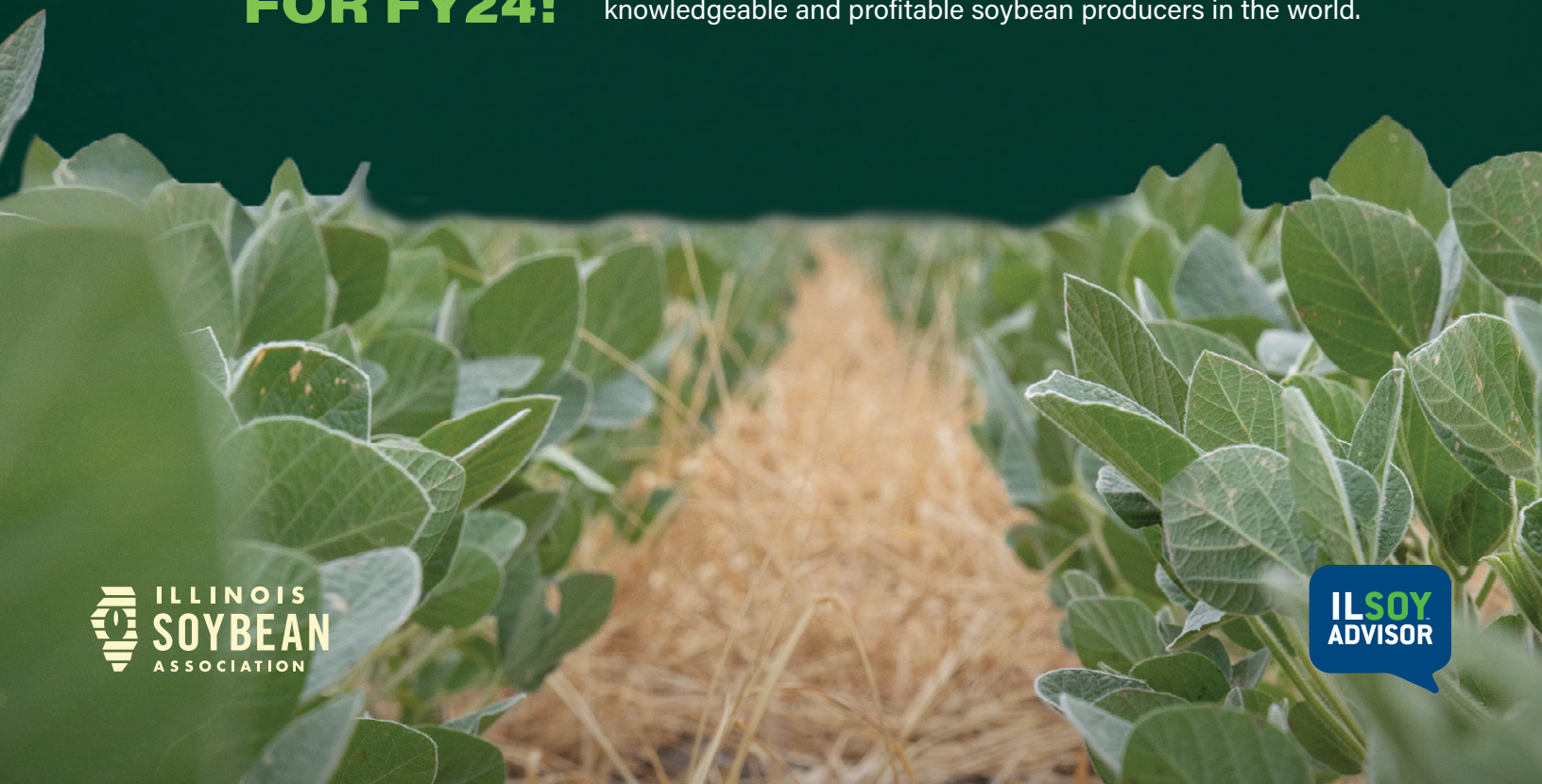
YOUR FY24 RESEARCH PROJECTS

ISA DOUBLES THE NUMBER OF SOYBEAN PRODUCTION RESEARCH PROJECTS APPROVED FOR FY24!

The Illinois Soybean Association (ISA) approved 16 Soybean Production research projects to be funded by the FY24 checkoff. Half are new; half are continuing research projects. Many research projects span multiple years to more fully understand and address critical issues affecting the future of Illinois soybean production.

This brochure provides a glimpse into each project. You can find more details, in-progress updates and results about the projects at ILSoyAdvisor.com. We also encourage you to connect with the lead researcher to learn more about projects that interest you.

Plus, you can connect with our ISA agronomists to learn more and share ideas for other types of research you'd like to see your checkoff dollars fund. ISA is committed to working with the state's researchers on projects that will enable Illinois soybean farmers to be the most knowledgeable and profitable soybean producers in the world.



ILLINOIS SOYBEAN ASSOCIATION

ILSOY ADVISOR

YOUR FY24 SOYBEAN PRODUCTION RESEARCH PROJECTS

CONSERVATION PRACTICES

NEW! Controlled-Release Nitrogen and P&K Fertilizer Management in Strip-Till 30" Rows and No-Till 15" Rows for High-Yield Soybeans

Daniel Schaefer, Nutrient Stewardship Director, Illinois Fertilizer and Chemical Association, 217-202-5173, dan@ifca.com

This project aims to better understand how strategic nutrient management can impact soybean yield across northern and central Illinois. It will evaluate different nutrient strategies under no-till, strip-till, 15" rows, 30" rows, with cover crops, and without cover crops. Data will be used to inform future year trials and ultimately provide farmers with best management practices for nutrient management in soybean crops.

NEW! Integrated Management Strategies for Maximizing Soybean Production in Conservation Tillage Systems

Dr. Giovani Preza Fontes, Assistant Professor & Field Crops Extension Agronomist, University of Illinois Urbana-Champaign, 217-244-0541, giovani3@illinois.edu

To help more farmers feel confident implementing conservation tillage systems, this project intends to gain insights into the interactions across soil types, starter fertilizer, tillage systems and row spacings and how they affect soybean growth, nutrient uptake, and seed yield and quality. The results of this multi-year project will enable more farmers to optimize soybean production under conservation tillage systems while preserving water and soil resources.

NEW! Quantifying Conservation Benefits for Illinois Soybean Farmers: Extrapolating On-Farm Trial Measurements to Commercial Farm Fields Through Validated Algorithms and Methods

Dr. Kaiyu Guan, Associate Professor, University of Illinois Urbana-Champaign, 217-300-2690, kaiyug@illinois.edu

This project will evaluate current and past trial data, as well as implement additional trials across the state, to help quantify the benefits of adopting conservation management practices so that Illinois' soybean farmers are equipped to take advantage of developing ecosystem marketplaces. Project output will include reports farmers can use to inform their management decisions and improve outcomes specific to soybean productivity, greenhouse gas emissions, soil carbon sequestration and water quality.

Benchmarking and Integrating Soil Health, Water Quality and Climate-Smart Footprints of Illinois Soybeans

Dr. Andrew Margenot, Associate Professor, University of Illinois Urbana-Champaign, 217-300-7059, margenot@illinois.edu

This multi-year project (2023-2027) is designed to identify soil health, water quality and climate footprint best practices and metrics across regions and cropping systems (soy-corn, double-crop wheat-soy with corn rotations). It will help inform practice-based recommendations that protect soil health and water quality, as well as provide insights farmers can use as they explore carbon markets.

Adaptive Management for Maximizing Soybean Production Following Cereal Rye Termination

Dr. Giovani Preza Fontes, Assistant Professor & Field Crops Extension Agronomist, University of Illinois Urbana-Champaign, 217-244-0541, giovani3@illinois.edu

Trials in this multi-year project will help researchers better understand 1) how cereal rye influences N and S availability and soybean uptake, and 2) evaluate soybean yield response to N and S fertilization, alone and in combination, after a cereal rye cover crop.

Understanding the Importance of Cover Crop Planting Date in Illinois Row Crop Production

Nathan Johanning, Extension Educator, University of Illinois Extension, 618-939-3434, njohann@illinois.edu

To encourage farmers to include more cover crops within their cropping systems, this project is comparing 1) different cereal rye seeding dates and rates before soybean, and 2) different planting dates of two clover species after soybean harvest and ahead of corn. Farmers will gain better insights into cover crop planting and seeding rate recommendations and best management practices.

IN-SEASON AGRONOMY

NEW! An Economic Evaluation of the Impacts of Site-Specific Management for Increasing Soybean Production in Southern Illinois

Dr. Jay Nair, Assistant Professor, Southern Illinois University, 618-453-7105, jay.nair@siu.edu

To help close the soybean yield gap between average and record yields, this project will break down management practices based on specific needs of different areas within a field. It will define the yield variability within a field as high, medium and low; identify seeding rates that can help optimize yield; better understand the role biologicals can play in crop nutrient utilization; and evaluate the economics of site-specific management compared to whole-field management practices.

NEW! Injury Potential to Very Early Planted Soybean from Various Soil Residual Herbicides / Active Ingredients

Dr. Aaron Hager, Professor & Faculty Extension Specialist, University of Illinois Urbana-Champaign, 217-333-9646, hager@illinois.edu

While interest in planting soybeans earlier continues to increase, concerns around preemergence (PRE) herbicide injury to emerging seedlings continue to linger. Early planting often means cold, wet soil conditions that can delay seed germination and prolong plant emergence. These conditions can reduce the plant's ability to metabolize PRE herbicides and result in crop injury. This project will test several herbicides and classes of chemistry to better understand which are more prone to cause crop injury under early planting conditions.

NEW! Evaluating Leaf Nutrient Tissue Testing and Relation to Soybean Grain Yield

Dr. Fred Below, Professor, University of Illinois Urbana-Champaign, 217-333-9745, fbelow@illinois.edu

Because soybeans are able to remobilize nutrients from lower to newly developing nodes, more information is needed to understand which nutrients and in what quantities are made available to new nodes. This project will use tissue testing to gain these insights and help establish more accurate and timely in-season nutrient recommendations to maximize soybean yield.

NEW! Enhancing the Profitability of Wheat-Soybean Double Cropping

Dr. Jessica Rutkoski, Assistant Professor, University of Illinois Urbana-Champaign, 217-372-6258, jrut@illinois.edu

Double cropping soybeans after winter wheat is an attractive approach to enhancing profitability in Midwest crop rotations and improving soil health. To capitalize on this cropping system, this project will identify high-yielding winter wheat varieties that can be harvested earlier and enable earlier planting of double-crop soybeans to maximize soybean yield potential.

Evaluation and Commercialization of SOYLEIC Varieties in Illinois

Dr. Eliana Monteverde, Assistant Professor, University of Illinois Urbana-Champaign, 217-300-7658, elianam@illinois.edu

To help Illinois soybean farmers capitalize on market opportunities for high oleic, low linolenic (HOLL) soybean oil, this project continues the breeding efforts to select and license varieties that combine competitive yields with the value-added SOYLEIC™ trait.

University of Illinois Crop Science Variety Trials – Protein, Oil and SCN Resistance

Darin Joos, Research Agronomist, University of Illinois Urbana-Champaign, 217-778-7047, joos@illinois.edu

In addition to using the SCIO CNST NIR technology on the combine to determine the protein and oil content of each tested variety, soil samples will be collected at harvest to assess population levels of soybean cyst nematode (SCN). Data will be shared with Illinois farmers through several methods, including the UI Variety Trial website.

PEST MANAGEMENT

NEW! Documenting the Extent of Resistance to Group 15 Herbicides in Illinois Waterhemp Populations

Dr. Aaron Hager, Professor & Faculty Extension Specialist, University of Illinois Urbana-Champaign, 217-333-9646, hager@illinois.edu

To better understand the level of resistance to Group 15 herbicides, this project will collect and screen waterhemp populations from Illinois soybean fields. Results will be used to provide farmers with recommendations on how best to incorporate these herbicides into integrated weed management programs. Resistant populations will be used in subsequent research to identify the gene(s) conferring the metabolism-based resistance.

NEW! Assessing Insect Pest Effects on Yield and ROI of Pest Control Inputs

Dr. Nicholas Seiter, Assistant Professor, University of Illinois Urbana-Champaign, 812-593-4317, nseiter@illinois.edu

This multi-year project aims to identify the insect pests affecting Illinois soybean crops, their impact on soybean yield and the return on investment of control mechanisms. It will help determine threshold levels for insect pests responsible for reducing grain quality and yield, as well as develop integrated pest management recommendations.

Assessing the Impact of Cover Crops on SCN Populations in Field Conditions

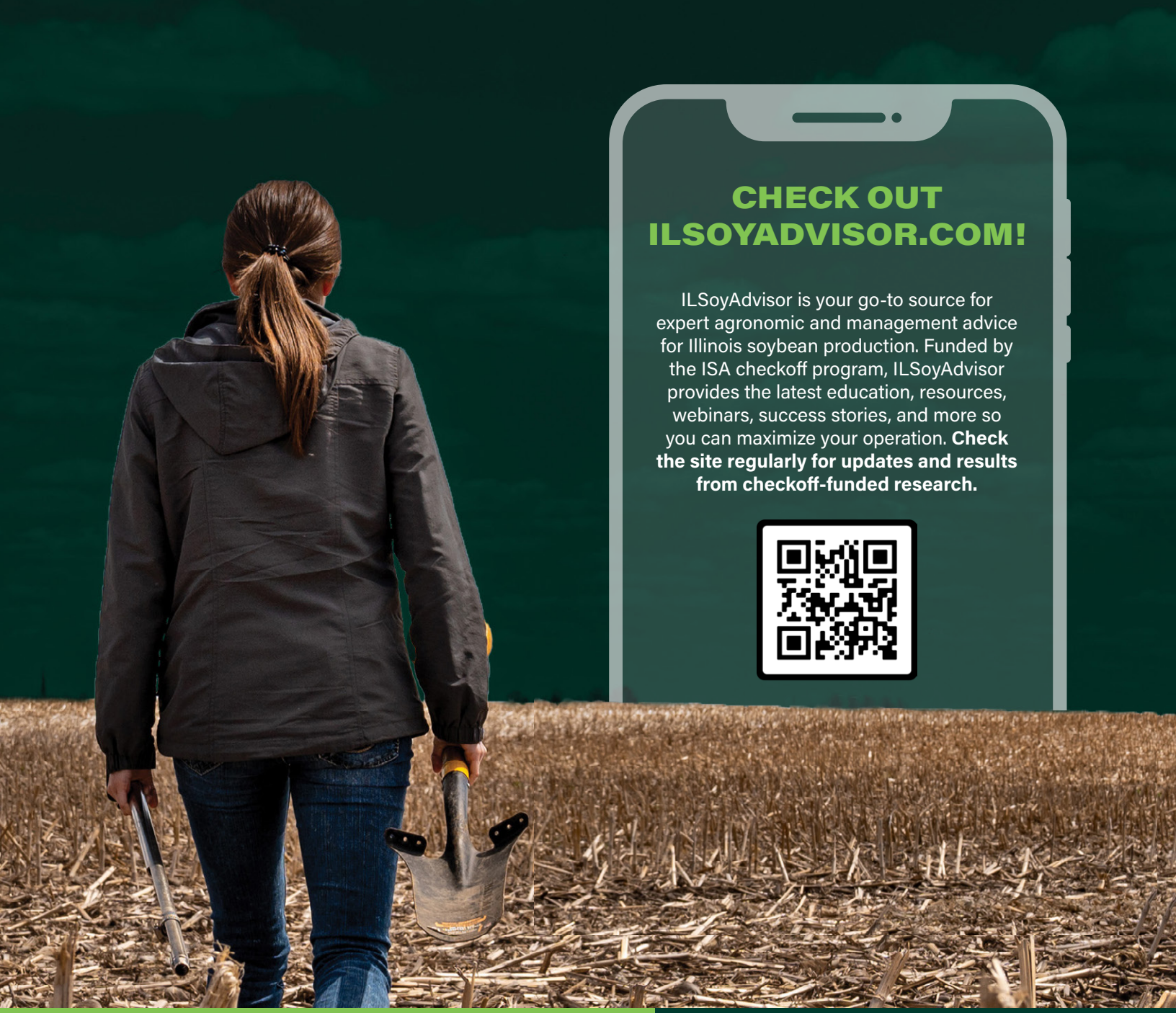
Dr. Jason Bond, Professor of Plant Pathology, Southern Illinois University, 618-453-4309, jbond@siu.edu

This project is using five established cover crop fields throughout Illinois to determine how different types of cover crops affect SCN populations. Insights will be used to provide the state's soybean farmers with improved management recommendations.

Soybean Stem Pests: Survey, Impact and Education

Dr. Jason Bond, Professor of Plant Pathology, Southern Illinois University, 618-453-4309, jbond@siu.edu

Continuing work already underway across Illinois' soybean fields, this project aims to identify new and emerging stem diseases and insect pests that negatively impact soybean production and yield. It will assess management practices and help prioritize future research to determine best management practices.



CHECK OUT ILSOYADVISOR.COM!

ILSoyAdvisor is your go-to source for expert agronomic and management advice for Illinois soybean production. Funded by the ISA checkoff program, ILSoyAdvisor provides the latest education, resources, webinars, success stories, and more so you can maximize your operation. **Check the site regularly for updates and results from checkoff-funded research.**

SEE UPDATES AND LEARN MORE ABOUT THESE PROJECTS AND RESEARCH TEAMS AT:

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The Illinois Soybean Association (ISA) checkoff and membership programs represent more than 43,000 soybean farmers in Illinois. The checkoff funds market development and soybean production efforts while the membership program supports the government relations interests of Illinois soybean farmers at the local, state and national level through the Illinois Soybean Growers (ISG). ISA upholds the interests of Illinois soybean producers through promotion, advocacy, research and education with the vision of becoming a market leader in sustainable soybean production and profitability. For more information, visit the websites www.ilsoy.org and www.ilsoygrowers.com.

Funded by the Illinois Soybean Association Checkoff Program.