



CHECKPOINT ²⁰¹⁸ NT

PENNSYLVANIA SOYBEAN BOARD FISCAL YEAR **2018 ANNUAL REPORT**

THE SOYBEAN CHECKOFF AT WORK

The Pennsylvania Soybean Board (PSB) consists of a farmer-driven board responsible for managing Pennsylvania's share of funds received from the national soy checkoff program. The Board's mission is to invest soybean checkoff resources to advance soybeans in the Commonwealth, enhance sustainability, and provide opportunities for Pennsylvania Soybean Growers.

The ten Pennsylvania soybean farmer-directors who make up the Board are responsible for the collection and administration of the soybean checkoff program within the State. The authority given to PSB under the Federal Act and Order are specific to soybean education, promotion, communication and research. Two members of the PSB also represent Pennsylvania growers on the United Soybean Board.

NOMINATIONS TO THE PENNSYLVANIA SOYBEAN BOARD OF DIRECTORS

The Pennsylvania Soybean Board is currently accepting nominations of individuals within the Commonwealth who would be willing to serve on the Board of Directors. To be considered for the Board, you must raise soybeans in the State, participate in the checkoff, and have the time and talent to offer your expertise in support of the soybean farmers and the soybean industry.

If you, or someone you know, is interested in being nominated to serve as a farmer/leader on the Board, contact Jennifer Reed-Harry at 717-651-5922 or jrharry@pasoybean.org. Diversity in age, sex, race, geographic location, and size of operation is encouraged on the Board.



Contact us at:

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For the latest news, events, research updates and more:



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YOUR CHECKOFF WORKS FOR U.S. SOYBEAN GROWERS

Since its inception, the soy checkoff has existed for one reason: to create profit opportunities for America's soybean farmers. Success for soybean farmers in today's market takes more than just a good harvest. Increasing demand for soybeans is an essential part of the equation. The soybean checkoff helps facilitate market growth and creation by funding and directing marketing, research and commercialization programs. By building demand both at home and abroad, the soybean checkoff helps ensure a strong and profitable future for U.S. soybean farmers.

At the checkoff, we call profit opportunities "cropportunities." From feed to fork, biodiesel to car tires, U.S. soy has evolved into

the ultimate raw material. Each of these numerous, diverse uses began as a single #Croppportunity.

After 25 years of cropportunities, revenue has nearly quadrupled for U.S. soy farmers from \$11 billion to \$41 billion. Creating cropportunities is an innovation-by-innovation, around-the-clock mission. That's why the checkoff will always have an eye on the future, looking for the next #Croppportunity that can make a difference to the bottom line.

What is a #Croppportunity? It's looking out and thinking big. It's being aware and identifying every possibility to put soybean crops to use. It's ideas, research, strategy and drive all put into action to help soybean growers prosper.

Simply put, a #Croppportunity is your checkoff dollars at work — new revenue streams created, existing markets expanded or revived in new, exciting ways that open up demand and drive sales.

Pennsylvania growers planted a record

600,000 acres

of soybeans in 2018.

Pennsylvania harvested more than

28,080,000 bushels

of soybeans, valued at \$257.8 million, in 2017.

Oct. 1, 2017-Sept. 30, 2018

Pennsylvania Soybean Board Officers

William Beam, Elverson, PA
Chairman

Michael Gerhart, Ephrata, PA
Vice Chairman

Steve Hykes, Greencastle, PA
Secretary/Treasurer

BOARD MEMBERS

Brian Kreider, Lebanon, PA
Andy Fabin*, Indiana, PA
Emily Landis, Pennsylvania Furnace, PA
Dustin Kieffer, Rebuck, PA
Justin Knoebel, Elysburg, PA
John Harrell*, Lebanon, PA
Rick Telesz, Volant, PA

Ex-Officio Members
Dr. Paul Esker, Penn State Plant Pathologist

EXECUTIVE DIRECTOR

Jennifer Reed-Harry
jrharry@pasoybean.org
(717) 651-5922



*Also serves on United Soybean Board

PENNSYLVANIA SOYBEAN BOARD 2018 FISCAL YEAR

Oct. 1, 2017 – Sept. 30, 2018

INCOME

Carryover from FY '16-17 \$ 284,884

FY '17-18 Assessments \$ 889,990

TOTAL INCOME \$ 1,174,874

EXPENSES

50% of FY '17-18 Assessments to United Soybean Board \$ 444,995

Administration, Compliance, Audits, Insurance \$ 94,709

Communications \$ 67,436

Promotion/Education \$ 132,304

Research \$ 240,096

TOTAL EXPENSES \$ 979,540

CARRYOVER

Carryover available for FY '18-19 \$ 195,334

CHECKOFF FUNDED RESEARCH

The Pennsylvania Soybean Board grants funding for research projects designed to provide reliable crop production data to soybean growers and to support Pennsylvania's animal agriculture industry.

The all-farmer board, which administers the national soybean checkoff program in the Commonwealth, approved a number of research projects for Fiscal Year 2018 focusing on crop management practices. Additionally, the board approved grant requests for research benefiting animal agriculture, the largest domestic user of soybean meal and the largest sector of Pennsylvania's agricultural industry.



CROP PRODUCTION

EVALUATING DEER DAMAGE ON PA. SOYBEAN VARIETIES - DELAWARE VALLEY UNIVERSITY

The project evaluated ways to mitigate deer damage in Pennsylvania soybean fields. Thirty varieties were evaluated to help guide growers with deer pressure to plant potentially less susceptible varieties.



USING PRECISION AG DATA TO REFINE SOIL FERTILITY MANAGEMENT- PENN STATE

The project allows growers and agronomists to synthesize information contained in multiple datasets to identify differences in soil fertility levels across a field. By identifying zones within a field that have low fertility levels, producers can vary the rate of nutrients to achieve higher yields with a more economical use of fertilizer.

SENTINEL PLOT PROGRAM - PENN STATE

The sentinel plot program is run in collaboration with Penn State Extension to provide soybean growers with statewide assessment of insects and diseases active in soybean fields. Soybean fields throughout the state were scouted weekly for insect pest and disease population.

Summaries of the research results will be available after April 15, 2019 at www.pasoybean.org under the Research tab.

SOYBEAN VARIETY TRIALS - PENN STATE

Soybean early and late-maturity variety trials were conducted at three locations in Pennsylvania. More than 100 commercial varieties and experimental cultivars were evaluated for their performance under Pennsylvania conditions. The continuing search for higher yielding varieties, quality traits, the onset of new diseases and insects, and the new focus on value-added traits in the future is essential to soybean producers in Pennsylvania.



SOYBEAN VEIN NECROSIS- PENN STATE

Soybean vein necrosis (SVN) has been reported in the U.S. since 2008. The disease causes development of shriveled, deformed seeds with reduced germination percentage and decrease in oil percentage, seed weight, protein content and fiber content. This project investigated the role of host plant resistance in the management of this disease.

BEST MANAGEMENT PRACTICES FOR SLUGS - PENN STATE

Research investigated best management practices for slugs. Extension educators throughout Pennsylvania trapped slugs and assessed crop damage in spring and fall.

In field crops, slugs are particularly prevalent in no-till or reduced-till fields with heavy residue and little soil disturbance. They can eat virtually all crops and inflict most of their damage during

crop establishment and early growth in the spring and fall. This damage tends to be most severe under cool, wet conditions, which slow crop growth and favor slug activity.

The increased adoption of no-till methods in recent years, as well as the limited control options available to no-till farmers, has elevated the importance of slugs as pests of field crops in Pennsylvania.



CHECKOFF FUNDED RESEARCH



SOYBEAN YIELD-LIMITING FACTORS - PENN STATE

The Penn State Research Experiment Farms and Pennsylvania growers participating in the On-Farm Network tested a variety of products and management practices. Included was research into the factors that drive soybean yield differences across different production zones in Pennsylvania. Consideration of the microbiome, nematodes and soil health and fertility were included in the study.

PA. ON-FARM NETWORK – PENN STATE

Since 2009, the Pennsylvania On-Farm Network has tested products and management practices on Pennsylvania farms with Pennsylvania growers. The Network works by conducting research in real-world conditions on test plots planted by farmer/collaborators throughout Pennsylvania on their own farms with their own equipment to see which management practices have an appreciable impact on production.

Research for the 2018 growing season focused on monitoring slugs and performing soil and plant sampling to determine the factors that impact soybean production on a local, regional and statewide level.

In western and northern parts of the state, research was also conducted on plant populations, soybean varieties, and the use and need for fungicide treatments.

This project is open to all soybean producers in Pennsylvania. Growers interested in participating in future trials are encouraged to contact their local Extension Educator for more information.



ANIMAL AGRICULTURE

EFFECTS OF NOVEL AVIAN REVIRUS VARIANTS ON EGG-LAYING HENS - PENN STATE

The newly emerging Avian Revirus (ARV) variants and novel strains have been causing major poultry diseases and economic losses in Pennsylvania. Research aims to provide essential scientific data for the most effective control strategies to prevent ARV infections, and provide recommendations for the most effective “soft” disinfectants for laying hen flocks.

INCIDENCE OF INFLUENZA D VIRUSES IN PA. CATTLE - PENN STATE

Bovine respiratory disease (BRD) is the number one disease of dairy and beef cattle. Growing evidence shows that newly discovered influenza D viruses (INDs) are major players in BRD. The project will aim to isolate and characterize IDV to evaluate the prevalence and genetic diversity of these viruses to reduce losses to the cattle industry.



ENHANCING RUMEN BY-PASS OF EXTRUDED SOYBEAN MEAL PROTEIN - PENN STATE

The research will evaluate the rumen by-pass value of soybean meal extruded at different temperatures. This project builds on previous research that demonstrated increased dry matter intake, and consequently increased milk yield, in dairy cows fed diets in which solvent-extracted soybean meal was substituted with extruded soybean meal.

Summaries of the research results will be available after April 15, 2019 at www.pasoybean.org under the Research tab.

CHECKOFF FUNDED EDUCATION



AGRICULTURAL EDUCATION

EDUCATION FOR WESTERN & NORTHERN REGION PA. SOYBEAN GROWERS- PENN STATE

While much research and education has been conducted in Southeastern and Central Pennsylvania, soybean producers in other areas of Pennsylvania need information to better understand the best management practices for their production zone. Extension educators conducted soybean workshops and field days in Western and Northern regions to help growers maximize soybean production and yield.

PENN STATE SOYBEAN PRODUCTION WORKSHOPS

Soybean Production Workshops are day-long workshops designed to teach soybean producers new integrated pest and cultural management practices covering the entire growing season, from planting to harvest. Support for the workshops is provided in part by the Pennsylvania Soybean Board through the soybean checkoff.

MOBILE AG LAB – FRIENDS OF AGRICULTURE

The Mobile Agriculture Education Science Lab program brings agriculture education directly to schools across Pennsylvania. Available to any school in Pennsylvania, the Mobile Ag Lab program provides a fully equipped classroom on wheels where students in grades K-8 come to complete hands-on science experiments related to agriculture. Lessons directly related to soybeans are included in the curriculum.



NEW USES FOR SOYBEANS



The future for soy-based products looks bright. Every year, new soy products come to market thanks in part to checkoff support. More than 1,000 soy-based products are currently commercially available — from flooring to tires to candles and personal care items.

In the last decade, industrial, non-biodiesel use of soybean oil in the U.S. increased by more than 50 percent. Manufacturers of both industrial and consumer products are using soybean oil and meal to replace petroleum

and other volatile or hazardous ingredients, as well as increase product performance. The versatility of U.S. soybean components makes product applications remarkably wide-ranging, including rubber, fiber, coatings, solvents, plastics, lubricants and adhesives.

Adding yet another reason for product manufacturers to look at using soybeans, high oleic soybeans provide industrial users with an oil that remains stable in high-heat conditions. With the potential to add demand for

soybeans in markets that require performance under high-heat conditions — such as synthetic motor oils and automotive lubricants — high oleic soybeans are currently grown in Pennsylvania and 11 other states.

In addition to helping manufacturers reduce their dependency on petrochemicals and insulate themselves from price fluctuations for raw materials, soybeans enable manufacturers to replace possible carcinogens and satisfy consumer demand for

sustainable, environmentally friendly products.

The soybean checkoff supports innovative research that leads to the development and commercialization of sustainable, high-performing products that use soy to increase and diversify demand for U.S. soybeans. Checkoff-supported research has demonstrated that soy works as a cost-competitive replacement for petrochemicals in manufacturing. This expedites commercialization of soy-based products.

During the United Soybean Board's 2017 fiscal year, 17 new checkoff-supported, soy-based products were commercialized. Thanks in part to checkoff-funded research, Goodyear Tire & Rubber Company discovered using soybean oil in tires resulted in better traction in wet and winter conditions and launched a line of soy-based tires offered in a wide range of sizes, covering 77 percent of cars, minivans and SUVs on the road today.

Find out more at www.soybiobased.org

HIGH OLEIC SOYBEANS GET HIGH MARKS

High oleic soybeans pack profit-boosting potential for the soy industry, and Pennsylvania farmers are taking notice. Long-term value, strong yields and premiums are among the reasons farmers are planting high oleic.

These game-changing soybeans produce an oil with high functionality and zero trans-fats, making it an attractive option for food manufacturers and restaurants that have shifted away from commodity soybean oil due to FDA regulations. With high oleic, soybean farmers can win back some of the 4 billion pounds of annual oil demand lost to canola and other crops. High oleic soybeans offer improved functionality under high-heat conditions, which also

opens up new industrial markets.

While high oleic soybean oil is working its way into kitchens and industry and building long-term value, farmers are seeing immediate benefits to growing high oleic varieties. High oleic soybeans are bred with the same genetics and performance factors farmers have come to love in their commodity soybeans, meaning they yield on par with top-performing commodity varieties.

With no yield loss and minimal handling requirements, high oleic growers can enjoy greater profit opportunities with the premiums that come with high oleic. And while premiums are a great benefit, growing high oleic is really about driving oil value for

soybeans over the long haul. It's the innovation farmers need to grow U.S. soy's profitability and long-term demand.

With a versatile oil that provides a sustainable, highly stable, U.S.-grown product for the food industry and additional

industrial users, high oleic soybeans will protect and grow demand. It adds demand from customers looking for an oil that performs under high-heat conditions while raising demand

for all soybeans. This benefits all U.S. soybean farmers.

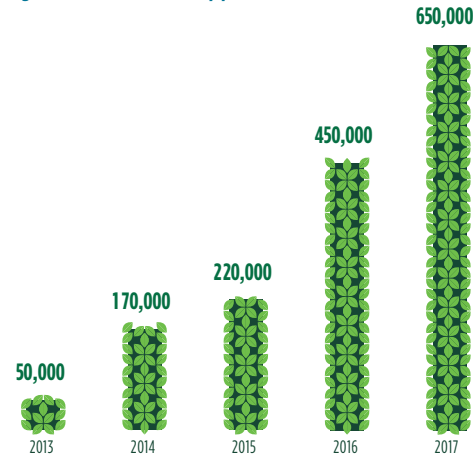
To find out more about planting high oleic, and about the added profits they can bring, visit www.soyinnovation.com.



INNOVATION THAT GROWS

High oleic soybeans have been grown commercially in the United States since 2013. To meet end-user needs, U.S. soybean farmers continue to grow more and more high oleic soybeans. And to increase U.S. soy's market share, the industry plans to grow 18 million acres by 2025.

High Oleic acres contracted by year:



18 Million Acres by 2025

By meeting the goal of 18 million acres planted, high oleic soybeans will be the fourth largest grain and oilseed crop in the U.S. behind corn, soybeans and wheat.



Chester County farmer Bill Beam hosted soybean farmers from Asia and Europe at his farm through a program sponsored by USSEC. The program was designed to show foreign buyers the sustainability of U.S. soybeans.

CREATING A PREFERENCE FOR U.S. SOYBEANS

With concern about soybean exports to China in the headlines, the soy checkoff continues to invest in new market opportunities to build a portfolio of global demand for U.S. soy products.

The Pennsylvania Soybean Board helps support the U.S. Soybean Export Council (USSEC), an organization that is working to differentiate and create preference for U.S. soy

around the world. Through a global network of international offices and strong support in the U.S., they help build a preference for U.S. soybeans and soybean products, advocate for the use of soy in feed, aquaculture and human consumption, and promote the benefits of soy use through education.

The international market is the largest customer for U.S. soy: an average of 60 percent

of the soy produced in this country is exported. Within the next 30 years, the world must feed 9 billion people, and a growing middle class will create more demand for higher value animal protein at an affordable price. As this trend continues across the globe, U.S. soy is well poised to accommodate the demand.

Much of the work at USSEC focuses on promoting the U.S. Soy Advantage to international customers. The foundation of the U.S. Soy Advantage is centered on quality composition and consistent supply of U.S. soy and soy products, as well as the sustainability practices of U.S. soybean farmers.

U.S. soybeans have an elite meal nutritional bundle (protein, amino acids, and energy) and superior oil functionality and performance. These attributes give U.S. soy an edge over the competition with ongoing innovation in the pipeline to ensure the U.S. remains the leader in the soy industry. And, the U.S. has an abundant supply of soy that

can be reliably moved from the field to domestic end users or to the coasts for export using the best transportation infrastructure in the world.

Demonstrating U.S. soybean farmers' sustainability performance is increasingly important to international customers who want to be assured that the products they are purchasing are sustainably grown. Currently, over 90 percent of U.S. soybeans are certified sustainable, according to the U.S. Soybean Sustainability Assurance Protocol (SSAP). Through their commitment to continuous improvement, U.S. soybean farmers are taking care of the environment, being good citizens, and producing their crop as efficiently as possible to deliver the most sustainably grown soy in the world. The constant willingness to incorporate new, environmentally friendly management strategies on U.S. farms means that others in the value chain can be confident in the value and sustainability of U.S. soybeans.

PA SOYBEAN YIELD CONTEST

The annual Pennsylvania Soybean Yield Contest focuses attention on agronomic and management skills that will increase soybean yields. The state is divided into five regions (see map), with awards presented to regional winners as well as an over-all state champion. To be eligible for a prize, participants must use non-irrigated soybeans, but are not restricted as to variety, fertilization, spacing or other cultural practices.

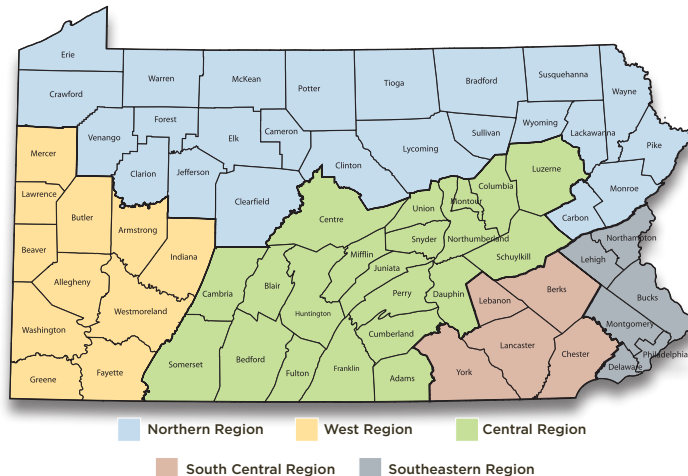
In addition to bragging rights, the state champion receives a trip for two (the winner and one other individual with a direct financial interest in their farming operation) to the Commodity Classic. The top yield winner in each region also receives a trip to the Commodity Classic.

While yields are always important, many processors and buyers are starting to look at the overall quality of the soybeans. Changes in Pennsylvania's 2018 Soybean Contest reflects that increasing emphasis on quality. The grower with the highest oil/protein in each region is recognized with a plaque. Plaques are also awarded for the 90 Bushel Club. Special recognition will also be made

for irrigated bean yield.

A summary of the crop production practices from the 2018 contest entrants will be available at the Pennsylvania Soybean Board booth at the 2019 Keystone Farm Show in York, Pa., and at www.pasoybean.org.

For complete contest rules and information on the Pennsylvania Soybean Yield Contest, see www.pasoybean.org.



The state's top producer in the 2017 Pennsylvania Soybean Yield Contest was Charles Farms (Eric and Cliff Charles) from Lancaster County.

2017 PA SOYBEAN YIELD CONTEST WINNERS

Southeast Region
John Frederick 83.55 bu./acre
New Hope, Pa., Bucks County

State Winner & South Central Region
Charles Farms 107.17 bu./acre
Lancaster, Pa., Lancaster County

Northern Region
Scott Snyder 62.37 bu./acre
Montoursville, Pa., Lycoming County

Central Region
Jay Arentz 92.24 bu./acre
Littlestown, Pa., Adams County

Western Region
Mike Reskovac 71.08 bu./acre
Waltersburg, Pa., Fayette County