

PINNEY-PURDUE AGRICULTURAL CENTER RESEARCH AND DEMONSTRATION PROJECTS 2022

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Department of Agronomy

Potassium Budgets in Indiana Corn Production

Purpose: Evaluate the agronomic efficiency of currently recommended potassium (K) fertilizer rates and evaluate theoretically improved soil potassium tests for ability to predict soil K supply. Contact: Alex Helms, Shaun Casteel, and James Camberato, Agronomy

Potassium Budgets in Indiana Soybean Production

Purpose: Evaluate the agronomic efficiency of currently recommended potassium (K) fertilizer rates and evaluate theoretically improved soil potassium tests for ability to predict soil K supply. Contact: Alex Helms, Shaun Casteel, and James Camberato, Agronomy

Interaction of Planting Date, Hybrid Maturity, and Fungicide on Corn Disease Control and Yield

Purpose: Examine interaction between corn planting date (early & normal), hybrid maturity (early & normal), and fungicide (yes & no) on disease control and yield. Contact: Darcy Telenko/Dan Quinn, Agronomy

Corn Response to Seeding Rate

Purpose: Accumulate additional data for continual updating of corn seeding recommendations for the state of Indiana. Contact: Dan Quinn, Agronomy

Corn response to Sulfur Application Source and Timing – Rice Farm

Purpose: Evaluate corn response to sulfur fertilizer applied at planting or side-dress in the forms of ATS or AMS. Contact: Bob Nielsen/Jim Camberato, Agronomy

Exploring physiological variation by using process-based crop model and remote sensing. – PPAC

Purpose: Collect comprehensive physiological dataset via multiple instruments in the field. Contact: Diane Wang/Sujata Bogati, Agronomy

Sulfur Fertilizer Products - Rice Farm

Purpose: Evaluate AMS, MESZ, Tiger CR, Gypsum plus new formulations for soybean response to treatments. Contact: Shaun Casteel, Agronomy

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Department of Agronomy (Continued)

Sulfur AMS Rate x Timing - Rice Farm

Purpose: Determine optimal timing of sulfur application (March versus at planting) with AMS and polysulfate at three application rates.

Contact: Shaun Casteel, Agronomy

Sulfur Fixation Effects - Rice Farm

Purpose: Evaluate effects of N fixation ureide and N15 based on planting treatments of pelletized gypsum, AMS, and urea, versus mid season treatments of N and S.

Contact: Shaun Casteel, Agronomy

Sulfur x Foliar Protection, Field Scale Plots - Rice Farm

Purpose: Determine potential synergies with baseline sulfur application and in-season R4 applications of fungicide and insecticide.

Contact: Shaun Casteel, Agronomy

Sulfur x Foliar Protection, Small Scale Plots - Rice Farm

Purpose: Determine potential synergies with baseline sulfur application prior to emergence and in-season R4 applications of fungicide and insecticide.

Contact: Shaun Casteel, Agronomy

Sulfur x NPK Nutrient Use Efficiency – Rice Farm

Purpose: Evaluate potential of synergistic yield effects of sulfur plus phosphorous applications.

Contact: Shaun Casteel, Agronomy

Soybeans Seeding Rate (Plant Population) x Planting Date - PPAC

Purpose: Determine optimal soybean seeding rates for planting dates in May and June.

Contact: Shaun Casteel, Agronomy

Sulfur Fixation Effects -PPAC

Purpose: Evaluate effects of N fixation ureide and N15 based on planting treatments of pelletized gypsum, AMS, and urea, versus mid season treatments of N and S.

Contact: Shaun Casteel, Agronomy

Product Evaluations-PPAC

Purpose: Evaluate several products from seed treatments, in-furrow applications, and foliar treatments across multiple varieties.

Contact: Shaun Casteel, Agronomy

Sulfur x Planting Date - PPAC

Purpose: Evaluate effects of AMS applied at/near two plantings: Early versus late planting.

Contact: Shaun Casteel, Agronomy

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Department of Agronomy (Continued)

Biolevel Effects on soil N and Soybean – PPAC sand soil type

Purpose: Evaluate soybean response in growth development, N supply, and yield under various soil types (loam, sand, prairie). Biolevel applied to seed and soil when factored with AMS.

Contact: Shaun Casteel, Agronomy

Biolevel Effects on soil N and Soybean – PPAC loam soil type

Purpose: Evaluate soybean response in growth development, N supply, and yield under various soil types (loam, sand, prairie). Biolevel applied to seed and soil when factored with AMS.

Contact: Shaun Casteel, Agronomy

Sulfur Fertilizers - PPAC

Purpose: Evaluate AMS, MESZ, Tiger CR, Gypsum plus new formulations for soybean response to treatments.

Contact: Shaun Casteel, Agronomy

Sulfur x Foliar Protection (Small Plot Trial) - PPAC

Purpose: Evaluate AMS application at/near planting with and without follow up R4 fungicide + insect spray.

Contact: Shaun Casteel, Agronomy

Sulfur-NPK x Variety (C1 includer, C1 intermediate) - PPAC

Purpose: Investigate sulfur + P potential for synergistic yield improvement. Varieties are available that can limit C1 uptake versus varieties that are more sensitive to C1.

Contact: Shaun Casteel, Agronomy

Biological Seed Treatments - PPAC

Purpose: Evaluate effects of biological seed treatments on soybean yield. Multi state project.

Contact: Shaun Casteel, Agronomy

Evaluation of combining ability and heterosis in sorghum hybrids- PPAC

Purpose: Evaluate environmental effects on variety traits in sorghum hybrids.

Contact: Gebisa Ejeta and Nate Bowser, Agronomy

Department of Entomology

Black Cutworm Pheromone Trapping

Purpose: Monitor the presence of black cutworm.

Contact: John Obermeyer/Laura Ingwell, Entomology

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Department of Entomology, continued

Western Bean Cutworm Trapping

Purpose: Monitor the presence of western bean cutworm.
Contact: John Obermeyer/Laura Ingwell, Entomology

Corn Ear Worm Trapping

Purpose: Monitor the presence of corn earworm.
Contact: John Obermeyer/Laura Ingwell, Entomology

Corn Trap Crop

Purpose: A trap crop for corn rootworm eggs in 2022 to provide experimental area in 2023.
Contact: Christian Krupke, Entomology

Soybean rotation for future research on insect pests of corn

Purpose: Maintain a soybean crop rotation for future insect trials in corn.
Contact: Christian Krupke, Entomology

Indiana Cooperative Agricultural Pest Survey (CAPS) for Invasive Pests

Purpose: Site for trap grid to monitor for invasive insect species.
Contact: Christian Krupke, Entomology

Department of Botany & Plant Pathology

5 trials - Weed Science Confidential Evaluation of Company Products/Technology under Development

Purpose: Determine the effectiveness of new adjuvants, rates, herbicide, and/or equipment.
Contact: Julie Young, Botany & Plant Pathology

Weed Science – Herbicide carry over on sandy loam soil type

Purpose: Determine rotational crop tolerance to sequential applications of HPPD-inhibiting herbicides in corn.
Contact: Julie Young, Botany & Plant Pathology

Herbicide Degradation under cover crops

Purpose: Study effects of herbicide degradation under multiple cover crops.
Contact: Lucas Maia, Julie Young, Botany & Plant Pathology

Field Day Herbicide Demonstration Plot

Purpose: Demonstrate weed control in soybean herbicide tolerance systems Xtend, Enlist, Liberty, and Round-Up.
Contact: Julie Young, Botany & Plant Pathology

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Department of Botany & Plant Pathology, cont'd

Integrated Disease Management for Tar Spot in Organic Corn

Contact: Darcy Telenko

Uniform Fungicide Comparison for Tar Spot in Corn

Contact: Darcy Telenko

Efficacy of CX-9032 and CX-10250 Against Tar Spot in Corn

Contact: Darcy Telenko

Fungicide Timing and Application for Tar Spot in Corn

Contact: Darcy Telenko

Industry Sponsored Fungicide Comparison for Tar spot and Foliar Diseases in Corn

Contact: Darcy Telenko

Fungicide Timing and Application for Tar Spot in Corn

Contact: Darcy Telenko

Fungicide Efficacy and Timing for Tar Spot in Corn

Contact: Darcy Telenko

Fungicide Programs for Tar Spot in Corn

Contact: Darcy Telenko

AgPMT – Tillage and Variety Evaluation for Diseases in Corn

Contact: Darcy Telenko

Integrated Management of Tar Spot of Corn Hybrid, Fungicide Timing and Model Validation

Contact: Darcy Telenko

Uniform CDWG Comparison Trials for Xyway on Corn

Contact: Darcy Telenko

Xyway LFR Fungicide Programs in Field Corn

Contact: Darcy Telenko

Fungicide Programs for Tar Spot in Corn

Contact: Darcy Telenko

Evaluation of Foliar Fungicides in Corn

Contact: Darcy Telenko

Fungicide Programs for Tar Spot in Corn

Contact: Darcy Telenko

**PINNEY-PURDUE AGRICULTURAL CENTER
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Department of Botany & Plant Pathology, cont'd

Fungicide Timing and Application for Tar Spot in Corn

Contact: Darcy Telenko

Fungicide Programs for Tar Spot in Corn

Contact: Darcy Telenko

Fungicide Timing and Application for Tar Spot in Corn

Contact: Darcy Telenko

Evaluation of Drone Applications for Tar Spot in Corn

Contact: Darcy Telenko

Hybrid and Fungicide Evaluation for Tar Spot in Corn

Contact: Darcy Telenko

Evaluation of Seed Treatment for Management of Sudden Death Syndrome in Soybean

Contact: Darcy Telenko

Fungicide Comparison for Foliar Disease in Soybean

Contact: Darcy Telenko

Integrated Disease Management for White Mold in Organic Soybean

Contact: Darcy Telenko

Uniform Fungicide Evaluation for White Mold in Soybean

Contact: Darcy Telenko

Fungicide Evaluation for White Mold in Soybean

Contact: Darcy Telenko

Compare the Efficacy of Fungicides for White Mold in Soybean

Contact: Darcy Telenko

Plant disease phenotyping studies and decision support systems for Tar Spot and Gray Leaf Spot – Rice Farm

Purpose: The goals are 1) to develop tools for yield prediction, and (2) early warning systems using weather and related disease parameters to support producer management decisions.

Contact: Christian Cruz

Plant disease phenotyping studies and decision support systems for Tar Spot and Gray Leaf Spot – PPAC

Purpose: The goals are 1) to develop tools for yield prediction, and early warning systems using weather and related disease parameters to support producer management decisions.

Contact: Christian Cruz

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Department of Botany & Plant Pathology, cont'd

Genetics of Disease resistance to maize tar spot

Purpose: Discover new sources of tar spot resistance via induced mutagenesis.

Contact: Gurmukh Johal

Resistance to maize tar spot

Purpose: Evaluate diverse maize genotypes for response to tar spot resistance.

Contact: Stephen Goodwin, Raksha Singh

Department of Horticulture & Landscape Architecture

No-till Sweet Corn into winter rye

Purpose: Investigate stand establishment of sweet corn planted into winter rye cover crop terminated by rolling or other means in comparison to conventional tillage.

Contact: Elizabeth Maynard, Horticulture

USDA sweet corn trueness to variety test

Purpose: A USDA project to test commercially available sweet corn seed for trueness to variety.

Contact: Elizabeth Maynard, Horticulture

Demonstration of drip irrigation scheduling methods

Purpose: Use of evapo-transpiration and soil moisture sensors for managing drip irrigation in vegetable and melon crops.

Contact: Elizabeth Maynard, Wenjing Guan, Horticulture

Demonstration of drip irrigation soil wetting patterns

Purpose: Demonstrate wetting patterns of soil irrigated with various drip tape types and installation methods.

Contact: Elizabeth Maynard, Wenjing Guan, Horticulture

Arugula Seed Increase

Purpose: Increase seed inventory of Arugula, a slow bolting variety developed at Purdue.

Contact: Elizabeth Maynard, Horticulture

Improving Two Spotted Spider Mite Management Under High Tunnel Cucumber Production

Purpose: Evaluate cucumber varieties for tolerance and control practices for two spotted spider mites in high tunnel production using organic methods. A second high tunnel will be utilized to evaluate miticides for efficacy under high tunnel conditions.

Contact: Laura Ingwell and Elizabeth Maynard, Horticulture

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Department of Horticulture & Landscape Architecture, cont'd

Cover Crop Herbicide Trial in Pumpkin

Purpose: Demonstrate the influence of cereal rye cover crop on weed control in jack o'lantern pumpkin production.

Contact: Steve Meyers, Horticulture

Watermelon Weed Science Trial

Purpose: Document herbicide injury symptoms associated with reduced rates of agronomic herbicides.

Contact: Steve Meyers, Horticulture

Banana Pepper Tolerance to Clomazone Herbicide

Purpose: Determine the response of two banana pepper cultivars to three rates of Command herbicide (clomazone).

Contact: Steve Meyers, Horticulture

Understanding the integration of production, food safety, and profitability in small to medium size operations

Purpose: Contribute to knowledge of cultural practices, crop quality, production capacity, soil health, and food safety expectations.

Contact: Petrus Langenhoven, Horticulture

Department of Forestry & Natural Resources

2005 Black Cherry Coppice Trial

Purpose: To test the effect of coppicing cherry trees after four years of growth on timber form and quality.

Contact: Don Carlson and Brian Beheler - Department of Forestry & Natural Resources. Phil O'Connor, IN-DNR Division of Forestry

2009 Black Cherry Progeny Test

Purpose: One of a series of progeny tests of various cherry families from a grafted seed orchard.

Contact: Don Carlson, Caleb Kell, and Brian Beheler - Department of Forestry & Natural Resources

2009 Containerized Stock Test

Purpose: Compare Red Oak and Walnut grown in two different sized containers vs. bare rootstock.

Contact: Don Carlson, Caleb Kell, Lenny Farlee, and Brian Beheler - Department of Forestry & Natural Resources

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Department of Forestry & Natural Resources, cont'd

2011 MOG Butternut Study

Purpose: Compare hybrid and pure Butternut in relation to Black Walnut and Red Oak.
Contact: Don Carlson, Caleb Kell, Brian Beheler, and Doug Jacobs - Department of Forestry & Natural Resources

2011-2013 Advanced Butternut Seed Orchard

Purpose: A grafted seed orchard with new selections that have proven resistant to Butternut Canker fungus in screening tests at Purdue University.
Contact: Don Carlson, Caleb Kell, and Brian Beheler - Department of Forestry & Natural Resources

Collaborative Forestry Research Study

Purpose: Study the Competition, coexistence and community structure: Identifying the mechanisms that structure Indiana forests.
Contact: Dr. Brady Hardiman

Natural Resources Demonstration Area

Purpose: Natural Resource Management demonstration area maintained since 2002 at PPAC. The site was developed to provide a consolidated location with a wide range of natural resource research and management examples to allow efficient use during educational field days, workshops for the general public, as well as training and applied research opportunities for future FNR students.
Contact: Don Carlson, Jarred Brooke, Phil Woolery, Lenny Farlee, and Brian Beheler, Forestry & Natural Resources

United States Department of Agriculture-ARS

USDA-ARS Northern Regional Soybean Trials

Purpose: Evaluating United States Department of Agriculture-Agricultural Research Service (USDA-ARS) Northern Soybean Tests cultivars grouped by maturity for comparison.
Contact: Guohong Cai, USDA-ARS

Food Science

Specialty corn flours as novel food ingredients – values, challenges, and applications

Purpose: Produce isolated seed increase of sweet corn grain for laboratory testing.
Contact: Yuan Yao, Food Science

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Other Cooperating Units or Areas

Corn production under cover crop, no-till, and conventional systems

Purpose: Demonstrate corn production under three tillage systems.

Contact: Phil Woolery, Nikky Witkowski, Bob Yoder, Azad Chalal - Area X Extension Educators

Soybean production under cover crop, no-till, and conventional systems

Purpose: Demonstrate soybean production under three tillage systems.

Contact: Phil Woolery, Nikky Witkowski, Bob Yoder, Azad Chalal - Area X Extension Educators

Soybean Aphid Suction Trapping

Purpose: Monitor the presence of soybean aphid.

Contact: Dave Voegtlin, National Soybean Research Center

National Weather Service Manual Read Station

Purpose: Provide daily weather information to the National Weather Service.

Contact: Pinney-Purdue Ag Center Staff

Purdue Automatic Weather Station (PAWS)

Purpose: Automated collection of weather data from this site sent to a data base at the Indiana State Climate Office, which can be observed at <http://climate.agry.purdue.edu>.

Contact: Beth Hall, Agronomy