

# Maryland Soybean Board 2017 RESEARCH REPORT

## Palmer amaranth requires new approaches

LEONARDTOWN, MARYLAND — Farmers facing glyphosate- and ALS-resistant Palmer amaranth in their fields will need to take an integrated approach to managing the weeds this season and preventing further spread, says Ben Beale, University of Maryland Extension ag agent.

Beale, who works in Southern Maryland, says he saw fields that had extensive infestations of the herbicide-resistant weeds last year in both St. Mary's and Charles counties.

Herbicide-resistant Palmer amaranth also has been confirmed on the Eastern Shore of Maryland and in Delaware.

"Growers with Palmer amaranth should be prepared to rotate crops and chemistries," Beale says. "They should think ahead about managing the seed bank in their fields, using cultural control methods like tillage or hand-pulling, and throughout the season and into harvest they should do everything they can to prevent the movement of seed from infested to clean fields."

Beale evaluated 15 different regimens for controlling resistant Palmer amaranth in the summer of 2016 with funding from the Maryland Soybean Board. The board invests soybean checkoff funding to support research, marketing and educational projects.

He found that "any residual herbicide is better than no residual herbicide." Residual products that worked well included products with Flumioxazin (Valor) including premixes of Fierce or Fierce XLT, and products with sulfentrazone (Authority) including premixes such as Broadaxe, Authority Elite, and Authority MTZ.

However, Beale says, none of the residual products provided

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## Maryland Soybean Board funds soybean research

**N** ovel applications of nanotechnology, the effect of "legacy phosphorus" and the impact of neonicotinoid seed treatments on non-target invertebrates and soil microbes were among 18 projects which won \$213,118 in funding from the Maryland Soybean Board this spring.

The Maryland Soybean Board administers soybean checkoff funds for soybean research, marketing and education programs in the state. It is funded by farmers through an assessment of one-half of one percent of the net market value of soybeans at their first point of sale. One-half of the checkoff funds stay in Maryland for programs; the other half is sent to the United Soybean Board for national and international projects.

Here's a rundown of the 2017 soybean research projects:

Improving Double Crop Soybean Performance with Earlier Harvest of Wheat, Dr. Robert Kratochvil, \$15,624.

Evaluate Soybean Lines with Feed Value Traits Combined with Oil Value (High Oleic/Low Linolenic Acid) in non-GMO Varieties Adapted to Maryland, Bill Rhodes, \$16,000. Monitoring Field Level Groundwater Quality in the Upper Chester Showcase Watershed – Continuation of Groundwater Data Collection, Judy Denver, \$8,000.

Impact of Repeated Use of Neonicotinoid Treated Seed in Grain Crop Rotations on Non-target Invertebrates and Soil Microbes, Kelly Hamby, \$26,000.

Planting Green – Getting More Payback for Cover Crops, Dr. Ray Weil, \$12,000.

Sulfur Management to Enhance Quality and Yield of Soybean Protein, Dr. Ray Weil, \$12,000.

Role of Legacy Phosphorus in Downstream Water Quality in East Creek, Crisfield, Md., Dr. Deb Jaisi, \$21,075.

2017 Agronomic And Economic Evaluation of Prominent Varieties Recommended by Local Seed Dealers with Maryland State Variety Trials, Dr. Jason Wight, \$6,450.

Evaluation of Integrated Strategies to Manage Herbicide Resistant Weeds in Soybeans, Ben Beale, \$6,457.

field notes

# Atlantic Soybean Council identifies priorities, proposes on-farm network

(ANNAPOLIS, MARYLAND) - Soybean checkoff farmerleaders, staff and university leaders from Maryland, Delaware, Pennsylvania, New Jersey, Virginia and New York met in February to identify issues of regional importance.

After two days of deliberations, council leaders discussed nematodes, shrinking university budgets, soybean composition and protein sampling before deciding to create a regional on-farm research network that will facilitate regional research.

Now in its second year, the regional board conducted a search this spring to identify a coordinator for the network.

# USB: Take action against resistance to preserve existing chemistries

SAN ANTONIO – Herbicide resistance is a serious problem. But resistance isn't limited to weeds. So to help farmers fight the next attack on their profitability, the soy checkoff is being proactive.

The United Soybean Board (USB) has expanded its Take Action program. In addition to combatting herbicideresistant weeds, the program will now be tackling fungicide resistance in soybeans.

"Herbicide resistance is a significant issue farmers face in their fields," says Carl Bradley, Ph.D., extension plant pathologist at the University of Kentucky. "It's possible that fungicide resistance is going down the same path. Now is our chance to get ahead of it before it gets too severe."

Take Action, an industry-wide partnership spearheaded by the soy checkoff, advocates a diverse approach to weed management to avoid resistance. The program applies the same philosophy to disease management.

"To stay ahead of fungicide resistance, we can't cut corners," says Gregg Fujan, a checkoff farmer-leader from Nebraska. "We believe a well-rounded method of pest management is needed to preserve existing technology and protect farmers' long-term profitability." If not addressed soon, farmers risk losing the few fungicides they have available now.

"If we lose the tools we have, there's a financial risk of having diseases we can no longer control," says Fujan.

Fujan called out four steps farmers can use today to help preserve current technology and avoid resistance:

- Scout fields regularly for diseases.
- Understand disease thresholds.
- Apply fungicides only when it makes economic sense.
- Rotate fungicide modes of action.

USB's 73 farmer-directors work on behalf of all U.S. soybean farmers to achieve maximum value for their soy checkoff investments. These volunteers invest and leverage checkoff funds in programs and partnerships to drive soybean innovation beyond the bushel and increase preference for U.S. soy. That preference is based on U.S. soybean meal and oil quality and the sustainability of U.S. soybean farmers. As stipulated in the federal Soybean Promotion, Research and Consumer Information Act, the USDA Agricultural Marketing Service has oversight responsibilities for USB and the soy checkoff.

For more information on the United Soybean Board, visit www.unitedsoybean.org.

"Many farmers may be of the mindset that a fungicide application will give a bit of a yield bump, even if diseases are not at economically damaging levels. But if they're applying fungicides no matter what, they're beginning to chip away at the tools they have to fight yield-damaging pathogen outbreaks. We want to encourage farmers to be mindful of what they're using and when so they don't lose what they have."

#### -Carl Bradley, Ph.D.

#### University of Kentucky

The Maryland Soybean Board is committed to growing leadership to serve on its board that reflects a diversity of perspectives and opinions. That effort is aimed at reflecting the sizes of operations, experience, methods of production and distribution, ethnicity, gender, marketing strategies and other distinguishing factors that will bring different perspectives to the table. In return, service on the checkoff board offers opportunities for personal growth, leadership development, travel and the opportunity to make a positive impact on the direction of the industry. Individuals who are interested in learning more about serving should contact one of the board members or the executive director shown on the back page of this report.

## High oleic soybeans offer opportunity

(SUDLERSVILLE, MARYLAND) - 2017 marks the sixth season of high oleic soybeans, which allow farmers to offer end-use customers an American-grown, highly functional oil without sacrificing performance.

High oleic has gradually expanded over the years to 12 states, including Maryland.

The farmers who plant these soybeans see them perform competitively on their farms. Performance, coupled with added demand for enhanced soybean oil and the opportunities for premiums have farmers returning to high oleic year after year.

"Last year's crop was the best my high oleic soybeans have produced," says Steve Moore, former soy checkoff farmerleader from Sudlersville, Maryland. "They performed just as well as the top-line commodity soybeans I grew. Last year was the fourth year I've grown them, and I'm going to continue doing so."

The soybean industry's goal for high oleic soybean acreage is 18 million planted acres. If the industry reaches that goal, high oleic soybeans will be the nation's fourth-largest grain and oilseed crop, behind corn, soybeans and wheat.

High oleic soybean varieties are packed with the same agronomic traits and performance that farmers expect from

their traditional soybean varieties. Additionally, they typically do not require more work than regular soybeans.

"High oleic soybeans provide more diversity for our farm," Moore says. "We have a grain mill close to us that accepts high oleic soybeans, so that's an added bonus. It's actually closer than our regular mill."

Whether used in a fryer or as a lubricant in synthetic motor oil, the oil is more functional than other oils. And since high oleic soybeans are in demand, processors are paying a

premium for them.

"There are a lot of benefits to growing high oleic soybeans," Moore says. "Their yields are equal to the best varieties out there, and we get a 50-cent premium for them."

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soyinnovation.com

determines your additional revenue potential and accounts for any extra costs you might see for handling these identity-preserved varieties.



#### Perspective: USB says biotechnology is safe for people and planet

(ST. LOUIS, MISSOURI) - Biotechnology. It's a term that's on many people's minds. Research shows that U.S. consumers demand more access to information about where their food comes from, what's in it, and how it was made and sold. But it can be difficult to understand justwhat biotechnology is and how it relates to you and your food.

Simply put, biotechnology either takes the DNA from one organism and transfers it into another or merely turns off a gene.

For as long as people have been raising crops, they have cross-bred plants to improve them. They do this by taking the pollen from one plant and physically transferring the genes the pollen contains to another plant. This allows the plant to pass on certain characteristics, such as producing more seed or being able to fight off diseases and pests. However, pollen contains many genes, some desirable and some not.

So, late in the last century, researchers identified a way to accomplish gene transfer in the lab. This made it possible to add only the desirable genes, or improve existing ones. The resulting genetically modified organism (GMO) was developed more quickly than by using traditional breeding techniques, and more accurately. No longer did you have to gain a positive characteristic while unintentionally allowing a "negative" one to be expressed.

Three U.S. government agencies have oversight on genetically modified crops. Today, most enhanced-trait soybean oils, such as high oleic soybean oil, are a result of agricultural biotechnology and produced with sustainable growing methods.

High oleic soybean varieties are packed with the same agronomic traits and performance that farmers expect from their traditional soybean varieties. The only difference is that in high oleic soybeans a gene has been turned off.

Foods developed through modern biotechnology have been on grocery store shelves for more than 20 years. In fact, 70 to 80 percent of the food eaten in the United States contains ingredients from biotechnology. All told, though, there are only about a dozen or so individual crops which have been genetically enhanced.

The soybean industry understands that the food industry's No. 1 priority is supplying safe food products. When it comes to foods developed through modern biotechnol-ogy, the use of biotech ingredients are proven safe and offer many benefits for the people and planet.

## Maryland soy crop demonstrates sustainability

(SALISBURY, MARYLAND) - Maryland soybean farmers have a record of putting the sustainability of the state's natural resources as a top priority, according to a recent review of government data released by the United Soybean Board.

Thanks to the responsible use of technology and continuous improvement in management practices, Maryland's soybean farmers have increased their productivity on less land per bushel, the report said. The United Soybean Board's "Soy Sustainability" research gathered datasets from the U.S. Department of Agriculture (USDA), Environmental Protection Agency and U.S. Fish & Wildlife Service.

Since 2010, the report said, Maryland soybean farmers are harvesting 29 percent more bushels of soybeans, on just 11 percent more soybean acres.

Over that time, they've also put more of their acres into conservation, watershed and wildlife programs.

"The responsibility for taking care of the land, water and air we utilize to produce soybeans is our livelihood and the heritage that's been passed to us. While our farms are often bigger or look different than they did a generation or two ago, our commitment to do what's right by our neighbors and future generations remains the same," says Travis Hutchinson, chairman of the Maryland Soybean Board and soybean farmer from Cordova, Md. "My family enjoys those resources the same way most people do. We drink the water, hunt the land, and fish the waterways, so we do everything we can to sustain them."

Maryland farmers embrace their responsibility to conservation through approaches ranging from cover crops and fencing cattle out of streams to high-tech equipment like GPS and variable rate application of fertilizer. In the process, they've increased their sustainability, while achieving goals like improving water quality and reducing soil erosion at the same time.

In fact, Maryland farmers reduced soil erosion per acre per year by more than a ton between 2000 and 2015, for a total 21 percent reduction in erosion.

American soybean farmers' sustainability performance is increasingly important to customers who buy their products. Currently, 98 percent of U.S. soybeans are certified sustainable, according to the U.S. Soybean Sustainability Assurance Protocol.

U.S. soybean farmers are committed to implementing new production practices to continuously improve their sustainability record. The protocol is a certified, aggregate approach to the sustainability performance of U.S. soybean production. The data used is regularly compiled by the U.S. Department of Agriculture and other sources that collect it from U.S. soybean farmers through existing government programs.

Coast to coast, American soybean farmers have adopted a number of sustainable practices they employ day after day, year after year:

Crop Rotation – 94 percent of soybean acres are under continuously rotated plantings.

Water Management – Soybean farmers use no-till farming, grass filter strips, cover crops and more to manage their most precious resource – water. These practices help slow runoff from fields, trapping and filtering sediment, nutrients, pesticides and more before they reach surface waters.

Reduced Tillage – 70 percent of U.S. soybean acres use conservation tillage, including no-till.

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#### Soybean board funds research ...

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Soybean Stover for Direct Catalytic Conversion to Biofuels and Enhanced Seed Yield and Mineral Availability, Dr. Wendy Peer, no cost extension to continue work started the previous year.

Screening Entomopathogenic Fungi for Controlling Brown Marmorated Stink Bug, Simon Zebelo, \$5,500.

Nanotechnology for Sustainable Soybean Production Under Biotic an Abiotic Stresses, Naveen Kumar, \$26,500.

Drone Technology to Increase Crop Yield Precision Agriculture, Carl Wise, \$3,700.

Assessing the Impacts of Row Spacing and Fungicide Timing on Disease Control and Profitability in Double Crop Soybean Production Systems, Dr. Nathan Kleczewski, plant pathologist, University of Delaware, \$6,007.

Enhancing Soy Consumption in Human Foods through Science-based Approaches, Dr. Lucy Yu, \$10,000.

Improvement of Soybean Protein Functionality Using Chemical and Nanotechnology as Approaches, Qin Wang, \$10,000.

Evaluation of Soybean Fungicide Seed Treatments, Andrew Kness, \$2,950.

Developing a Management Program for the Dectes Stem Borer by Finding and Targeting Its Weak Links, Alan Leslie, \$24,855.

For more information on the research and programs of the Maryland Soybean Board, visit www.mdsoy.com or Like us on Facebook or Instagram.

research reports

# Shhh: We reveal the 'secret' to higher double crop yields

The secret to higher double crop soybean yields isn't really much of a secret: Getting those beans in the ground earlier gives them the best chance to produce the best yield. So Bob Kratochvil set about looking at how to harvest wheat earlier.

"With Perdue buying 15 percent moisture wheat with no penalty in 2016, there was an incentive to look," he said.

His research is part of the Mid-Atlantic Double Crop Initiative, working with Pennsylvania, Delaware, New Jersey, North Carolina, managed by Dr. David Holshouser of Virginia Tech. "It makes sense. You protect your wheat yield, and get your double crop soybeans planted as early as possible," he said.

At three locations they monitored five wheat harvest dates, with six replications. The first harvest started with about 20% moisture content and a target date range of June 15-20, and then every week or so for the next five weeks. Kratoch-vil also looked at the performance of Maturity Groups 3-5.

"Test weight had the most dramatic change," he says. "And in general there was a drop in yield as we went through the harvest season." For soybeans, the general trends showed a decline in yields as the planting date went later, and an increase in yield as maturity group number increased.

In 2017, his second year of research, he will also look at Falling Number and DON for wheat. For soy, he will evaluate Leaf Area Index, plant height, lodging, yield and quality. The soybean board is providing \$15,624 toward his research.

# Hamby lab report: Neonics may be best for 'high-risk situations'

Under a typical corn-wheat-soy rotation, neonicotinoid insecticides such as Cruiser or Gaucho may be applied repeatedly as seed treatments, says Kelly Hamby, University of Maryland entomologist. Used in that fashion, over 90 percent of the chemical can remain in the soil, which may accumulate with each use.

Neonics can have non-target effects on organisms such as soil microbial communities and beneficial arthropods. The active ingredients also may be taken up by other plants, such as winter annuals, which can be important early food resources for pollinators.

Hamby looked at the repeated use of Cruiser and Gaucho over a three-year period, and found that early season pest and beneficial insect populations, including plant hoppers and thrips in soybeans, and aphids in wheat, were reduced by the use of neonics. She also found there were non-target impacts on early season beneficials. These results, along with a questionable economic benefit in wheat and soybean production, lead Hamby to question the prudence of application. "Yield improvements seem to vary by location and pest pressure," she said. "It may be best for high-risk situations, or fields that consistently have problems. Otherwise it will probably not pencil out cost-wise."

Hamby also evaluated whether flowering winter annual weeds take up neonicotinoid residues. After sampling henbit and chickweed, she found no residues detected in any crops after the treatments in 2016. The effort will be repeated in 2017.

## "What did we find? Nothing."

That's the summary from Dr. Bob Kratochvil, University of Maryland Extension Agronomist, in his report on "Response of full season irrigated soybean to poultry manure."

In his second year of research, irrigation supplied as needed at two locations: Extension Agent Jim Lewis's Caroline County farm (planted with mid-Group 3s), and the Wye (planted with early Group 4s). Manure was analyzed and applied by hand just after planting. A residual nitrogen test performed after harvest showed less than ten parts per million. "If you were planting wheat behind that you'd be okay putting some fertilizer on that," Kratochvil added.



Other observations? Plant height was a bit different. The manure-fed plants were two inches taller and had a little bit more lodging but "nothing significant." Nutrient management regs will allow poultry application on soybeans if soil phosphorus test indicates it is needed, Kratochvil said. In the future, he suggested, he would like to see farmers do strip plot testing with high yield varieties using the MDA research exemption.

### Possible new variety release due out from Schillinger

(QUEENSTOWN, MARYLAND) - Schillinger Genetics is increasing seed for a possible 2018 release of a new high oleic, low linolenic line of non-GMO soybeans, according to Billy Rhodes, the company's soybean breeder.

His project: "To Evaluate Soybean Lines With Feed Value Traits Combined with Oil Value (High Oleic and Low Linolenic Acid) in non-GMO Varieties Adapted to Maryland" won \$16,000 from the soybean board.

Schillinger has two lines going into production this summer that should be available by 2018. "Yield performance is competitive with commercial varieties," Rhodes said, "and the stacked line has a dry weight protein of 43.9 percent, high oleic levels of 81.5 and low linolenic levels of 1.8."

The goal has been to develop a line with a dry weight soy protein of 43 percent or more and raffino-stachyose of .5 percent or less with high oleic level of 78 percent or more and low linolenic of 2.3 percent or less.

The result is a lower trans-fat oil which adds value to soybean producers, soybean processors, end users, and the industry.

"We already have end users who want to contract acres to get the oil out of those acres," Rhodes said. "In general it's really going to help the soy industry in the U.S. It's going to give us competitive value over what we see coming out of South America."

Raffino-stachyose is an anti-nutritional sugar that does not digest, resulting in flatulence. Lower levels of raffino-stachyose, combined with increased protein quality and quantities have resulted in higher metabolizable energy, more consis-

#### Dendro, Lear, IKEA urged to insist on U.S. soybeans

The United Soybean Board focuses on encouraging manufacturers of high-value or high-volume industrial products to prefer U.S. soybean oil or meal. Dendro and Lear are two such companies.

In early July, USB Director Dan Corcoran of Ohio met with Dendro Poland, which makes soy foam for IKEA.

After a checkoff-supported visit to the United States in April 2015, Dendro has been working to increase the soy foam content of more than 2-3 million foam mattresses each year.

Corcoran also visited Lear, which is one of only two primary independent suppliers of automotive foam in the world.

Lear, which in 2008 was the first company to market soy foam on the Ford Mustang, has converted nearly their entire North American product to soy foam. tent feed conversion and improved gut health in poultry, swine, turkeys and aquaculture.

"Soybean meal has always, in my mind, been the ultimate protein component for animal feed, but they've started looking for other protein sources (for feed). ... so we're kind of under attack," Rhodes said. "This gives us a chance to gain some market share back."

Agronomically, Rhodes looks for resistance to SCN, frog eye, sudden death syndrome and other diseases in the new lines.

The United Soybean Board has a goal to increase the high oleic soybean crop to 18 million acres by 2023.

# Maryland variety trial results are posted online

Although soybean varieties seem to have a "short life span," Dr. Jason Wight of the University of Maryland still puts together an agronomic and economic evaulaton of prominent varieties recommended by local seed dealers with Maryland.

Looking to provide objective performance data on yield, disease resistance, quality, and improve locally available germplasm, Wight trialed a number of varieties last year. In six different trials at four different research locations, Wight found no SDS or frogeye leaf spot last year, he said.

To find the results, Google "mdcrops" to find results.

He also recommends visiting

www.psla.umd.edu/extension/md-crops

The statewide average in 2015 was 40 bushels per acre, Wight said, and full season soybeans represented an approximate 10 bushel per acre yield gain versus double cropped beans.

"Even if you're planting double crop you can still get as good of a yield out of it - the trick is you've got to be within three or four days of harvest of your wheat crop," he advised.

Dicamba options provide no yield drag – giving you an option for Palmer Amaranth control, he added.

## Maryland sustainability ...

#### Continued from Page 4

Pest Management – 49 percent of U.S. soybean farmers scout their fields weekly during the growing season.

Nutrient Management – 46 percent of U.S. soybean farmers test their soil every 1-3 years.

Precision Farming – 43 percent used precision technology in 2006 to increase on-farm efficiency.

## MDA advises growers to scout for kudzu bug

ANNAPOLIS, MARYLAND) – Kudzu bug, an invasive insect, has been identified in nine Maryland counties and growers should be vigilant, according to the Maryland Department of Agriculture.

Kudzu bug, originally from Asia, has been found in Anne Arundel, Calvert, Carroll, Charles, Dorchester, Montgomery, Prince George's, St. Mary's, and Talbot counties, the department said.

Soybean growers are advised to scout for the pest, which can reduce yields, but can be controlled with appropriate pesticides.

"Kudzu bugs are invasive species that can have a significant impact on crop yields," said Agriculture Secretary Joe Bartenfelder. "It is very important that farmers are aware of this insect and plan accordingly. Luckily, the kudzu bug is easily controlled with proper pest management planning."

Kudzu bug is about the size of a pea and a distinctive olive green with brown speckles. It is broad and flat across the back end.

Kudzu bug is a "true bug" with piercing-sucking mouthparts. According to the department, kudzu bug typically feeds on kudzu vines and then may migrate to soybeans and other types of beans. Excessive kudzu bug feeding can

### Another way to look at irrigation: Conservation

Irrigation. As a conservation measure? Maybe so. For the past six years, Judy Denver of the U.S. Geological Survey has been monitoring field level groundwater quality in the Upper Chester watershed, looking at the effects of irrigation on water quality.

For the past few years, Judy Denver's goal has been to document the effects of irrigation versus dryland production following the application of manure. "We expect that on irrigated fields that we will have better update of nutrients, and data bears that out," Denver reported to the Maryland Soybean Board at their February research meeting.

"We're also seeing a little bit of difference between dryland and irrigation in seasonal soil profiles. In groundwater and lysimeter data, we have found that because irrigation keeps the soil moist, when it rains, moisture can infiltrate the soil more easily."

That moisture recharge can "blast" nutrients through the soil zone, she added. "What's important to understand is how this can occur, not just in wintertime but any time you reduce soybean yields by reducing pods per plant, reducing beans per pod, and/or reducing seed size.

In Maryland, the pests have mostly been collected on kudzu, however, some have been found on soybeans in



Photo courtesy USDA

Dorchester County this spring.

To report a sighting or collected sample of kudzu bugs, contact the department's Plant Protection and Weed Management section at 410-841-5920.

Information on identification, treatment thresholds and insecticides may be found at http://mdkudzubug.org

Additional material may be found at the United Soybean Board site at http://unitedsoybean.org/article/scouting-keyto-managing-kudzu-bug

get soil moisture."

"Right now we're seeing an effect but it's not enough to know how it effects overall. This leads us to think how we might manage irrigation overall."

While Denver and her colleagues still need to crunch the numbers to arrive at their final conclusions, they do note the following:

- Nitrogen use efficiency is generally greater with irrigation than dryland farming.
- Recharge to the water table is greatest in winter but also occurs with heavy rainfall in summer.
- Higher leachate was more obvious during corn growth than during soy senescence.

Denver and her colleagues will examine the "mass balance" this year, groundwater recharge and nutrient transport through soil zone using a variably saturated flow model. They're also now looking at working in Delaware on Bucks Branch.

# social?

MSB has launched a new campaign to help consumers understand agriculture in Maryland and encourage them to trust farmers to do what's right. Help us by engaging on social media and sharing our posts. We're on Facebook, Instagram & Twitter at MyMdFarmers and on the web at MyMdFarmers.com



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#### Palmer amaranth ...

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consistently clean fields throughout the season. "This weed is a challenge," he says. "Growers who have it need to address it now, and those who don't need to do everything to prevent it from taking hold in their fields. That includes scouting hedgerows and insisting that combines are clean, with infested fields ideally being harvested last."

Travis Hutchison, chairman of the Maryland Soybean Board, says that the project is a good example of the soybean checkoff in action. "Our research committee solicits and reviews projects that address concerns facing growers in Maryland, like Palmer. This spring we funded 18 projects totaling more than \$200,000, including additional testing on Palmer."

The Maryland Soybean Board administers soybean checkoff funds for

soybean research, marketing and education programs in the state. It is funded by farmers through an assessment of one-half of one percent of the net market value of soybeans at their first point of sale. Onehalf of the checkoff funds stay in Maryland for programs; the other half is sent to the United Soybean Board for research, marketing and education on a national and international level.

