Are You Ready for 2012 Weeds?

- Prepare for Palmer Amaranth
- Watch for Weed Resistance
Growing Specialty Soybeans Makes More “Cents!”

Selling differentiated soybeans can bring in extra revenue without having to expand acres. Isn’t it time you looked into getting more per bushel?

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*Funded by the Soybean Checkoff
Cover Story
Take Diversified Approach with Weeds
The days of one-pass postemergence weed control are gone. Growing concerns about weed resistance have led crop specialists to modify management recommendations. Read more about what the experts are telling soybean farmers to try in 2012.

Animal Agriculture
Is Manure Right for Your Farm?
Farmers looking for fertilizer options should not look past the livestock operation down the road. In some instances, manure may be the best choice for beefing up the farm’s fertility.

Yield
Prepare for Palmer Amaranth
Palmer amaranth is perhaps the most aggressive pigweed species for growth rate and competitive ability in the state. Weed specialists say more Illinois soybean farmers may see it in 2012, and they have suggestions on how to handle it.

Sustainability
Sustainable Practices can Pay Off
Part two of Illinois Field & Bean’s sustainability series looks at the economic side of sustainability, and how sustainable agricultural practices pay off for farmers and communities.

Market Access
Yield Protection Helps Meet Market Demand
Efficiently and cost-effectively protecting soybeans from pests is critical to producing a profitable crop that is desired by domestic and global customers. And you may find some of those options are expanding.

Transportation
ISA Takes “Rubber Meets the Road” Approach
Researchers traveled the state earlier this year, looking at bridges and roads, talking to county engineers, and learning more about the need for repairs. What’s next? Seeking solutions to help keep Illinois soybean transportation competitive.

Customer Profile
Illinois Pursues Many Paths to Meet Mexico’s Needs
Mexico is a leading U.S. soy customer on many levels. And Illinois checkoff-funded programs take several paths to get soy from Illinois to Mexican food retailers and livestock operations.
Where are You on Weed Management?

Just a few years ago, many soybean farmers were content with a successful mostly one-pass, postemergence weed control strategy. You could plant glyphosate-resistant soybeans and check weed control off the list. Unfortunately, more Illinois soybean farmers are finding, sometimes the hard way, that it is time to shift weed management gears. Our post control strategies must be replaced with integrated weed management strategies that call on several, season-long tactics.

ISA is investing soybean checkoff dollars in two primary weed management research areas; weed resistance and herbicide management. Ongoing work at state universities is targeted at finding the best ways to deal with more weeds becoming resistant to more modes of action.

Illinois soybean farmers are fortunate to have great in-state research capabilities for weed science and other crop management areas. At the University of Illinois, for example, Aaron Hager, Extension weed specialist, is focusing on management strategies for waterhemp, horseweed and the latest growing threat, Palmer amaranth. Bryan Young, weed scientist at Southern Illinois University Carbondale, is exploring much of the same for southern geographies.

Since the state of Illinois comprises eight different soil types and four different maturity group zones, production research is customized to varied state growing conditions. We have a network of 13 test fields and 40 sentinel plots that cover the state. The network gives researchers access to data that is unique to each region to better assist soybean farmers statewide.

Weeds is one of five priority areas, or managed research areas (MRAs), that are funded by the soybean checkoff. The goal is to try and solve specific production problems. ISA leaders carefully monitor research investments to assure they deliver value to Illinois soybean farmers.

Research projects are chosen based on farmer priorities. Project selection begins with formation of research teams comprised of soybean farmers, researchers and advisors familiar with state and national programs. Scientists serve as team leaders. We together review priorities, set research objectives and then tailor studies to meet those objectives.

Before heading to the fields this spring, read through the practical weed management advice found in this issue of Illinois Field & Bean. I also encourage you to be proactive in reporting any new weed or herbicide problems you face this season, so we can continue to fine tune our soybean research efforts and invest checkoff dollars in the projects that can make a difference.

Matt Hughes
ISA Chairman
Site of Action Key to Sound Weed Management Plan

Weed resistance is one of the most important issues facing Illinois growers today. Resistant weeds can threaten crop yield potential, valuable input investments, land values and the very livelihood of growers. Currently 22 different species of resistant weeds exist in Illinois. The most widespread of these — common waterhemp — is present in an estimated five million acres.

The spread of resistant weeds can be traced back to several factors, but especially to an over-reliance on a single chemistry. Some weeds, such as waterhemp, are developing resistance to multiple chemistries. This makes it vital to incorporate more comprehensive and field-specific weed management and to utilize more than one herbicide site of action (SOA).

SOA may be a new consideration to some growers. The term refers to the biochemical site within a sensitive plant where a herbicide has its toxic impact. Although it is easy to assume using two different herbicides means two different sites of action, this is not always the case.

To ensure you rotate chemistries effectively to vary SOAs, check herbicide labels or work with an Extension agent, retailer or technical service representative.

Utilizing multiple sites of action helps accomplish two things: effective control of weeds during the season, and minimized selection pressure that could lead to additional populations of resistant weeds. Strategies such as overlapping residuals, tank-mixing and varying application timings can help growers use different sites of action. In addition to rotating sequences and mixtures of herbicidal sites of action and chemistry, a complete weed resistance management plan also should include scouting, proper planning and cultural and mechanical strategies.

ISA’s Yield Challenge is an excellent example of the benefits of a sound weed management program. Nine grower teams sponsored by BASF placed first or second in their districts in the 2011 ISA Yield Challenge and reported an overall average yield increase of 6.45 percent.

For the program, growers farmed side-by-side plots using traditional methods on one plot and innovative techniques on the second plot. Many of the BASF-sponsored teams used solutions and herbicides on their innovative plots to help control weeds and maximize yield potential. One of these teams earned the highest percentage yield increase in the program.

BASF research results demonstrate that the more intensively that soybeans are managed, the more likely that higher-yielding acres will result. The Yield Challenge results prove that we are accomplishing our goals, which are to help growers get the most out of every acre by breaking yield barriers through an intensive crop protection management approach.

A.J. Woodyard is a technical service representative with BASF Crop Protection. BASF is an industry leader and strong partner to the farming industry, providing well-established and innovative fungicides, herbicides and insecticides. Farmers use these products and services to improve crop yields and quality.
Take Diversified Approach with Weeds

By Barb Baylor Anderson

For most Midwest soybean farmers, the days of one-pass postemergence weed control are gone. Growing concerns about weed resistance have led crop specialists to modify management recommendations. Preemergence herbicides and mechanical weed control are back in the mix.

“The main push is to get back to early-season weed control,” says Jeff Gunsolus, University of Minnesota Extension weed scientist. “That is still the most profitable option and the way to go for the highest soybean yield potential. Match the right herbicides with the right weeds.”

Gunsolus encourages farmers to match strategy to specific weed control needs. “Preemergence herbicides are a consideration in fields with troublesome weeds. To be effective, postemergence herbicides should be sprayed when weeds are in the two-to-three-inch range, not the four-to-six-inch range,” he says. “Farmers also can use preemergence herbicides or a rotary hoe to handle early weeds, while a good crop canopy can provide ‘free’ weed control for later-emerging weeds. Finally, walking beans is not popular, but still is a good way to obtain long-term benefit for short-term pain.”

Watch for Weed Resistance

While soybean checkoff dollars are being invested in finding solutions to the challenges posed by weed control, weed specialists encourage soybean farmers to take a proactive approach now by understanding the issues and working to minimize weed resistance.

“Weed resistance is a growing problem in terms of weeds and herbicides involved. The Illinois Soybean Association (ISA) is funding several university research projects so farmers can do a better job of managing weeds,” says Ross Prough, soybean farmer from Greenfield, Ill., and ISA vice chair for yield. “Resistance to glyphosate especially gives farmers a greater challenge.”

The same is true in Minnesota. “Farmers here plant Roundup Ready corn, soybeans and sugar beets. We need to get away from this monoculture strategy and use modes of action other than glyphosate,” says Greg LeBlanc, soybean farmer from Crookston, Minn., and Minnesota Soybean Research & Promotion Council research committee chair. “The investment of checkoff dollars we make in university research is invaluable to solving weed control issues.”

Gunsolus says giant and common ragweed and common waterhemp show increasing tolerance to glyphosate in Minnesota. Common lambsquarters exhibit tolerance to most postemergence herbicides. In Illinois, common waterhemp and horseweed (marestail) are on the resistance list, along with increasing concern for Palmer amaranth moving up from the southern part of the state. Ohio soybean farmers must manage resistance issues with marestail as well.

“No is the time to develop a plan and take control of herbicide-resistant weeds before they take control of you,” says Gunsolus. “Due to long-term ex-
Greg LeBlanc says investment of soybean checkoff dollars made in university research is valuable to solving weed control issues.

Photo submitted by Minnesota Soybean Research & Promotion Council

March 2012

Illinois Field & Bean

Get Away from Only Glyphosate

Aaron Hager, University of Illinois Extension weed specialist, tells farmers that if they suspect a weed resistance problem, chances are high that resistance exists. Problems may begin slowly, he says, but can grow exponentially by the next growing season if left unchecked.

“Growers could be in for a rude awakening in 2012 in dealing with resistant weeds,” he says.

Gunsolus suggests that farmers in all soybean fields generally:

- Select herbicide sequential and tank-mix partners for glyphosate that will effectively control weeds that have become difficult for glyphosate to control.
- Start with a preemergence residual herbicide to control early-emerging weeds and reduce yield loss potential due to weed competition from a delayed post glyphosate application.
- Apply glyphosate and post tank-mix partners on three- to four-inch weeds.

Farmers that already have confirmed glyphosate resistance may need different tactics:

- Use Liberty Link corn or soybeans for another postemergence herbicide strategy with the use of Liberty herbicide. Best results follow a preemergence herbicide.
- Limit glyphosate use where effective herbicide alternatives to glyphosate exist. Target glyphosate use in crops where weed control is of greatest value.
- Use inter-row cultivation.
- Rotate to early-season competitive crops, such as small grains.
- Take control now, so the weed seed bank doesn’t become a problem.

Waterhemp Resistance Rises

Waterhemp may be the most problematic annual broadleaf weed species with resistance plaguing Illinois farmers, according to Hager. He adds that selection and evolution of resistance is not limited by state boundaries.

“Waterhemp has several characteristics that make it well suited for resistance to herbicides from various site-of-action families. Resistance to five site-of-action families has been documented in Illinois, and is becoming increasingly common,” he says. “Exposing a weed population to multiple management tactics -- whether multiple herbicides or herbicides and non-chemical control practices -- reduces selection for resistance to any particular tactic.”

Marestail Problems Mount

Marestail has become a challenging broadleaf weed in minimum and no-till systems across much of southern Illinois and in Ohio. Unlike many annual species, marestail may exist as a winter or summer annual. Mark Loux, Ohio State University Extension weed specialist, says spring-emerging marestail has been most problematic in the southern half of Ohio.

“Marestail competes with soybeans throughout the growing season, and reduces crop yield,” he says. “It matures in late summer or early fall, which is late enough to interfere with harvest.”

Resistance to several herbicide classes has been documented. Hager says where tillage is not an option, existing plants should be controlled before they exceed two to four inches in height.

Loux provides the following advice to soybean farmers for managing marestail:

- Use a spring burndown to ensure the field is free of marestail at planting and use residual herbicides to control marestail for another six to eight weeks.
- Marestail is most easily controlled when in the seedling or rosette stage. Spring burndown herbicides should be applied when plants are less than four inches tall.
- Marestail populations with resistance to glyphosate or ALS inhibitors are widespread. Many have multiple resistance to both sites of action. Growers should not expect effective postemergence control with combinations of glyphosate and Classic, Synchrony or FirstRate, except in fields with no history of resistance or post control problems.
- Liberty Link soybeans are most effective, especially with high marestail populations.
- Apply Liberty postemergence before marestail exceed six inches in height. Liberty can be applied at higher rates for taller plants or plants that survive herbicide treatments.

University of Illinois’ Aaron Hager says soybean farmers could be in for a rude awakening in 2012 in dealing with resistant weeds.
Animal Agriculture

Is Manure the Right Fertilizer for Your Farm?

Animal agriculture is the number one customer of Illinois soybean farmers. Is it possible that livestock producers might be able to reciprocate on a different level? The answer is, it depends.

“Illinois soybean farmers should consider using manure as a source of fertilizer, if they can obtain the manure at a cost-per-pound-of-nutrient-applied below that of commercial fertilizer,” says Bob Hoeft, University of Illinois Extension specialist serving as interim associate dean. “But manure is more difficult to manage than is commercial fertilizer.”

Hoeft encourages soybean farmers considering manure to weigh the options:

- Commercial fertilizer allows farmers to apply nutrients in the ratio needed for the soil and crop. With manure, the ratio of nutrients is predetermined and may not match the need of the crop. For example, when a farmer applies enough manure for a corn crop, he is applying far more phosphorus (P) than is needed on most fields. The extra P will not go anywhere, but no reason exists to apply it if it won’t be used in the next few years.

- Getting an accurate estimate of the actual nutrient content of manure is difficult. Liquid manure must be thoroughly mixed before sampling. Even with a good mix, content may vary as it comes from storage, especially if mixing is not continued through the process.

- While manure contains all three key nutrients, nitrogen (N) and P are the two most important. The concentration of potassium (K) will be relatively low.

- N and P are generally present in organic compounds and must be broken down by microbial reactions before nutrients are available. This “mineralization” requires a warm, moist area for organisms to complete the process. Because of the involvement of organisms and the impact of soil moisture and temperature conditions on their activity, it is difficult to predict the actual rate of mineralization. Slow N mineralization may result in N-deficient corn. Fast mineralization may result in less efficient use of N.

“Soybean farmers also must consider how flexible the manure provider is in terms of removal from storage,” says Hoeft. “Spring application is best from a nutrient efficiency standpoint, but fall is best in terms of reducing the potential for compaction. An agreement should exist between provider and purchaser that manure is not required to be moved when soils are too wet.”

Hoeft notes that manure can contribute to overall farming sustainability if nutrients are purchased for a lower price than commercial fertilizer, and the manure is managed properly to avoid nutrient loss and over-application of P. But with today’s fertilizer prices, he says few livestock producers may be willing to give up their natural resource.

“Manure used to be considered a liability for some livestock operations. That no longer is the case,” he says. “The amount of manure available for distribution to other farms is very limited, and the total amount of nutrients available around the state from manure is but a small fraction of the amount of nutrients needed to produce 20 million acres of corn and soybeans in Illinois.”

Illinois Extension Specialist Bob Hoeft says spring manure application is best from a nutrient efficiency standpoint, but fall application is best in terms of reducing the potential for compaction.

Bob Hoeft says Illinois soybean farmers should consider using manure as a source of fertilizer if they can obtain it at a cost-per-pound-of-nutrient-applied below that of commercial fertilizer.
Illinois soybean farmers have had to adjust weed management strategies to tame waterhemp. But farmers increasingly now must deal with waterhemp’s cousin, Palmer amaranth. The tough weed is perhaps the most aggressive pigweed species for growth rate and competitive ability.

“Palmer amaranth is most common in the southern third of Illinois. But similar to waterhemp’s expansion during the 1990s, the weed may be expanding its range northward,” says Aaron Hager, University of Illinois weed specialist. “Where waterhemp can add close to one inch of new growth per day under good growing conditions, Palmer amaranth can add multiple inches. It can cut soybean yields dramatically, up to nearly 70 percent left unchecked.”

Palmer amaranth can reach six to eight feet in height, and produce more than one billion seeds per acre. “This species has already dramatically changed farming practices in the Mid-South and Southeastern U.S. The species is resistant to many herbicides in various parts of the country, including at least one population resistant to glyphosate in southern Illinois,” he says.

Part of the challenge with Palmer amaranth comes in accurately identifying the weed species, especially during early growth stages. Hager looks for relatively long cotyledon leaves in immature plants compared with other *Amaranthus* species. As plants become older, Hager looks for a poinsettia-like appearance and sometimes white, v-shaped marks on the leaves. In addition, leaves are attached to the stem by petioles that are usually as long or longer than the leaf.

Bill Raben, soybean farmer from Ridgeway, Ill., and ISA vice chair for high quality, says some Palmer amaranth is present in his county, Gallatin, in southeastern Illinois. “While it is not a significant problem, we are aware of it and know that crop specialists have had success treating it,” he says. “If Palmer amaranth does develop, we know it takes a specific control program.”

### Weed Resistance is ISA Research Priority

Current soybean checkoff-funded research priorities include weed resistance and herbicide management. Most of the 2011 projects were carried over into 2012. One new project added involves an evaluation of Liberty Link soybean tolerance to Liberty herbicide. ISA is interested in having university researchers examine and confirm the Liberty use protocol is practical for Illinois soybean farmers.

### Integrated Control a Must

Both soil-applied and postemergence herbicide programs can provide good control of Palmer amaranth, but Hager says each has some basic considerations that can influence the degree of success. The most consistent management program involves an integrated approach with soil-applied herbicides, postemergence herbicides and mechanical cultivation.

“Application timing can have a significant impact on the success of soil-applied herbicides,” he says. “Palmer amaranth appears capable of emerging later into the growing season than many other summer annuals. Application closer to planting time may enhance control later.”

Hager recommends triazines, dinitroanilines, chloroacetamides and protox inhibitors as the most effective soil-applied herbicides. Postemergence herbicides that demonstrate control or suppression include synthetic auxins, diphenylethers, glyphosate and HPPD inhibitors.

“Several post herbicides are effective. Application rate, timing, spray additives and volumes all influence how well they perform. Delaying applications is not recommended,” he says.

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**Is it Palmer amaranth or Waterhemp?**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Palmer amaranth</th>
<th>Waterhemp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young leaves</td>
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<tr>
<td>Shape</td>
<td>Rounded</td>
<td>Lancate</td>
</tr>
<tr>
<td>Older leaves</td>
<td>Petiole</td>
<td>Longer than blade</td>
</tr>
<tr>
<td></td>
<td>Markings</td>
<td>“V” variegation</td>
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<tr>
<td></td>
<td>Pubescence</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Inflorescence</td>
<td>Feet</td>
</tr>
</tbody>
</table>

Photos submitted by Aaron Hager
Sustainable farming practices are all about efficiency and precision -- putting the right inputs at the right rates in the right places at the right times. Also known as the 4Rs of nutrient management, these practices help farmers improve their profitability by increasing productivity and decreasing costs. Inputs such as fertilizer are put exactly where they are needed.

“We continue looking for better and smarter ways to manage our acres. Keeping nutrients and other inputs in the field can increase profitability while protecting the environment,” says Ron Moore, soybean farmer from Roseville, Ill., and ISA vice chair for sustainability.

Matt Hughes, soybean farmer from Shirley, Ill., and ISA chairman, agrees. “On my farm, I am constantly looking for ways to improve efficiency and profitability,” he says. “As margins have gotten smaller, precision ag allows me to continue to be profitable through economic variability.”

Hughes cites differences in efficiency between his farming practices and his grandfather. “My grandfather farmed using draft horses and very little technology as we think of it today,” he says. “Half of what his 160 acres produced went to feed the draft horses. The other half of the acreage yielded enough to support his family and maybe one or two other families.”

Today, that same acreage provides food, fuel and fiber for people all over the world. Hughes cites more efficient and sustainable farming practices. “I have embraced a lot of different practices and technologies on my farm for those reasons,” says Hughes. “For example, no-till farming helps preserve and improve soil quality. Dramatic improvements in plant genetics also are helping soybean farmers produce food more efficiently.”

Sustaining economics for the long-term is important not only to soybean farmers, but also to their communities. A 2009 study conducted by the National Soybean Research Laboratory (NSRL) and University of Illinois Department of Agricultural and Consumer Economics found that the three major soybean industry sectors in Illinois (oilseed farming, oilseed processing and fats/oils refining and blending) had a direct, positive impact of $18,647 million on the Illinois economy and were responsible for another $1.05 billion dollars of indirect impact on the state’s economy.

“Soybean farms are major businesses, providing local jobs, tax revenue and disposable income spent at local businesses,” says Moore. “That helps improve the economic health of our state.”

Matt Hughes says that as margins have gotten smaller, precision ag has allowed farmers to continue to be profitable through economic variability.
Yield Protection Helps Meet Market Demand

Planting is just around the corner, along with a fresh chance to produce a high-yielding, high-quality soybean crop. But after an odd winter of icy cold snaps mixed with above-average temperatures, the potential for yield-robbing pests lurking in fields is high.

What diseases live in last year’s trash? Will soybean aphids show up? How hard will it be to control weeds with glyphosate?

Efficiently and cost-effectively protecting soybeans from such pests is critical to producing a profitable crop that is desired by domestic and global customers. Much of that protection exists within the plant itself, in the form of both biotech traits, such as herbicide tolerance, and native traits, like soybean cyst nematode (SCN) resistance.

“Research is developing new traits to help farmers manage pests and protect yield, and ISA is monitoring approvals and trait availability,” says Bill Raben, soybean farmer from Ridgway, Ill., and ISA vice-chair for quality.

Growing Options

With glyphosate weed resistance spreading through Illinois, farmers need to follow development of new herbicide-resistant traits and systems.

“Soybean seed companies are focusing on new herbicide-tolerant traits because weed resistance is the number one soybean production issue in North America,” says Doug Miller, seed technology manager for the Illinois Crop Improvement Association. “We are working with a variety of seed companies to introgress new, licensed traits into their seed lines. Farmers will continue to have more herbicide choices to control all weeds.”

Miller explains that while biotech traits are undergoing regulatory review, his team can add them into seed lines in six or seven generations. An as independent, non-profit association, Illinois Crop Improvement can complete the process in just two years, allowing seed companies to efficiently deliver new traits to farmers in a timely fashion.

Both native and biotech traits delivering resistance to soybean aphids, SCN and Asian soybean rust also are available, with additional traits for those pests in development.

Expanding Gene Pool

Breeders rely on genetic diversity within soybeans, and occasionally wild soybeans, to develop varieties with disease and pest resistance. But university research is uncovering new sources for such traits from wild plants that are distantly related to soybeans.

“Our study diversifies the genetic base of soybeans by developing a method for successfully hybridizing soybeans with distant relative Glycine tomentella,” says Ram Singh, University of Illinois agronomist. Glycine tomentella is an Australian wild perennial that commonly grows like a weed.

“We have isolated several new soybean lines resistant to soybean rust, Phytophthora root rot, sudden death syndrome and high yield,” Singh says. “This study unlocks useful genes that will impact future soybean breeding efforts by adding new genetic material not available in the past.”

Meeting Market Needs

“We tell seed companies we want yield, so they focus on ways to protect yield potential,” Raben says. “We also must remember quality, protein and oil content, attracts processor attention. To maximize profits, we need to look at both traits for yield and quality.”

Soybean Herbicide Tolerant Traits

<table>
<thead>
<tr>
<th>Trait</th>
<th>Herbicide Tolerance</th>
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<tbody>
<tr>
<td>Roundup Ready</td>
<td>Glyphosate</td>
</tr>
<tr>
<td>Liberty Link</td>
<td>Glufosinate</td>
</tr>
<tr>
<td>STS (sulfonylurea tolerant soybeans)</td>
<td>ALS inhibitors</td>
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<tr>
<td>Enlist</td>
<td>2,4-D, glyphosate and glufosinate</td>
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In the Pipeline

<table>
<thead>
<tr>
<th>Trait</th>
</tr>
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<tr>
<td>Dicamba tolerance</td>
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<tr>
<td>HPPD tolerance</td>
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ISA Takes “Rubber Meets the Road” Approach

To understand a problem, sometimes it’s best to see it for yourself. Researchers from Informa Economics, with funding from the Illinois soybean checkoff, traveled the state in January and February, looking at bridges and roads and talking to county engineers. Their goal was to learn more about roads and bridges that are in need of repairs in big agricultural impact areas.

Informa reports their researchers found each area’s problems varied according to population density, amount of traffic, miles of roads and number of bridges. The common thread, they observed, is that the current funding structure for road and bridge upgrades is a challenge.

“The money counties are allocated under state law to make bridge repairs is the same as it was in the 1970s. What would fix six or seven bridges then may only fix one or two now,” says Alan Barrett, senior consultant with the Memphis, Tenn.-based Informa. “Smaller and more rural counties are faced with big prioritization tasks.”

Informa’s research identified areas where roads and bridges are decaying to the point farmers will not be able to move equipment simply because not enough resources are available to go around.

Transportation Priorities

Informa’s latest investigation builds on previous studies. With transportation near the top of the priority list, ISA wants to make sure soybeans move through Illinois efficiently.

ISA and the Illinois Corn Marketing Board released studies last summer that began to analyze such major constraints. One study showed the economic impact on farmers of closed or weight-restricted bridges. The other examined how increasing the truck gross vehicle weight (GVW) limit from 80,000 to 97,000 pounds would affect motorist safety, road infrastructure and farmer income.

Informa completed both of the checkoff-funded studies.

According to the U.S. Department of Transportation, 90,000 and 97,000-pound six-axle semi-tractor trailers cause less road damage than five-axle trailers. The second truck GVW study will identify gaps and limitations that currently prohibit higher GVW limits and show the potential for economic efficiencies. Phase two of the infrastructure study will organize bridge and road maintenance needs throughout the state to maximize the benefit to farmers.

“We were impressed with the results, especially that data show increased truck weights may actually reduce wear and tear on our roads. This second phase will help determine how to implement the increase and ensure bridges can handle the extra weight,” says David Niekamp, soybean farmer from Coatsburg, Ill., and Soy Transportation Coalition committee member.

Seeking solutions

“We also are uncovering constraints on increasing the weight limit and developing scenarios that offer alternatives to how heavier trucks can be incorporated,” says Barrett. “During a recent transportation roundtable, we learned trucking companies weekly have to call entities along their routes to check for different or new regulations or restrictions on local roads. We hope this helps streamline their operation and administration to save farmers and transporters time and money.”

Ron Kindred, soybean farmer from Atlanta, Ill., and ISA vice chair for transportation says, “When we have results this August, we will be able to see where major needs are and educate decision makers about the priorities, so funds available are best used.”

Informa’s research finds some roads and bridges in Illinois are decaying to the point where farmers will not be able to move equipment. Weight limits also are a concern.
Illinois Helps Raise Awareness of Biodiesel Image

Program evaluations show that year one of the Advanced Biofuels Initiative has been a great success. The National Biodiesel Board (NBB) started the three-year campaign in 2011, with funding support from the Illinois soybean checkoff and others, to increase favorable public and political perceptions of biodiesel.

“Lots of misinformation attaches negative connotations to ‘first generation, or conventional biofuel.’ Now that biodiesel is recognized by the Environmental Protection Agency (EPA) as an advanced biofuel, we have an opportunity to define biodiesel rather than let it be defined by others,” says Kaleb Little, NBB communications and member specialist.

The multi-media campaign has focused on opinion leaders in the Northeast and Mid-Atlantic regions, promoting the emissions reduction, existing infrastructure advantages and diverse feedstocks available for biodiesel production. Additionally, the campaign stresses that biodiesel does not adversely affect the food supply.

“In year two of the Advanced Biofuels Initiative, we will continue to move these messages to the general public and make a positive impact to show results for the soybean checkoff,” adds Little.

Researchers Test High Oleic Soyoil for Potential New Uses

High oleic soybean oil (HOSO) has proven its merits in food applications. Now scientists are determining if advantages also transfer to industrial applications. HOSO was developed to address trans fats and hydrogenation issues in food products. HOSO produces a more stable oil for cooking compared to traditional soybean oil.

“We will see more high oleic soybeans available to plant in 2013 and 2014, and these soybeans will eventually be a big portion of what we grow,” says Lyle Wessel, soybean farmer from Waterloo, Ill., and ISA vice chair for industrial utilization. The Illinois soybean checkoff and other programs are supporting the effort. “We are funding this research ahead of the supply to build demand for the oil.”

Battelle, an independent global research and development organization, began the research in 2011. In the first year, researchers determined HOSO performs similarly to commodity soybean oil in polyurethane foams and lubricants and performs better in plasticizers, which are used in things like PVC (polyvinyl chloride). Battelle also is pursuing HOSO applications for waxes, carbonate functional fluids and diacid monomers used in polyester and nylon resins.

According to Battelle market analyses, the annual plasticizer market alone is 800,000 tons in North America and approximately six million tons worldwide. Battelle continues to research these technologies and analyze market potential. In addition, Battelle is seeking potential customers for the plasticizer technology so HOSO might capture part of the market in the future.

North American Plasticizer Market

<table>
<thead>
<tr>
<th>Source: Battelle</th>
<th>0.8 Million Tons (16 Million Tons Worldwide)</th>
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</thead>
<tbody>
<tr>
<td>United States</td>
<td>87%</td>
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<tr>
<td>Canada</td>
<td>7%</td>
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<tr>
<td>Mexico</td>
<td>6%</td>
</tr>
<tr>
<td>Mexico</td>
<td>6%</td>
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Plasticizers are used in consumer goods, coated fabrics, wires, cables, flooring, wall coverings, films and sheets. Source:

Illinois soybean checkoff-funded research proves the increased stability that makes high oleic soybean oil good for food makes it good for industrial uses.
ISA Leaders Hit the Hill

Several ISA farmer leaders and staff members will be on Capitol Hill this month to attend American Soybean Association meetings and meet with key legislators and other soybean industry stakeholders. The semi-annual trip allows farmers to meet in person with Illinois senators and representatives to discuss issues critical to soybean profitability. Current issues this year include various regulations and their impact on farming, the 2012 Farm Bill and biodiesel.

Illinois Farmers Must Prepare for Potential Weed Resistance

Weed resistance is a growing threat to soybean yields. ISA, along with industry partners Monsanto, Dow AgroSciences and BASF, hosted three Illinois Weed Resistance Preparedness Training meetings last month to help soybean farmers prepare, defend and defeat the growing threat. Soybean farmers unable to attend the meetings can still benefit from the information provided. Visit the ISA website to read through details shared at the meeting, including weed resistance history, management techniques specific to Illinois, first-hand experiences with resistant weeds, and tools and technologies that can help direct a strategic defense plan.

Help Lead ISA into the Future

The 2012 Farm Bill, free trade agreements and many more legislative issues affect overall soybean profitability. ISA is engaging the next generation of soybean farmers who are passionate about making soybeans more profitable as members of the Soy Leaders Task Force.

Funded by ISA membership dollars, the Soy Leaders Task Force is made up of people who are passionate about the industry and want to share the value of ISA membership with others. ISA is recruiting Soy Leaders – individuals or couples – in each of the state’s 18 districts. Many already have signed up, but more are needed to fill these positions and help lead ISA into the future.

“Soy Leaders will work with their local ISA directors to learn more about the association, acquire expertise, receive industry exposure and develop a critical global perspective,” says Bill Raben, soybean farmer from Ridgway, Ill., and chair of the ISA Membership Task Force Committee. “Soy Leaders will attend trade shows, meetings and other events where they can share ISA’s message with men and women whose lives are affected by soybean production.”

More information about the Soy Leaders Task Force, including an online interest form, is available at www.ilsoy.org/SoyLeaders.

ISA Redesigns Website to More Effectively Share Information

ISA recently launched a new look for ilsoy.org. Designed to emphasize the association’s target areas for the 2011-12 fiscal year, the site – funded in part by the Illinois soybean checkoff and ISA membership dollars – makes it even easier to locate information related to these priorities with the help of simplified navigation, color-coordinated page titles and more.

“We’re excited about the new site and all of the improvements we’ve made,” says Dale Crawford, soybean farmer from Sullivan, Ill., and ISA Marketing Committee chair. “Our goal was to create a user experience that reflects all of the ways ISA is working for our state’s soybean farmers while retaining the features visitors have always enjoyed, like recent news and photo galleries.”
ISA Seeks Farmers to Become Soy Ambassadors

ISA is looking for Illinois soybean farmers interested in joining the next class of Soy Ambassadors. The two-year leadership program gives emerging leaders the opportunity to gain expertise, industry exposure and global perspective that is increasingly critical for success.

“I would encourage those soybean farmers or industry professionals who are 20-something to seriously consider applying for the Soy Ambassador program. The experience provides the tools and skills necessary to be an effective leader and contribute to the successful future of soy both domestically and internationally,” says David Headley, ISA Soy Ambassador coordinator.

Soy Ambassadors gain the inside track on state, national and global issues and organizations, as well as obtain insight into association and checkoff activities. Soy Ambassadors also get the opportunity to promote soybeans worldwide and attend several key soybean events.

ISA covers all out-of-pocket expenses for participants. To be considered, applicants for the program:

• Should be innovative, confident, proactive and relate well to others.
• Have an interest in advancing the industry and in playing a future role.
• Must be 21, reside in Illinois and commit to the entire length of the two-year program.
• Must be willing to travel abroad with a passport valid beyond expected travel dates.
• Must represent ISA in a professional manner.

The 2014 class is limited to 10 participants. Applicants should complete the online application at www.ilsoy.org by July 1, 2012. For more information, email ambassador-info@ilsoy.org.

So do pigs, cows and fish. In fact, animal ag is your number one customer — consuming 98 percent of your soybean meal. That’s one good-looking figure.
**Challenge Winners Boost Yields**

ISA has announced its 2011 Yield Challenge grower team winners. Together, 16 teams, several corporate partners and all other participants reported an average overall yield increase of 6.45 percent – a 1.25 percent increase over 2010.

“We couldn’t be happier with the results,” says Ross Prough, soybean farmer from Greenfield, Ill., and ISA vice chair for yield. “Everyone worked hard, and that really shows in final yields.”

Each member of a first and second place team receives an award of $500 and $250, respectively, for their accomplishments. The 2011 winners (and their sponsors) are:

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<th>District</th>
<th>First Place</th>
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<td>1</td>
<td>Syngenta District 1N (Syngenta)</td>
<td>Pioneer District 1 (Pioneer)</td>
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<td>2</td>
<td>Elburn Co-op (Pioneer)</td>
<td>Pioneer District 2 (BASF Corporation)</td>
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<td>3</td>
<td>CPS Ferris (BASF Corporation)</td>
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<td>4</td>
<td>Sunrise FS (BASF Corporation)</td>
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<td>The Good 5th (Stone Seed Group)</td>
<td>Vinson Seed Service (BASF Corporation)</td>
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<td>Shipman Elevator (BASF Corporation)</td>
<td>Lincoln Land FS (BASF Corporation)</td>
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<td>7</td>
<td>South Central FS (BASF Corporation)</td>
<td>Fhr-U-Trough (Fhr-U-Trough)</td>
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<td>8</td>
<td>Incomplete data</td>
<td>no winners</td>
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<tr>
<td>9</td>
<td>BioSoil Enhancement (BioSoil)</td>
<td>Southern FS (Monsanto)</td>
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**Wanted: Illinois Soybean Bloggers**

Consumers are looking for resources to answer questions about food and farming. ISA wants them to turn to Illinois Farm Families for those conversations – and Illinois soybean farmers need to get involved. The Illinois Farm Families blog at www.watchusgrow.org is an ideal spot for farmers to share information and offer a real look at what happens on today’s farms. Illinois Farm Families is a coalition that includes ISA, the Illinois Corn Marketing Board, Illinois Farm Bureau, Illinois Beef Association and Illinois Pork Producers Association.

The blog features anecdotes of farm life and opens discussions on consumer questions. Blog posts have included seasonal updates from the field, insight on animal care, information to decipher choices at the grocery store and perspectives on today’s family farms. The Illinois Farm Families field moms – Chicago-area moms who are touring Illinois farms – are also blogging, and sharing the information they learn during their farm visits. Watch this spring as the field moms plant and track progress of an acre of soybeans, and take turns blogging about it.

This is a great opportunity for Illinois soybean farmers to share stories. Become part of the solution to build trust between Illinois farmers and consumers. Check out the blog on www.watchusgrow.org and on the Facebook page to add your views and comments. Reach out to Amy Roady at roadya@ilsoy.org to get involved and start blogging.
Leadership

Training a Plus

When Ross Prough transitioned out of the dairy business in 1996, he had time on his hands to participate in more off-farm activities. The Greenfield, Ill., farmer also grows corn and soybeans.

“I took part in the Farm Bureau ALOT program, and that gave me confidence for other leadership roles,” says Prough. “In 1998 I was surfing the Internet, and saw an invitation to be part of the Illinois Soy Leadership Program. I did, and graduated with the class of 2000.”

No stranger to service, Prough had already been a director for the Greene County FS Service Company in the mid-1980s. He also was the service company board member to serve with the Greene County Farm Bureau Board. Greene County Service Company eventually became part of Tri-County FS, and Prough was president of that board for 10 years.

Prough decided to run for the Illinois Soybean Checkoff Board in 2001, but was not elected. He later received a call to replace the ISA District 12 director tenuring off the board. After the two Illinois soybean groups reorganized, Prough ran for an at-large position. He currently is serving his second three-year term.

“Serving on the board has given me the opportunity to take part in conferences and hear a variety of speakers. I have a better understanding of what moves prices and the problems we face with transportation, weed management and other issues. A lot goes on beyond the farm gate, and farmers can have some influence on those matters,” he says. “When I was on the service company board, another member told me he had received far more out of serving than he had ever been able to give back. I agree. You make friendships that last a lifetime.”

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Our Soy Checkoff
Progress Powered by U.S. Farmers
Consumers in Mexico are no different than consumers in Illinois. Ramon Lozano, RYC Company director in Puebla, Mexico, says his company began using more U.S. poultry to create value-added foods that provide Mexican households with healthy, safe and affordable meals. U.S. poultry producers generally choose to feed soybean meal for its nutritional value.

Mexico also is a leading U.S. soy customer. As such, Illinois checkoff-funded programs take many paths to get soybeans from Illinois to Mexican food retailers and livestock operations.

“High quality gets noticed in Mexico, and helps the U.S. remain an attractive soybean supplier,” says Matt Hughes, soybean farmer from Shirley, Ill., and ISA chairman. Hughes and ISA board members Dean Campbell, David Niekamp and Mike Marron recently represented Illinois soybean farmers during a trade mission to Mexico. The leaders met with organizations and businesses that buy Illinois soybeans in the form of U.S. pork or poultry products.

“Mexico imports large quantities of U.S. pork; mostly hams and offal cuts. These are the cuts we don’t normally de-sire in the U.S.,” says Hughes. “As the foundation of high-quality livestock feed here at home, Illinois soybeans play a key role in ensuring U.S. pork exports are high grade and competitively priced for Mexican food markets."

ISA’s investment in U.S. pork and poultry product export organizations is one path to success. By supporting Mexican marketing programs for the U.S. Meat Export Federation (USMEF) and the U.S. Poultry and Egg Export Council (USAPEEC), ISA creates value for U.S. soybean sales.

“Our Mexican hosts were very positive about ISA’s partnership with them,” says Mike Marron, soybean farmer from Fithian, Ill., and ISA market access/advocacy vice chair. “The trip was a good way to see the successes of checkoff investments in Mexico. The general manager from the Sigma plant we visited expressed his thanks for our investment in building pork demand.”

Part of that market support includes TV ads that promote pork, and provides Mexican consumers with ideas about how to cook pork. Another promotion features top Mexican chefs competing to create the best pork recipes, which are distributed to consumers as part of the program. Mexico also imports poultry from the U.S. as turkey legs or offal cuts.

Other paths Illinois soybeans take to Mexico include as whole soybeans, meal and oil. Mexico’s purchases of soybean products are surpassed only by China, notes Hughes, and Mexico is the top U.S. customer for soybean meal and oil. He says protein and oil levels are extremely important purchase criteria for Mexican buyers.

“Mexico purchases soybeans and meal based on a combination of price and quality. By producing soybeans with at least 35 percent crude protein and 19 percent oil, Illinois farmers can stay competitive in the Mexican marketplace,” he says. “Mexico is ideally situated to take advantage of either U.S. or South American beans. The U.S. has a slight transportation advantage. But, it is not enough to truly tip the scale in our favor, which makes soybean quality that much more important to our continued competitiveness.”

Illinois soybeans play a key role in ensuring U.S. pork exports are competitive.
SoyCam.com Provides Glimpse into Growing Season

ISA invests Illinois soybean checkoff funds in projects that will help educate the public about soybean production. The goal is to improve agricultural literacy among consumers, as well as producers. SoyCam.com represents one of those efforts, giving viewers an opportunity to see soybean growers in the field as they plant, maintain and harvest their crops.

Since its inception two years ago, 10 different Illinois soybean farmers from around the state have contributed photographs and comments to SoyCam. A dozen members of APROSOJA, the Mato Grosso Soybean and Corn Producers Association in Brazil, also supplied pictures in 2010 to show the difference in crop management practices between the two countries.

Here’s a look into some of the Illinois soybean farmer contributions from planting to harvest:

Mark Sprague, soybean farmer from New Canton, Ill., photographed his young soybeans. He wanted to show plants between the unifoliate and first trifoliate stages. In his notes, Sprague points out the easily visible dicotyledons at the bottom, unifoliates in the middle, and first trifoliate developing in the top.

Bobby and Jacob Shaffer (left to right) “helped” Rob Shaffer, soybean farmer from El Paso, Ill., scout a soybean field for weed problems and Japanese beetles.

Ross Prough, soybean farmer from Greenfield, Ill., participated in the ISA Yield Challenge for the last two seasons. He documented the progress of his different plots through SoyCam snapshots. Here, Prough shows his field is ready for harvest, but it also provides a height reference for the beans against his four-foot plot sign.

To view more pictures for SoyCam.com, scan the QR code at left.

Bill Wykes, soybean farmer from Yorkville, Ill., is a practitioner of no-till farming. He uses a planter with 30-inch row spacings so that when he doubles back, he can make 15-inch rows with a population drop of 149,000 seeds per acre.

Rowen Ziegler, soybean farmer from LaHarpe, Ill., captured the height of harvest with this photo of a combine bringing in his crop. Illinois soybean farmers produced about 416 million bushels of soybeans in 2011.
For nearly 15 years, farmers have enjoyed the power and convenience of glyphosate resistant soybeans. But, like most great things, it can’t last forever without proper care. The threat of serious weed resistance is a real problem. Glyphosate resistant weeds have been documented around the world and in the United States. Therefore, Respect the Rotation and plant Beck’s LibertyLink® resistant soybeans. When you combine the new programs and high yields of Beck’s LibertyLink soybeans, Respecting the Rotation makes sense. Otherwise, you might want to sharpen that rusty old bean hook!

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