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COVER STORY
Farmers, Consultants Shatter Soybean Yield Barriers
Illinois soybean farmers and consultants are shattering yield barriers, as the industry unleashes a flurry of new tools and technologies to employ in the field. Meet some of Illinois’ soybean management revolutionaries, and learn how they pushed the yield envelope in 2015.

Seed Treatments Protect Yield Potential
While most soybeans contain great yield potential, different stresses can lower that potential as soon as the seed is planted. Seed treatments are one of the management tools that Illinois farmers can use to protect seed during its first days. Read more about the opportunities.

Want More Yield in 2016?
Can the national average soybean yield reach as high as 85 bushels per acre? University of Illinois Crop Physiologist Fred Below believes so. Get the latest updates on his Illinois soybean checkoff-funded research efforts, the “Six Secrets to Soybean Success.”

Draper Heads Boost Soybean, Wheat Yields
When it comes to getting more yield out of the field, some farmers are turning to draper heads instead of the traditional auger head. Illinois soybean farmers discuss their results and their returns on investment after making the switch.

PROFITABILITY MATTERS
Do Your Math on Farmland Decisions
Lower commodity prices mean tight margins for farmers, and Illinois land values are beginning to adjust. See what one ag economist has to say about farmland values, negotiating rents and financing for a profitable 2016.

Organic Matter Builds Soil
Geography and soil types don’t change, so soils must improve with management that builds organic matter content over time. That includes manure applications. Read how Illinois soybean farmers can make the most of manure fertilization this year and beyond.
Work on Boosting Yield in the Offseason

Believe it or not, spring is just around the corner. Have you been working on your soybean yield potential in the offseason? Do you have a production management plan ready for 2016?

The Illinois Soybean Association (ISA) places a high priority on farmer profitability. One of our primary objectives with programs funded through the Illinois soybean checkoff is to optimize farmer profitability through business management, yield and sustainable production practices.

One of our most notable, ongoing programs as it relates to profitability is the Yield Challenge. ISA established the Yield Challenge in 2010 to encourage farmers to conduct on-farm research to evaluate different management practices that can increase yields and profits.

The last three seasons, we also have had the 100-Bushel Yield Challenge. Dan Arkels from Peru, Ill., topped 100 bushels in 2014 at 103.95, and Champaign County farmer Jason Lakey and his father, Robert, set a new verified state soybean record with 108.3 bushels in 2015. Several farmers recorded soybean yields in the upper 80- to 90-bushel per-acre range.

So what’s the secret to raising more bushels per acre? Aside from the effects of the weather, Illinois soybean checkoff-funded efforts have identified many possible yield boosters. This issue of Illinois Field & Bean shares that information with you. In the pages ahead:

- Learn more from the Lakeys and other 2015 Yield Challenge contenders about what worked to boost yields and what didn’t.
- Get an update from Fred Below, University of Illinois plant physiologist, on his Six Secrets to Soybean Success. Below shows how improved management practices can help Illinois farmers produce high-yield soybeans.
- Find out how seed treatments and fertilization options can increase yields.
- Do you have management strategies that boost your yields or ideas you want to try? Rules and guidelines for the 2016 Yield Challenge will be released by mid-year. If you have questions, call or email Yield Challenge Coordinator Jim Nelson at 309-825-7542 or jnelson@ilsoy.org.

DARYL CATES
ISA Chairman
Let’s start by imagining the life of a soybean plant. It all starts in the seed — a dormant package of life, created by the forces of evolution and perfected by plant breeders all over the world. The farmer comes along and places the seed in the soil to grow and mature. The hope is for the seed to complete its lifecycle and transform into yields harvested in the fall.

In this dynamic world with all the things that could go wrong and how seemingly incapable we are to manage, or even predict, the environment, the odds are stacked against the poor little seed. But by understanding the unique set of circumstances needed to create this miracle, we are much closer to achieving the full genetic potential and maximum yields we need to keep our farms profitable. When planted under optimum conditions, soybean plants take off. Cell division takes place at exponential speeds to rapidly establish the stand. The most important part of a soybean’s lifecycle is that first 48 hours, when the plant is taking in water. The biochemical chain reaction begins. Conditions during this time will make or break the yield of our fields.

Realistically, how often are these conditions really ideal? Not often. Seed companies and local retailers often recommend various tools that can protect soybeans. Seed is treated with fungicides and insecticides to protect it from biotic stresses. This successfully stops fungi, insects and other pathogens that can steal the young soybean plant’s life.

Management of abiotic stress, however, is often left to chance or ignored due to complications associated with managing the environment. Farmers often change planting time and depth or increase stand density to minimize the effects of negative environmental conditions because chemical controls for the environment previously did not exist.

Through years of agronomic research and development, we have come up with a solution to the environment similar to the way pesticide companies developed solutions for biotic pests. We have powerful plant antioxidants formulated specifically for the seed and designed to rapidly be absorbed as the seed imbibes water. This signals high-energy utilization and manages from inside the plant the negative effects of the environment. Plants are protected at the most essential time by balancing the processes necessary to achieve maximum genetic potential.

Given the strong correlation between plant health and soybean yield, output will certainly increase as farmers treat their crops and increase understanding of plant health, the effects of stress and the tools and approaches to manage it. We need to protect genetic potential and provide an environment for scientifically designed seeds to be fully expressed.

Understanding the signaling processes and hormonal balance of the soybean plant is crucial to realizing true genetic potential. Plant health and yield results that come with it can be achieved in ways beyond the common applications targeting just bugs, bacteria and fungi.

Unleash the power of your plants, eliminate stress and provide proper plant health. Maximize genetic expression and increase your return on investment in 2016.

“"The hope is for the seed to complete its lifecycle and transform into yields harvested in the fall."”

Jason Watson is an agronomist with StollerUSA. For more information, contact Watson at jwatson@stollerusa.com.
The 2010s have been referred to as the “decade of the bean.” And why not? Illinois soybean farmers and consultants are shattering yield barriers, as the industry unleashes a flurry of new tools and technologies that lead the way to rapid increases in soybean yields.

“We’re managing beans much differently than we did 10 years ago, and that is leading to some tremendous yields,” says Andy Knepp, Certified Crop Adviser (CCA) and regional technology development lead with Monsanto. “When you look at the trend line, we’re producing 10 more bushels on every acre in Illinois than we were 10 years ago. That is an amazing fact.”

Compared to USDA’s 2014 state average soybean yield of 56 bushels per acre, many of the Illinois Soybean Association’s (ISA) 2015 Yield Challenge growers achieved yields in the mid- to upper 80s, and even into the 90-bushel-per-acre range. Champaign County grower Jason Lakey and his father, Robert, reached a new verified state record of 108-bushel soybeans. The Yield Challenge is funded by the Illinois soybean checkoff.

Illinois farmers can continue to pursue a new record yield in 2016, although current market conditions may temper spending on crop inputs. Mike Wilson, Soy CCA Envoy with Wabash Valley FS in Allendale, Ill., recommends farmers be more conservative about input purchase decisions, but still smart about where to spend money.

“Take what you have learned from your operation in the last seven to eight years to keep it profitable the next seven to eight years,” says Wilson, who stresses harnessing information and outside resources for success. “Talk to trusted sources, be it another farmer, retailer, consultant, financial guide or marketing guru. Look at soil and tissue tests, yield data and any other relevant information to prepare for 2016. Let’s not just look where we can cut inputs to save money, but also analyze what works economically to improve yield and profitability.”

SELECT VARIETIES WISELY

Great yields start with great genetics and the right maturity group for your area, according to Stephanie Porter, seed sales agronomist with Burrus Hybrids in Arenzville, Ill.

“Knowing the right maturity group is important because soybeans are photoperiod sensitive. Some varieties have a well-adopted maturity that is better suited to your area’s soil types or diseases,” she says.

Because the earliest and latest maturity in each group may differ by as much as two weeks, choosing a 5- to 7-day range between maturities could help spread risk in some years, Porter adds. She also stresses the need to choose the right defensive packages for specific areas and soil types to ensure good emergence and early season vigor.

USE SOIL TESTS TO MANAGE FERTILITY

Good soil fertility is as important for soybeans as it is for any other crop, according to Wilson.

“Look at your soil and tissue tests from 2015 to see what your nutrient needs are and plan adequate nutrient replacement at a minimum,” Wilson says. “Nutrient buildup may need to wait, but at least put back what you take out. Ignoring that is the easiest way to cut yield.”
PROTECT YOUR INVESTMENT

“After choosing your best varieties, I believe in protecting them with seed treatments to help reduce your risk of soilborne diseases and, more recently, soybean cyst nematode and sudden death syndrome (SDS),” says Porter.

“Your second goal after you make your seed decision is to get as many of those seeds out of the ground as possible,” says Wilson. “You need good fungicide/insecticide seed protection for that.”

PLANT EARLIER TO CAPTURE SUNLIGHT

Earlier planting — the end of April through the first week of May in central Illinois — can significantly increase yield potential, says Jack Hardwick, CCA Soy Envoy with Brandt in Springfield, Ill. “Cold soils, frost, seedling diseases and SDS were once legitimate reasons to keep the planter in the shed, but that’s changed in recent years,” he says. “Early planting allows earlier flowering, a longer reproductive period to produce more nodes and pods and earlier harvest.”

CONSIDER ROW SPACING AND POPULATIONS

Row spacing and plant populations will influence yield, according to Emerson Nafziger, Ph.D., University of Illinois research education center coordinator.

“Our trials show a consistent yield bump of four to eight bushels per acre with 15-inch versus 30-inch rows. To maximize yield potential, we recommend a population of 140,000 to 150,000 seeds per acre to achieve a stand of 110,000 to 120,000 plants per acre,” he says.

KEEP IT CLEAN

Even in a down market, weed control is not a place to cut corners, especially if you have had a control disaster, says Karen Corrigan, CCA with McGillicuddy Corrigan Agronomics in Goodfield, Ill. Farmers may be able to cut costs with older or generic chemistries.

“Resistance is a real issue that many farmers face,” she says. “Mix up your chemistries both in season and across seasons to reduce the chance of resistance. It is better to ward off resistance than deal with it after you’ve got it. And if you have marestail or Palmer amaranth, don’t just rely on glyphosate as a burndown. Spike it with 2,4-D or dicamba, but be sure to abide by all label directions, including plant-back restrictions.”

In fields with a history of poor control, Corrigan suggests using a full rate of a preemerge herbicide and include a burndown for emerged weeds.

“It is easier to kill weeds before they come up,” Corrigan says, noting that above all, don’t waste money on an application that is certain to end up failing. “Know your major weeds. Without proper identification, a lot of money can be wasted.”

REDUCE STRESS WITH FOLIARS

Although they won’t overcome nutrient deficiencies in the soil, micronutrients and biologicals can be an inexpensive way to reduce plant stress at important times like flowering and pod set, says Wilson, which can lead to higher yields.

“In mid- to late season, micronutrients and biologicals will likely be the lowest input cost per acre and best bang for your buck. But always look at total cost per acre compared to potential return,” he says.

Wilson says micronutrients and biologicals may cost $3.50-$6 per acre, while a fungicide and insecticide application runs $16-$25 per acre. “Results have been more consistent with the foliars because there is less varietal variability with them. While fungicide and insecticide applications are an important component in a stress mitigation system, disease resistance bred into the plant can make a fungicide less effective. The plant fights off disease on its own,” he says. “Return on investment for a micronutrient and biologicals application may be as much as 10 to one, where the fungicide and insecticide application return may be as low as 2.25 to one.”

Wilson also has had good results with sulfur and iron additions for quick green-up, along with manganese, boron and zinc applications for stress reduction.

“Throughout harvest we saw various stress mitigation products consistently add yield,” he says. “One field where we added fungicide, insecticide and a foliar stress-relief product returned nearly $75 per acre above cost over the untreated check. That’s still relevant at $8.00 soybeans.”

TRY IN-SEASON FUNGICIDES

“In some of the side-by-side trials, we saw a 6- to 10-bushel advantage to applying fungicides,” says Jeff Keifer, Soy CCA Envoy with Elburn Co-op in Courtland, Ill.

“Fungicides also had a nice side benefit this year. As the last of the soybeans were coming over the scale at nine percent and less moisture, those treated with a fungicide were able to hold that last percent or two of moisture and save a little shrink for the grower,” says Keifer.
LEARN WHAT WORKS FROM THE YIELD BOOSTERS

WHAT ALAN SAYS:

KEY TO SUCCESS: Early planting has probably helped the most with getting better bean yields the last three or four years.

VIEWPOINT ABOUT WHAT WORKS: Early planting combined with better genetics and better attention and management overall, have helped us bump yields by 15 to 20 bushels.

We start with a combination seed treatment to help with emergence and to protect yield potential. We also make in-season fungicide and insecticide sprays, and we add micronutrients when needed, especially at key times or when we see any stress on the plants.

We looked at extra fertilizer, including supplemental nitrogen and potash, but those results were not economical this year. Next year, we’ll likely go with a longer maturing bean and slightly higher populations versus the 3.0 and 150,000 seeds we planted in 2015.

Madison is a former 4R award recipient and long-time supporter of strip tilling. He plans to do trials next year using fertilizer in 30-inch strip-till beds versus his standard 15-inch rows.

PARTING THOUGHTS: New tools and technologies are available, but it is just as important to have a trusted and reliable team who can help with recommendations.

WHAT MATT SAYS:

KEY TO SUCCESS: Early planting is key. That and better management overall has made a big difference on our bean acres. As impressive as his 93.94-bushel plot was, Krausz is more pleased with his average farm yields, which are consistently in the mid-80 bushel range.

VIEWPOINT ABOUT WHAT WORKS: We started with the wheat association yield contest a few years ago. After pushing wheat yields with better management, we started to look at beans the same way. It has made a big difference in our operation.

We take a pretty barebones approach. We really focus on what’s affordable and effective to use on all our acres — things that boost yields, but are still profitable. This approach includes a preemerge herbicide application plus fungicide and insecticide seed treatments. I add plant growth regulator and insecticide with my glyphosate post application and spray fungicide at R3.

We’ve looked at other foliars and micronutrients, but have yet to see consistent results.

Krausz plans to try the new ILeVO seed treatment next year and will do more side-by-side trials with nutritionals for a more consistent return on those investments.

PARTING THOUGHTS: While earlier planting is key, don’t just plant on a certain date. Make sure you have the right soil conditions to achieve good emergence.

Alan Madison
Walnut, Ill.
91.48 bushels per acre

Matt Krausz
New Baden, Ill.
93.94 bushels per acre
WHAT JOE SAYS:

KEY TO SUCCESS: Good drainage and fertility along with a good chemical management program are needed as a good, solid foundation to help set yourself up for success.

VIEWPOINT ABOUT WHAT WORKS: I have a personal goal to reach 100-bushel beans. We continue to push an extra one to five bushels each season. Over time, we are trying to push for an extra five to 10 bushels across the whole field. It’s on those broader acres that you make your money, so we focus on the tools and technologies that give us a consistent return.

We do soil tests every two years and especially watch the pH levels in our bean acres. Early planting is another key. This allows us to capture more total sunlight over the season. We inoculate all beans and use high-quality seed treatments including fungicide and insecticide. We also add a micronutrient package with our in-season herbicide spray. We are sure that gives us about a two-for-one return on that investment. We are big believers in adding a fungicide and insecticide at R3 and see consistent results. We have tried additional fungicide applications, but haven’t seen the same consistent results.

PARTING THOUGHTS: I always tell guys you have to be willing to try new things and push your comfort level, whether that’s earlier planting or including a fungicide at R3. It is worth trying.
Seed Treatments Protect Yield Potential

> BY LAURA TEMPLE

Most soybean genetics contain great yield potential. But as soon as seeds are planted, stresses can chip away at that potential.

“Soybeans are more susceptible than corn to soil pathogens during early planting,” says Jason Bond, professor of plant pathology at Southern Illinois University Carbondale. “Soybeans need to emerge quickly to gain their natural resistance to pathogens. After two or three weeks, soybean plants can better defend themselves.”

Stress impairs soybean root system development immediately, however, making it hard for plants to grow to that point.

The environment influences early season diseases. Bond says Pythium, Phytophthora, Fusarium and other pathogens thrive in cool, damp soil conditions common in the spring. Rhizoctonia and other pathogens flourish in well-aerated soil and moderate temperatures.

At the earliest planting dates, insects also threaten soybeans. Bond says bean leaf beetles and cucumber beetles feed on early soybeans. Damage can compound disease stress.

“Adding a seed treatment can protect seeds during vulnerable first weeks, support better emergence and allow farmers to reduce population,” he says. “Many seed treatments, especially fungicides, are systemic and short-lived. They prevent early root damage so plants manage stress better. They wear off in a few weeks as natural defenses take over.”

**NITROGEN ACCESS**

With the push for higher yields, farmers are hearing more about soybean nitrogen needs. Every bushel of soybeans requires about five pounds of nitrogen per acre.

“Soybeans get most of their nitrogen by fixing atmospheric nitrogen into the form they need,” says Kurt Seevers, technical development manager for seed treatments and inoculants for Verdesian Life Sciences. “Soybeans develop nodules on their roots that host rhizobia, the soil bacteria that fix nitrogen.”

Seevers says applying inoculants — strong nitrogen-fixing strains of rhizobia — to seeds promotes nodule development. A symbiotic relationship with rhizobia provides nitrogen.

“Technology for inoculants has improved in recent years, and they are more cost effective than using commercial fertilizer on soybeans,” he says.

Verdesian Life Sciences recently introduced new seed treatment technology related to nitrogen use. “Take Off ST technology helps plants use nitrogen more efficiently,” says Seevers. “The material is water-soluble, so as a soybean seed absorbs water to germinate, Take Off ST is carried into the seed where it helps the plant use even the stored nitrogen in the seed more efficiently.”

For soybeans, this technology is combined with an inoculant. “With the Preside CL, we see more uniform, earlier seed emergence and increased nodulation,” he says.

**YIELD IMPACT**

“Seed treatments show more benefit in years with greater stress,” says Bond. “On average, they deliver a yield increase of two to four bushels per acre, sometimes more in poor soils. But in 2015, most of Illinois received plenty of moisture throughout the growing season, which helped soybeans compensate for early season stress.”

Seevers sees an average yield increase of two to three bushels per acre from the synergy between their inoculant and nitrogen-use technology compared to untreated seed.
Bond recommends selecting genetics, and then considering factors for seed protection:

Availability
- What seed treatments are available from the seed dealer? Typical disease complexes in Illinois soils require multiple modes of action.
- When will soybeans be planted? Bond recommends treating soybeans planted in April and soybeans likely to experience wet conditions shortly after planting.
- Does the dealer have an on-site seed treater? Six to 12 new seed treaters are installed in Illinois each year, allowing farmers to decide if they want seed treated just before delivery, says Layne Harried, Illinois technical sales rep for Verdesian Life Sciences.

Field History
- What diseases have been present in the field? Fields and seed treatments vary. For example, seed treatments and resistant varieties are available to combat sudden death syndrome (SDS).
- Does the field have a history of stand loss, slow emergence, continuous soybeans or standing water? Disease pressure often increases in these environments.
- What impact will field conditions have on rhizobia and the need for inoculant? “Rhizobia are aerobic, so 2015 flooding may suppress rhizobia survival for the coming year,” says Herried. “Organic matter and pH also impact rhizobia survival. Conditions farther north in Illinois are harder for rhizobia. Those soils benefit from inoculants, while many southern Illinois soil types are less responsive to inoculants.”

By the Numbers

The average bushel-per-acre yield increase attributed to fungicide seed treatments over an eight-year period.

Source: Kansas State University Research & Extension

The number of soybean plants per acre where yields tend to reach their maximum if the population is planted at the normal time.

Source: University of Illinois

Soybean seed planting depth where emergence will be more rapid and stands will be more uniform in Illinois.

Source: University of Illinois

The volume of soybean seed treated and planted in 2014. That compares with

30% in 1998 & 8% in 1996

Source: Iowa State University
Can the national average soybean yield reach as high as 85 bushels per acre? Fred Below believes so. The University of Illinois crop physiologist documented more than 100 bushels per acre in field trials in 2015, as he continues to explore the “Six Secrets to Soybean Success.”

“Our goal is to evaluate the effect of each of six factors individually and then, more importantly, together in a high-tech systems approach,” he says. “Most Illinois farmers had excellent yields in 2015. We ran seven trials from northern to southern Illinois, and saw a 14.7 bushel increase overall in yield between our grower standard practice average and our high-tech system yield.”

Below says their standard practice yield was 70.7 bushels. The high-tech system yield was 85.4 bushels. Here’s the six areas he evaluates, with funding from the Illinois soybean checkoff, and where Illinois soybean farmers can focus in 2016:

1. **WEATHER**
   
   Near-ideal August weather was the defining yield factor in 2015, but Below says some early-season efforts can help reduce the negative impact any adverse weather may have on soybean yield. Protecting soybean seed and early planting may promote strong root development, alleviate stress and generate soybean vegetative growth and node formation.

2. **SOIL FERTILITY**
   
   Below’s past studies show applying fertilizer containing nitrogen, phosphorus (P), zinc and sulfur immediately prior to planting can add almost four bushels per acre.

   “We zeroed in on fertility this year and the value of phosphate versus potassium additions and a combination of the two,” he explains. “Contrary to popular belief, we have found phosphate is more limiting than potassium. Most Illinois soybean farmers do not use enough phosphorus.”

   In 2015 trials, Below says adding phosphate alone produced a 5.8 bushel yield advantage. “This was the number one factor driving yield this year. We saw no benefit to potassium alone, and the potassium-phosphate combo was the same result as phosphate alone,” he says.

3. **ROW SPACING**
   
   The advantage of narrow rows varies by location and year, but Below finds a two to nine bushel yield range advantage for 20-inch rows versus 30-inch rows. Narrow row spacings in 2015 trials had a 3.6 bushel-per-acre yield advantage in the standard production system and an 8.3 bushel increase in the high-tech system.

   “We choose 20-inch rows because the same can be used in corn. Narrow rows allow quicker canopy closure and greater light interception than 30-inch rows, and more canopy air movement than 15-inch rows,” he says.

4. **FOLIAR TREATMENTS**
   
   Foliar fungicides and insecticides applied one time at the R3 stage added an average 3.1 bushels per acre. Below notes more than half the yield comes from middle nodes, so protecting middle leaves is critical. One more pod per plant can add two more bushels.

5. **GENETICS AND VARIETY SELECTION**
   
   Choosing the fullest maturity varieties for your area can provide a three to four bushel-per-acre yield advantage, says Below. He saw a 20-bushel yield swing in trials this year between varieties of maturities that would normally be grown in central Illinois, with the fullest maturities generally producing the highest yields.

6. **SEED TREATMENTS**
   
   Fungicidal, insecticidal and nematicidal seed treatments protect yield potential by promoting germination and seedling establishment and early plant vigor. Below saw differences out of the ground with the complete seed treatment in 2015, which ended up being worth 1.6 to 2.8 bushels per acre.

   “The bottom line is that a high-tech system works in soybeans as well as it does in corn,” says Below. “We have validated our six secrets, and we have studied fertility. In 2016, we will focus on soybean variety differences, and screen them for the best foliar and fertility responses.”

   “Most Illinois farmers had excellent yields in 2015. We ran seven trials from northern to southern Illinois, and saw a 14.7 bushel increase overall in yield between our grower standard practice average and our high-tech system yield.”

   FRED BELOW
   
   University of Illinois crop physiologist
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Draper Heads Boost Soybean, Wheat Yields

Kelly Kravig, platform marketing manager for Case IH, and a field test engineer, inspects a soybean field near Holder, Ill., to make sure the combine and draper head are harvesting correctly in Jacob Wade’s field. Typically one of the things Kravig does during harvest is to check to see how well combines and draper heads operate. It is important to walk behind the machine to check for excessive loss and see if adjustments need to be made for factors such as reel speed, cutter height or combine speed.

> BY AMY ROADY

When it comes to getting more soybeans, and more yield, out of the field, some farmers are turning to draper heads instead of the traditional auger head.

“As combines have gone up in size, as horsepower has increased, farmers have looked for heads to match that capacity,” says Kelly Kravig, Case IH platform marketing manager for combines and headers. “Auger heads work well up to certain speeds. But as yields go up, as speeds go up and as power goes up, you have to have a head to match the capacity of the combine.”

Illinois soybean farmer David Droste of Nashville, Ill. has used a MacDon draper head for one season. He reports getting about two to three more soybean bushels per acre. This is true as well for Daryl Cates, who farms near Columbia, Ill., with a John Deere draper head. Kravig says that farmers typically gain one to two bushels per acre.

Compared to auger heads, draper heads work by laying the soybeans or wheat onto a belt and feeding them into the combine. This means that farmers can run their combines 0.5 to 1.5 miles per hour faster. Draper heads also are less susceptible to moisture.

“It is less stressful for the combine operator, too, because of the even feed. It doesn’t plug up as much,” says Cates.

MORE THAN YIELD ADVANTAGE

The ROI (return on investment) comes in two areas, Kravig says. The first is in grain savings. If the head is set properly, shatter loss is reduced and more, lower pods can be harvested. The second advantage is in timing. Draper heads operate more efficiently on bigger equipment. That means that in most situations, farmers can harvest more acres per day with fewer hours on the header and combine. They also can get into their fields earlier and harvest later in the day.

At $12 per bushel beans, Droste estimated that the investment in the more expensive draper head would pay for itself in one to two years. Double-crop farmers may see additional advantages from a draper head. Droste says his new draper head allows him to harvest wheat earlier at a higher moisture so he can get his double-crop soybeans planted sooner.

Draper heads aren’t new, but Kravig says there has been parallel growth with draper heads and bigger machines. For example, Case IH’s 3162 TerraFlex header runs 30 to 45 feet across while the Case IH 3020 auger header runs 20 to 35 feet. The flexible cutter bar allows farmers to get lower pods that normally would be missed, too.

“We’ve started to realize that if we can manage the harvest window efficiently, we can reduce loss,” Kravig says. ■
It is less stressful for the combine operator, too, because of the even feed. It doesn’t plug up as much.”

DARYL CATES
Columbia, IL

Equipment advances are helping Illinois soybean farmers get more beans to market and leaving fewer soybeans in the field. This helps improve yield and profitability.

Draper heads allow soybean farmers to harvest fields more smoothly at faster speeds, higher moisture and with more horsepower on bigger equipment compared to auger heads.
lower commodity prices mean tight margins for farmers around the country, and land values are beginning to adjust. Ag economist Brent Gloy with Agricultural Economic Insights shares his perspective on farmland values, negotiating rents and financing tips for a profitable 2016.

Can growers expect farmland prices to change in 2016?
Crop production returns have fallen in recent years with lower commodity prices. Unless prices pick up significantly this year, we can look for farmland values to come down. We’re starting to see this in the Midwest, and rents slowly are starting to follow. According to the University of Illinois, average cash rents decreased from $234 per acre in 2014 to $228 in 2015, a decrease of $6 per acre. However, it is important to remember you see a quicker reaction on land values than on rents. Land sales typically happen at auctions, which gives immediate feedback.

What is your top piece of advice to farmers hoping to negotiate rent in 2016?
Rent is one of the biggest farming expenses, and it’s tough to negotiate. We see situations where one party feels they are taken advantage of, and this often stems from miscommunication. It is essential for farmers to have open, honest relationships with land owners. Try to understand where owners are coming from, but don’t be afraid to make your point. For instance, bring up other services you provide, such as taking care of the property and paying rent on time. I also encourage farmers to help land owners understand current crop production economics. If they can’t cover variable costs, such as fertilizer and seed, it is hard to justify renting at those prices.

Do farmers have different rental options to discuss with land owners?
This is a good time to discuss the options available. I encourage farmers to ask with the current outlook whether they can agree on a little lower base rent and still make money. If prices happen to improve or if yields turn out to be better than anticipated, some of that gain could be shared with land owners. Farmers may have to give up some of their upside to get the rent down to a price that allows them to feel comfortable planting their crops. These flex leases offer the benefits of crop share leases, but in a much simpler fashion. They depend on farmer financial positions and farmer willingness to take risk, but they could offer a strong advantage this year.

What is a common mistake you see farmers make in farmland decisions?
Purchasing farmland is both an emotional and economic decision for a lot of people. We may only get one chance to buy it, after all. This becomes a problem when people let the emotional side drive the whole decision, so they buy at any asking price. The financial implications of that choice last a long time. I encourage people to put a dollar value on the emotional benefit — if it’s next to your farm or if a relative owned it. Once the price exceeds that value, walk away.

Should farmers finance land differently in times of low commodity prices?
People like to pay off farmland loans quickly, aiming to use a lot of cash or to avoid mortgages. This can be a mistake with tighter margins. Paying more of that cost up front makes the business less liquid, and there is less cash available to pay for other expenses. This can lead farmers to take on more debt than they can handle. I recommend farmers finance long-term assets with long-term debt, and short-term assets with short-term debt, especially with lower profit margins.

For more tips on farm profitability, visit Gloy’s website at ageconomists.com and listen to ISA’s Profitability Matters series at www.ilsoy.org/profitability/management-matters. The series provides insight about managing Illinois soybean farms with profitability top of mind.

“Crop production returns have fallen in recent years with lower commodity prices. Unless prices pick up significantly this year, we can look for farmland values to come down.”

BRENT GLOY
Ag Economist
SOMETIMES OPPORTUNITY LOOKS YOU RIGHT IN THE FACE.

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*Fall 2014 comparative nitrogen costs; Laura Pepple, University of Illinois Extension, estimating cash value of applying 3,500-4,500 gal/acre of finishing hog manure, minus application costs.

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Funded by the Illinois soybean checkoff.
Organic Matter Builds Soil

> BY LAURA TEMPLE

A common long-term goal for farmers is to leave the land in better shape than when they started farming. Although geography and soil types don’t change, fields improve with management that builds organic matter content over time, including manure applications.

“Organic matter is a source of carbon from the decomposition of plant and animal residues, including manure,” explains Morgan Hayes, University of Illinois assistant professor and Extension specialist. “Adding organic matter in soil impacts its characteristics by improving soil tilth and water-holding capacity and benefiting crops.”

“Manure fertilizer is a cost-effective option, and it benefits the soil.”

CARRIE POLLARD
dairy farmer from Rockford, Ill., and technical services manager for Bethany Swine Health Services

“One farmer who gets manure fertilizer from nearby hog farms does soil tests every four years,” he says. “His soil numbers have been steadily increasing over time, and are probably comparable to land in no-till for 10 or 20 years. Though the methods of adding organic matter are different, we see similar long-term soil characteristic responses.”

Where manure is available, experts agree it provides crop nutrients. Organic matter is an additional long-term benefit that translates to yield potential.

Deverell says manure works in the soil types he deals with in northern Illinois. “Manure can benefit lighter, sandier soils that could use more organic matter,” he says. “However, it’s critical to follow best management application practices to provide nutrients crops need and keep manure in place.”

Carrie Pollard, dairy farmer from Rockford, Ill., and technical services manager for Bethany Swine Health Services, manages manure application for her dairy and several sow farms in north-central Illinois.

“Manure fertilizer is a cost-effective option, and it benefits the soil,” she says. “Farmers who understand the value of manure want more and more, regardless of the logistics.”

Pollard sees the value of manure in crop performance. “Ground with manure doesn’t get as dry during drought, and we’ve applied manure on fields rotating between corn and soybeans that have yielded 75-bushel soybeans and nearly 200-bushel corn,” she says.

Injecting manure adds nutrients and organic matter to soil that benefits crops both this season and long term.

> BY LAURA TEMPLE

ISA MONETIZES MANURE

With funding from the Illinois soybean checkoff, ISA shares the benefits of diversifying farms with livestock, focusing on the value manure provides crops for Illinois farmers. Diversifying farms spreads risk, allows family to return to the farm, builds a local market for soybean meal, and cuts fertilizer costs.
MANURE MANAGEMENT
New Zealand-Style

Just as Illinois farmers manage nutrients on a seasonal basis, so do dairy farmers in New Zealand. The difference is that in New Zealand, dairy farmers breed cows to calve when nutrients are needed most on pastures to encourage plant growth. In the fall and winter, as the pastures’ nutrients wane, cattle are moved part-time to paddocks to keep manure and nutrients contained. This system ensures milk production and pasture quality peak at the right times.

Scientists at Scott Farm near Hamilton, New Zealand, explain how they use different equipment to monitor and manage nutrients in dairy cattle pastures. Pastoral 21 Next Generation Dairy Systems is a five-year farm program that aims to provide proven, profitable, simple, adoption-ready systems that lift dairy production and reduce nutrient loss. The project is supported by DairyNZ, a public-private partnership supported by a levy on milk solids, and AgResearch.

— MARK NIEBRUGGE – SIGEL, ILLINOIS

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USSEC Takes Moms to China to Talk Biotechnology

The U.S. Soybean Export Council (USSEC) and International Soy Growers Alliance (ISGA) recently took a third group of American moms to China for the Moms Advocating for GM Technology in China (MAGIC) III meetings. Moms met with key Chinese social media opinion leaders and hosted a town hall meeting with a Chinese online platform. They shared scientific information and discussed biotech safety.

The overall goal of the program is to build confidence and head off any misinformation that appears in the Chinese press and social media by reaching out directly to Chinese consumers with scientific facts. The mission is expected to help generate hundreds of thousands of website views. Ultimately, the groups hope to send a positive message about biotech safety while leveraging those views and demonstrating to Chinese government officials the commitment of ISGA to sharing biotech safety information.

Illinois Farm Bureau Elects Two Women to Board

Two women were elected to the Illinois Farm Bureau board for the first time in history late last year as the group enters its 100th anniversary. Tamara Halterman is a farmer from Mazon, Ill., and has served as secretary of the Grundy County Farm Bureau, as chair of its fundraising foundation and co-chair of its women’s committee. Michelle Aavang is a corn, soybean, wheat, hay and beef cattle farmer near Greenwood, Ill. She also is a McHenry County Farm Bureau Board member and president and sits on the Illinois Farm Bureau resolutions and policy review committees.

Also honored at the Illinois Farm Bureau annual meeting was Donna Jeshke, as Farm Woman of the Year. The award was presented by U.S. Senator Mark Kirk.

Beef Association Seeks Partners for Ribeye Corral

The Illinois Beef Association (IBA) is seeking new sources for branded beef products to serve at the Illinois State Fair Ribeye Corral in 2016. During the 2015 state fair, the corral featured locally raised, grain-fed black Angus beef from Gridley Meats and Certified Angus Beef from Tyson Fresh Meats in Joslin, Ill.

The association partners with Nelson’s Catering of Springfield in preparing menu items and managing the corral. All processors interested in supplying fresh or processed beef are encouraged to contact the association at 217-787-4280 or reid@illinoisbeef.com.

USFRA Releases Discovering Farmland Curriculum

The U.S. Farmers and Ranchers Alliance (USFRA) partnered with Discovery Education to create a curriculum for high school students for a firsthand look into modern agriculture, and is making that curriculum available nationwide. The project stemmed from the award-winning documentary, Farmland, which also was funded by USFRA, and includes both science and social studies lessons. Topics covered include sustainability, the new science behind farming and entrepreneurship. Encourage educators and others to visit www.discoveringfarmland.com to download the lesson plans and videos and to view the original documentary.

CALENDAR OF EVENTS

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At ILSoyAdvisor.com, you’ll find management and production tips, the latest research, market information, weather forecasts and more. It’s always relevant and from local experts—and it’s all within a click of a button. Visit ILSoyAdvisor.com today for the tools to help increase your yields.

DID YOU KNOW?

YOUR CHECKOFF FUNDS developed the ILSoyAdvisor webinar series to highlight tools and technologies to improve soybean production.

Find out more at ILSoyAdvisor.com
Illinois Farmer Advocacy Helps Build Cuban Trade Opportunities

Effective trade relations require continuous engagement and collaboration. Illinois Soybean Growers (ISG) is working to expand export markets with buyers who demand the quality Illinois soybean farmers can provide. That includes Cuba, a market where ISG leadership is leading to trade opportunities through building relationships and seeing firsthand the opportunities.

Since 2012, ISG has visited Cuba six times with two key goals: increase soybean and other ag exports, and educate Illinois legislative and business leaders about the economic value of trade.

Legislators Get Up-Close Look

Last October, a high-level, bi-partisan group traveled to Cuba, including U.S. Representatives Cheri Bustos (D, IL-17) and Rodney Davis (R, IL-13), and other agricultural and industry leaders. The trip, sponsored by the Illinois Cuba Working Group (ICWG) and ISG, provided an up-close look at how the two countries can overcome disparate political climates to develop a mutually beneficial relationship founded in agriculture.

“It is important that Illinois leaders see and hear firsthand the potential impact Cuban trade has for Illinois soybean growers,” says Mike Levin, ISG director of issues management and analysis.

Valued at nearly $98 million in 2014, soy is Cuba’s second-largest U.S. import, behind chicken, a top soybean consumer, according to USDA. U.S. producers are able to export agricultural commodities to Cuba. However, financing and marketing restrictions limit U.S. competitiveness in the Cuban market. Through 2012, the U.S. was the largest exporter of agricultural goods to Cuba despite these restrictions. In 2013, the U.S. slipped to second, and in 2014 slipped to third.

“We can’t lose opportunities that support our economy, which is why we’ve been directly involved with advocating for legislation that would give growers better access to Cuban trade,” says Daryl Cates, soybean farmer from Columbia, Ill., ISG chairman and a participant on the October 2015 Cuba trip. “As a top soybean-producing state in the country, ISG wants to make sure Illinois growers have the resources they need for that.”

Reps. Bustos and Davis showed bi-partisan support last November by creating the Cuba Agricultural Exports Act (H.R. 3687). The act would remove restrictions on export financing and give producers access to USDA marketing programs that help the U.S. compete in foreign markets. Cates says this could put the U.S. back in the number one position for Cuban soybean imports and could help increase profitability for Illinois soybean growers.

Continue Push for Progress

About a year ago, President Barack Obama made the historic move to normalize trade with Cuba. Improving diplomatic relations are leading to even more progress.

Meanwhile, ISG is working in Washington, D.C., to ensure trade initiatives keep moving forward, especially by calling for an end to the embargo. Several key pieces of legislation are in the works that support soybean growers and foster Cuban relationships. With these efforts, ISG will continue to lead and support policy beneficial to Illinois soybean growers.

Cheri Bustos and ISG chairman Daryl Cates talk with various Cuban representatives during the October 2015 trade trip.
Kris Petersen grew up near Pontiac, Ill. He received the Illinois soybean checkoff-funded crop sciences scholarship in 2011, as a transfer student from Parkland College. He then attended and graduated from the University of Illinois in 2013 with a degree in crop sciences and agribusiness. He now works as part of his family's four-plane, aerial application business, Pontiac Flying Service. The Petersens provide liquid spraying, dry fertilizer application and cover crop seeding.

Petersen is a pilot, and also is working on his airframe and powerplant (A&P) certification, which is issued by the Federal Aviation Administration. The certificate will allow him to be an aircraft maintenance technician who can inspect aircraft and perform preventive maintenance on the company's planes. He also works in the family business' logistics and planning efforts.

**HOW DID YOU GET INTERESTED IN CROP SCIENCES?**

My dad started Pontiac Flying Service in 1997 when I was six years old. I also have two brothers-in-law who farm. I had always considered becoming a pilot or getting involved with farming in some way. I decided that when I went to college I wanted and needed to learn more about chemical applications and identifying crops, weeds and diseases.

**WHAT DID YOU DO DURING COLLEGE TO HELP MEET YOUR PROFESSIONAL GOALS?**

I was at the University of Illinois for my junior and senior years. Classwork really helped prepare me for this career, as did networking with other students and other scholarship winners on campus. I was a member of the Alpha Gamma Rho fraternity and active in Alpha Zeta, which also were huge helps in preparing me for a job in agriculture. During the summers, I worked for the family aerial application business and attended professional conferences with my parents. I also had the opportunity to meet with our customers and learn that part of the business.

**HOW DID THE SCHOLARSHIP HELP YOU BEYOND THE FINANCIAL ASSISTANCE?**

The financial assistance was tremendous. In addition, I had the opportunity to meet with people who I might not otherwise have met. I attended the ISA Soybean Summit one year, and got to hear the perspectives of others who work in agriculture and to network. I have found that type of out-of-classroom knowledge was invaluable to me in college as I prepared for the future.

**WHAT IS YOUR ADVICE TO OTHER STUDENTS CONSIDERING CROP SCIENCES AS A CAREER?**

First I would suggest learning more about possible careers in crop sciences. As I explored the opportunities available, it became clear to me that I needed to major in both crop sciences and agribusiness to prepare me to take over the family business at some point in time. I also think it is important as a student to look for chances to attend a lot of different meetings and conventions and get involved with organizations that might help you meet others in agriculture.

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To learn more about the ISA’s crop sciences scholarship for future years, visit [http://www.ilsoy.org/social-responsibility/crop-science-scholarship](http://www.ilsoy.org/social-responsibility/crop-science-scholarship).
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