs.

Find these and other easy-to-share facts about modern agriculture online at [findourcommonground.com](http://findourcommonground.com).

*CommonGround is a grassroots movement made up of farm women, creating conversations about farming and food. Volunteers address animal care, GMOs, farm safety, family farms, food prices, antibiotic use, hormones and more through their experiences, connecting with those who otherwise might not have such a personal experience with agriculture.*

Eight of our Missouri CommonGround volunteers gathered in Jefferson City recently to learn new ways to share their personal experiences living, working and raising families on the farm.

In addition to getting an update on social media and upcoming national events, the group visited the Learfield Communications Inc. studio in Jefferson City - not only for a tour of the facilities, but also for a chance to ask their broadcast team questions about interviews and pitching story ideas, as well as to step into recording booths for some practice.

A special Thank you! goes out to Cyndi Young, Julie Harker and John Perkins of Brownfield Ag News for hosting our group!



Missouri CommonGround volunteers with Cyndi Young and Julie Harker of Brownfield Ag News, in the newsroom.

## KIDS' CORNER

*Like what you see in this section? Have ideas? Let us know!*

*These activities and many others are also available in the Missouri Soybean Merchandising Council's activity booklet. Request a copy by calling (573) 635-3819 or via email to [ctew@mosoy.org](mailto:ctew@mosoy.org).*

### Soybean Uses Word Search

R	T	U	O	L	F	P	R	T
M	U	F	X	I	N	A	Z	K
A	E	D	G	S	W	N	N	X
R	A	D	P	U	L	C	E	C
G	X	P	I	Z	Z	A	Q	N
A	Y	C	T	C	R	K	U	O
R	C	A	N	D	I	E	S	O
I	J	K	L	P	I	N	U	D
N	C	E	R	E	A	L	E	L
E	H	S	A	U	S	A	G	E
G	F	H	O	T	D	O	G	S

#### THINGS WE EAT:

CANDIES  
MARGARINE  
CAKE  
PANCAKE  
CEREAL  
PIZZA  
SAUSAGE  
NOODLES  
HOT DOGS  
MEDICINE

#### Did you know?

Just 13 percent of the land in Missouri is used for growing soybeans.

One bushel of soybeans produces 1.5 gallons of soy oil that can be used for cooking, as a lubricant or an ingredient in other products.

Soybeans were first planted in China in 11th century BC.

Roughly 40 percent of the world's soybeans are grown in the U.S.

One bushel of soybeans can make 82,000 crayons.

Eating just 2/3 cup of edamame gives you 9 grams of soy protein.

# How are you growing?

Missouri is a national leader in soy-based biodiesel, producing nearly 200 million gallons of the renewable fuel each year.

High-protein soybean meal keeps Missouri's livestock growing too, adding value on the farm and in local communities.

**From clean, local biodiesel to the meat on your dinner plate, Missouri soybean farmers are growing for you.**



**MISSOURI**  
**SOYBEANS**

Learn more online at [MOSOY.ORG](http://MOSOY.ORG)

*brought to you by Missouri soybean farmers and their checkoff*





# CAPITOL UPDATE

The Missouri Soybean Association's top legislative priorities heading into this legislative session were addressing weight limits during harvest, and funding for Missouri's Biodiesel Producer Incentive Fund. In addition to those, the Missouri Soybeans team was looking at proposed language that would benefit all of Missouri agriculture, from bills regarding on-farm liability to establishing programs for young and beginning farmers.

All of those have continued to be part of the conversation in the Capitol this winter and spring.

In addition to those discussions, we've had the opportunity to visit with many of our soybean growers when they've come to down for meetings with their legislators, other agricultural groups and for soybean-focused events. We appreciate that those individuals have taken the time to share the things on their mind, and their priorities, with us. Hearing from you, our soybean farmers, helps us better serve you in the Capitol and throughout the state.

Here are some of the high points of what we're hearing from you:

- Missouri needs to support biodiesel, not just through the incentive fund, but by making it available in more places throughout the state.
- Herbicide resistant weeds are a concern and our growers are looking for options to prevent and address those plants. They'd like to see more research in that area.
- Raising highway weight limits is critical to stay competitive with other states. For Missouri farmers near our state lines, they're competing against producers who can deliver larger loads to the nearest elevators and ports.
- Adding value to commodity soybeans is something growers tell us they're interested in hearing more about. Whether it's higher protein varieties, high oleic soybeans or something else, farmers are looking for a leg up over commodity prices.

Please take the time to let us know what's on your mind. As your Missouri Soybean staff, we work for our growers and advocate on their behalf. We look forward to hearing from you.

## Contact Your Staff



**Dan Engemann**  
Director  
Industry & Producer  
Relations

**dengemann@mosoy.org**  
**(573) 635-3819**

# CONNECT WITH MISSOURI SOYBEANS

## UPCOMING EVENTS & ACTIVITIES

Earth Day at the Capitol  
Capitol Lawn, Jefferson City  
April 24

Missouri Soybean Association Golf Tournament  
Shirkey Golf Course, Richmond  
July 8

Pest Management Field Day  
Bradford Research Center, Columbia  
July 16

Crop Injury and Diagnostic Clinic  
Bradford Research Center, Columbia  
July 28-29

Greenley Research Center Field Day  
Greenley Memorial Research Center, Novelty  
August 4

Missouri State Fair  
State Fairgrounds, Sedalia  
August 12-23

Fisher Delta Research Center Field Day  
Rone Hall, Portageville  
September 2



### SEE FOR YOURSELF!

Don't forget - the deadline to apply for the United Soybean Board's See For Yourself program is April 4.

Visit [unitedsoybean.org](http://unitedsoybean.org) to get started.

### WANT MORE?



Follow us on [mosoy.org](http://mosoy.org) to learn more!

"Like" us on Facebook and follow us on Twitter.



## NEW STAFF AT MISSOURI SOYBEANS

**Chris Schroeder** is Missouri Soybeans' new Director of Accounting. He is a graduate of Central Missouri State University and comes to us after serving as the CFO for three John Deere Dealerships in the area. Chris is originally from Tipton and currently resides in Jefferson City with his wife, Pam.

Chris' responsibilities include day-to-day accounting, transactions, accounting procedures/operations, financial reporting and specific areas of human resources.



**Chris Schroeder**

**Trina Stumpe** is Missouri Soybeans' new Industry & Producer Relations Manager. She is a recent graduate of the University of Missouri College of Agriculture, Food & Natural Resources with a bachelors in Agribusiness Management. Last summer, she interned with Missouri Corn, gaining valuable commodity association experience. She is a native of Franklin County and is involved with her family's livestock farm.

Trina's responsibilities include assisting with membership recruitment and retention activities, managing our trade show schedule and staffing those events, and assisting with the CommonGround program.



**Trina Stumpe**

# EXPLAINING SOYBEAN LEADERSHIP

*From the soybean checkoff to membership organizations, a team approach makes the most of farmers' dollars.*

The American Soybean Association and the United Soybean Board/Soybean Checkoff are two distinctly separate organizations that work for U.S. soybean farmers. Confusing the two organizations happens often however, as farmers ask why they aren't association members after paying the soybean checkoff, or elected officials thank checkoff organizations for policy work. The information below explains in what ways the organizations are complementary and how they are different.

In Missouri, the Missouri Soybean Merchandising Council administers the soybean checkoff, investing those funds in research, education and promotion with the goal of improving the bottom line for soybean farmers. The Missouri Soybean Association is the membership and policy arm, advocating for soybean farmers' interests.

## Complementary Missions

### American Soybean Association

The ASA mission is to serve farmers by protecting and increasing the market value and opportunities for soybean farmers.

### Soybean Checkoff

The United Soybean Board/soybean checkoff mission is to effectively invest and leverage soybean checkoff resources to maximize profit opportunities for U.S. soybean farmers.



Look for the checkmark or "brought to you by the soybean checkoff" to know which projects are supported by those dollars.

## Different Investment by Soybean Farmers

### American Soybean Association

ASA is a voluntary membership organization. Soybean farmers choose to become dues paying members of ASA and their state soybean association. Dues vary by state, ranging from \$55 to \$110 a year. The state and ASA each receive a portion of dues.

### Soybean Checkoff

Soybean checkoff is a mandatory assessment of 0.5 percent of the market price for every bushel of soybeans sold by the farmer. These dollars are divided 50-50 between the national soybean checkoff and state checkoffs.



If you believe, belong.

## Different Responsibilities

### American Soybean Association

ASA's responsibilities include legislative, policy and regulatory efforts in Washington D.C. on behalf of U.S. soybean farmers.

### Soybean Checkoff

The United Soybean Board/soybean checkoff is responsible for research and promotion for U.S. soybeans. By law, soybean checkoff dollars cannot be used to fund policy or lobbying activities.

## Complementary Issues

### American Soybean Association

ASA is actively involved in policy issues that impact U.S. soybean farmers such the renewable fuels standard for biodiesel, the farm bill, trade negotiations, transportation and infrastructure, and a variety of regulatory actions.

### Soybean Checkoff

The United Soybean Board/soybean checkoff funds research and promotion impacting soybean farmers. An example of complementary work is when the checkoff funded product and market research to launch biodiesel while ASA created mark pull, through the biodiesel tax incentive and Renewable Fuel Standard.

## Complementary International Marketing Efforts

### American Soybean Association

ASA supports increased international market development by investing ASA-awarded cost-share funding provided by the U.S. Department of Agriculture through the U.S. Soybean Export Council.

### Soybean Checkoff

The United Soybean Board invests soybean farmer check-off dollars to expand international markets for U.S. soybeans and soy products through the U.S. Soybean Export Council, thus ensuring a coordinated program.

## Different Governance

### American Soybean Association

The ASA organization is governed by a Board of Directors made up of 45 volunteer soybean farmers from 26 state soybean associations and Canada who have been elected by their state associations to serve on the ASA Board. The number of directors from each state is determined by the state's total membership.

### Soybean Checkoff

The soybean checkoff is administered by the United Soybean Board and is composed of 69 volunteer farmer-leaders appointed to the board by the U.S. Secretary of Agriculture. These farmers are often nominated by their state checkoff boards or fellow farmers through elections.

*This article was prepared by the American Soybean Association and originally posted online at [soygrowers.com](http://soygrowers.com).*



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 life is 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](http://www.TakeActionOnWeeds.com) to learn how you can prevent herbicide-resistant weeds from spreading.

