



CHECKPOINT

NEWS FOR PENNSYLVANIA SOYBEAN GROWERS WWW.PASOYBEAN.COM

What is Your Yield Monitor Really Telling You?

MADISON, Wisc. — Harvest will soon begin, which means farmers will be spending more time in their combines and have their eye on their yield monitors. Every year, farmers will undoubtedly find parts of fields that yield less than others, and some might wonder what they can do to fix it.

The soy checkoff funds research to increase and protect soybean yields. One example is a project led by Shawn Conley, Ph.D., extension soybean specialist at the University of Wisconsin.

“I’ve been working on the USB High Yield Project, and have been asked many times why we’re conducting this type of high-yield research,” explains Conley. “First, we want to understand the yield potential out there for growers. Our point is trying to understand the factors that cause the biggest yield loss and strategies that will give farmers a positive return on investment to increase soybean yields.”

Common yield-limiting factors include:

1. Soil quality, such as texture, type, structure, nutrient availability and pH.
2. Excess moisture.
3. Stresses, such as diseases, insects and weeds.
4. Field history, including herbicide, pesticide and fertilizer applications.

Conley suggests the following three management strategies to ensure maximum soybean yields and urges farmers to see them as investments, not expenses.

1. Genetics. To ensure maximum yield potential, farmers should select the best genetics and traits. Accord-

ing to Conley’s data, farmers could see as much as a 20-bushel difference between the best- and worst-yielding varieties in a trial location. He encourages farmers to ignore early sales and wait for yield data from the previous year before making seed-selection decisions. (For more than two decades, the soy checkoff has sponsored soybean variety trials at Penn State’s research farms to evaluate soybean varieties for their performance under Pennsylvania conditions. Results are available from Penn State Extension or under the Research tab at www.pasoybean.org.)

2. Pre-emergence herbicides. At minimum, these inputs maintain yield and, in many cases, improve it. They also allow for greater flexibility of post-emergence herbicides and reduce early-season competition between weeds and the crop. “Looking across the United States, the prevalence of herbicide-resistant weeds is moving northward,” says Conley. “If you want to look for problems, go to those areas focused on glyphosate for the last 10 years, and you’ll see the kind of train wreck you want to avoid.”

3. Fertility. Inadequate soil fertility is one of the main yield-limiting factors over the last two decades, Conley says. As yields have improved, so have the amounts of these nutrients that those crops have removed. Maintaining fertility is important for optimizing yields on both a short-term and a long-term basis. Soil testing is the best guide to soil fertility. Conley urges farmers to take soil tests and use the results to build a customized nutrient-management plan that will improve yields throughout all fields.



Photo by United Soybean Board



POST-HARVEST CHECKLIST

Check these tasks off of your to-do list this fall to give next season’s soybean crop an even better start.

- Take soil samples to address nutrient values and SCN populations
- Apply fertilizer and lime based on soil test results and your nutrient management plan
- Complete fall tillage or plant a cover crop
- Clean and prepare harvest equipment for storage
- Address field drainage issues
- Update records with in-season management notes
- Select next year’s seed and seed treatments



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Integrating Cover Crops Improves Management of Herbicide Resistant Weeds

BILL CURRAN

Penn State Professor of Weed Science

Research being conducted at Penn State is showing cover crops beneficial for suppressing problematic winter annual weeds.

STATE COLLEGE, Pa. -- No-till soybean producers are increasingly integrating fall-seeded cover crops into crop rotations to improve soil health. Typically, these farmers are not focused on the weed suppression benefits of cover cropping, but research being conducted at Penn State is showing the benefit particularly for suppression of winter annual weeds.

The Penn State project is focused on demonstrating the potential for cover crop strategies to improve management of herbicide resistant weeds, with particular emphasis on glyphosate-resistant horseweed (marestalk).

Several cover crops and mixtures resulted in at least a 75% reduction in horseweed populations.

The three-year project is supported by the soy checkoff with a research grant from the Pennsylvania Soybean Board as well as the USDA Crop Protection and Pest Management Program.

Starting in 2014, field experiments evaluated weed-suppressive strategies using one- and two-species mixes of grass (rye or oats), legume (hairy vetch or crimson clover) and brassica (radish) cover crops. The effect of various cover crop mixtures on suppression of horseweed/marestail was evaluated at the time of a typical burndown herbicide application in the spring before planting soybeans. Different herbicide strategies in combination with cover

crops were also assessed.

Preliminary results from these field studies look promising regarding the potential for cover crops to improve management of horseweed in no-till production systems. Several cover crops and mixtures resulted in at least a 75% reduction in horseweed populations at the time of a spring burndown herbicide application. As other research has also shown, cereal rye alone or in mixture tended to stand out as the most weed suppressive species.

Penn State's research also showed that sufficient soil fertility (especially N) to allow for vigorous cover crop establishment and growth can help cover crops suppress weeds. In addition to reducing density, cover crops also resulted in decreased horseweed size at the time of burndown applications, suggesting that spraying smaller horseweed plants should result in greater herbicide control and could likely reduce selection for resistant populations.

These preliminary results suggest that cover cropping strategies that produce high levels of fall ground cover, through the selection of the right cover crop species/mixture along with adequate soil fertility, are most effective for suppressing winter annual weeds like horseweed/marestail

Future work will continue to examine how producers can improve cover crop-weed suppression performance by manipulating cover crop species, mixtures, planting date, termination date, and herbicide timing. This research will focus both on winter annual weeds including horseweed/marestail as well as some problematic summer annuals such as the pigweeds. Results of the research will be available under the "Research" tab at www.pasoybean.org.



Photo by United Soybean Board

Get a Jump on Next Year's Weed Management During This Year's Harvest

While harvesting your crop, it's very easy for the combine to spread weed seeds throughout your field as well as into neighboring fields. Here are four adjustments you can make to your management practices during harvest that could make your spring and summer weed management easier.

1. Manage weeds before they take over your field. Proactive management will improve your yields and reduce the chances of having herbicide-resistant weeds develop in your fields.
2. Leave large patches of weeds in the field. This will diminish the amount of weed seed spread throughout the rest of that field.

3. Weed control isn't normally a priority during harvest, but combines are the ideal vehicle to spread weed seeds across a field or carry them to the next. Be sure to clean the combine after harvesting weedy fields. Clean machinery transfers fewer weed seeds to other fields. Air is the best way to get seeds out of the equipment.

4. Harvest the fields with the most weeds last. Leaving the worst for last will decrease the spread of weed seed even more. Weed seeds would love to spread to your other fields by hitchhiking a ride on your equipment. Visually inspect your combine for any plants that may be coming along for the ride to the next field.

Source: United Soybean Board

You're Invited! On-Farm Network Field Days

Farmers interested in soybean production are invited to attend a field day where soybean research is being conducted in real-world conditions on test plots planted by farmers on their own farms with their own equipment. The sites participate in the On-Farm Network, sponsored by a Pa. Soybean Board checkoff-funded research grant. On-Farm Network growers will discuss soybean management on their farms and Penn State Extension crop specialists will be on hand to discuss the research and answer questions.

ON-FARM NETWORK FIELD DAYS

August 23, 2017

Glenn Krall Farm
(Lebanon County)
174 Schaeffer Rd.
Lebanon, PA 17042

August 24, 2017

Matt Ahern Farm
(Bradford County)
7021 Riverside Rd.
Wyalusing, PA 18853
41°52'41.0"N 76°30'07.9"W

Registration

To register contact Del Voight, On-Farm Network Coordinator, at Penn State Extension-Lebanon County, 717-270-4391

Register before August 22, 2017 for this free event, sponsored by the Pa. Soybean Board.

PROGRAM

9:30 a.m.

Registration and welcome

10:00 a.m.

Farmer discussion of soybean production on their farms

10:30 a.m.-12:00 p.m.

- Fungicide seed treatment population: plot viewing.

- Foliar treatments of insecticide and fungicides on soybean growth and development: plot viewing

- Population impact on soybean yield and growth parameters: plot viewing

- 12 competitive herbicide programs: in field viewing

12 p.m.-1 p.m.

Light lunch and continued discussion

September 1 Deadline to Enter Yield Contest

HARRISBURG, Pa. -- If you know what it takes to produce great soybean yields, you could be a winner in the 2017 Pa. Soybean Yield Contest.

The state is divided into five regions, with awards presented to regional winners as well as an over-all state champion. Participants must use non-irrigated soybeans, but are not restricted as to variety, fertilization, spacing or other cultural practices.

In addition to bragging rights, the state champion will receive a trip for two (the winner and one other individual with a direct financial interest in their farming operation) to the 2018 Commodity Classic in Anaheim, Calif. The top yield winner in each region will receive a trip for the winner to the Commodity Classic. 90 Bushel Club plaques will also be awarded.

Entry forms and full contest details are available at www.pasoybean.org or by contacting Penn State Extension-Lebanon County, 2120 Cornwall Road, Lebanon, PA 17042. Phone: 717-270-4391

Application to enter the contest must be postmarked by September 1, 2017.

