2017 DAVIS-PURDUE AGRICULTURAL CENTER RESEARCH AND DEMONSTRATION PROJECTS

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Indigenous Soil Potassium (K) Supply, Fertilizer K Use-Efficiency, and K Budgets in Indiana Corn and Soybean Production
Purpose: Evaluate the agronomic efficiency of currently recommended K fertilizer rates; evaluate theoretically improved soil K tests for the ability to predict soil K supply.
    Contact: Shaun Casteel and Jim Camberato; Agronomy

Corn Hybrid Performance Trial
Purpose: Test yield performance of corn hybrids in Indiana
    Contact: Phil DeVillez, Agronomy

Non-GMO Corn Hybrid Performance Trial
Purpose: To evaluate non-GMO corn hybrids.
    Contacts: Phil DeVillez, Bill Foster; Agronomy

Soybean Variety Performance
Purpose: Test yield performance of soybean varieties in Indiana
    Contact: Phil DeVillez, Agronomy

Industry Soybean Performance Trial
Purpose: Industry soybean varietal yield trial.
    Contacts: Phil DeVillez and Bill Foster; Agronomy

Non-Glyphosate Tolerant Soybean Varietal Performance Trial
Purpose: To evaluate non-Roundup Ready soybean varieties.
    Contacts: Phil DeVillez and Bill Foster; Agronomy

Soybean Seeding Rate Trial
Purpose: Identify agronomically and economically optimum seeding rates for soybean production in Indiana.
    Contact: Shaun Casteel; Agronomy

Soybean Sulfur Timing Trial
Purpose: Evaluate sulfur applications to soybeans with and without glyphosate
    Contact: Shaun Casteel; Agronomy
Drainage Water Management Study
Purpose: Determine effects of drainage water management on crop yields, nitrate loads in tile drains, water table, soil quality, and crop yields.
Contacts: Jane Frankenberger; Agricultural & Biological Engineering, Eileen Kladivko and Laura Bowling; Agronomy

Long Term Impact of Cover Crops on Cash Crop Nutrient Uptake, Yield & Nitrogen Application Rate
Purpose: Evaluate barriers in cover crop inclusion; deepen our understanding of cover crop to affect the availability of manure and inorganic Nitrogen to cash crops in multiple cropping systems.
Contact: Shalamar Armstrong, Agronomy

17-DPAC-AMATA-ALS
Purpose: Investigate the utility of ALS herbicides for control of waterhemp, identify ALS-resistance mechanism and frequency in waterhemp population
Contact: Bryan Young and Bill Johnson, Botany and Plant Pathology

17-DPAC-DupontXtendDemo
Purpose: DuPont herbicide demonstration in soybean
Contact: Bryan Young and Bill Johnson, Botany and Plant Pathology

17-DPAC-Enlist
Purpose: Herbicide programs for waterhemp control in Enlist soybean
Contact: Bryan Young and Bill Johnson, Botany and Plant Pathology

17-DPAC-Monsanto L02_02
Purpose: Confidential Monsanto product evaluation for PPO-resistant waterhemp
Contact: Bryan Young and Bill Johnson, Botany and Plant Pathology

17-DPAC-Monsanto L02_03
Purpose: Confidential Monsanto product evaluation for PPO-resistant waterhemp
Contact: Bryan Young and Bill Johnson, Botany and Plant Pathology

17-DPAC-MonsantoSystems
Purpose: Herbicide programs in Xtend and Liberty Link soybean
Contact: Bryan Young and Bill Johnson, Botany and Plant Pathology

17-DPAC-PPOresidual
Purpose: PRE applications of fomesafen and metolachlor for control of waterhemp
Contact: Bryan Young and Bill Johnson, Botany and Plant Pathology

17-DPAC-SoySystems
Purpose: Indiana Soybean Alliance funded demonstration plots
Contact: Bryan Young and Bill Johnson, Botany and Plant Pathology

17-DPAC-WeedSize
Purpose: Influence of waterhemp size on herbicide efficacy - DuPont
Contact: Bryan Young and Bill Johnson, Botany and Plant Pathology
**17-DPAC-BAS850 PRE**
Purpose: Confidential BASF  
Contact: Bryan Young and Bill Johnson, Botany and Plant Pathology

**17-DPAC-BAS850 Tankmix**
Purpose: Confidential BASF  
Contact: Bryan Young and Bill Johnson, Botany and Plant Pathology

**Waterhemp Management and Cover Crops**
Purpose: Determine influence of cover crop on waterhemp management  
Contact: Bryan Young and Bill Johnson, Botany and Plant Pathology

**Roundup Ready Canola as a Cover Crop**
Purpose: Evaluate Roundup Ready canola as a cover crop  
Contact: Bryan Young and Bill Johnson, Botany and Plant Pathology

**Cover Crop Influence on Weeds**
Purpose: Canola blend vs cereal rye vs no cover crop influence on weeds, corn, and soybean  
Contact: Bryan Young and Bill Johnson, Botany and Plant Pathology

**Cover Crops in Herbicide Resistant Soybean**
Purpose: Evaluate cover crop systems in herbicide-resistant soybean  
Contact: Bryan Young and Bill Johnson, Botany and Plant Pathology

**Corn Yield Response to Biological Inocculants**
Purpose: Field-scale trial to compare the effect on corn of various commercially available biological Inocculants.  
Contact: Bob Nielsen, Jim Camberato and Jason Lee; Agronomy

**Comparison of In-furrow and 2 X 2 Starter Fertilizers on the Growth, Development, and Yield of Continuous Corn**
Purpose: Better define fertilizer response of corn for making fertility recommendations in monoculture corn systems.  
Contacts: Bob Nielsen, Jim Camberato and Cody Hornaday; Agronomy

**Nitrogen Response of Corn and Soybeans**
Purpose: Determine optimum Nitrogen rate for corn.  
Contacts: Bob Nielsen & Jim Camberato; Agronomy

**Century of Corn and Soybean Plots**
Purpose: Evaluation of historical corn and soybean varieties  
Contacts: Bob Nielsen and Shaun Casteel, Agronomy

**Controlled Drainage for Improvement of Water Quality**
Purpose: Quantify environmental benefits of managed drainage and use of soil amendments under standard crop production.  
Contact: Brenda Hofmann, Biological Science Technician and Javier Gonzalez, Soil Scientist with USDA-ARS National Soil Erosion Research Lab
**Interaction of management practices on soil health and water quality**
Purpose: Develop management techniques using cover crops and gypsum to increase soybean yield while maintaining soil health.
   Contact: Brenda Hofmann, Biological Science Technician and Javier Gonzalez, Soil Scientist with USDA-ARS National Soil Erosion Research Lab

**Cover crops, phosphorus and sulfur management on soil quality and grain yield**
Purpose: Evaluate the effects of cover crops on soil phosphorus, sulfur and soil quality and grain yield
   Contact: Brenda Hofmann, Biological Science Technician and Javier Gonzalez, Soil Scientist with USDA-ARS National Soil Erosion Research Lab

**Legacy of Phosphorus**
Purpose: Evaluate soil phosphorus drawdown rates, plant phosphorus uptake, and potential changes in corn and soybean yield with elimination of phosphorus fertilizer to long-term Fertility research plots.
   Contact: Brenda Hofmann, Biological Science Technician and Javier Gonzalez, Soil Scientist with USDA-ARS National Soil Erosion Research Lab

**Effect of Gypsum on Crop Yield and Soil Properties**
Purpose: Evaluate the effect of gypsum on crop yields and soil properties.
   Contact: Jim Camberato; Agronomy

**Cover Crop Management with Roller Crimper in Soybean Production System**
Purpose: Compare weed management, soybean yield and soil temperature and moisture in cereal rye plots.
   Contact: Michael O'Donnell; Purdue Extension-Delaware County

**Influence of the rate and frequency of FGD gypsum applications and cover crops on soil health and water quality**
Purpose: Determine the effects of gypsum on grain yield and soil and water quality.
   Contact: Brenda Hofmann, Biological Science Technician and Javier Gonzalez, Soil Scientist with USDA-ARS National Soil Erosion Research Lab

**Evaluation of Corn Herbicides and Corn and Soybean Fungicides**
Purpose: Determine the effect of corn herbicides on weed control and corn and soybean fungicides on yield in soybeans.
   Contact: Greg Webb, Bayer Crop Science

**Pre-emerge and Post-emerge Herbicide Evaluation on Grass and Broadleaf Weeds in Corn and Soybeans**
Purpose: To determine the control of grass and broadleaf weeds in corn and soybeans by different herbicides.
   Contact: Kelly Backscheider, DuPont Crop Protection

**Soybean Aphid Suction Trap Network**
Purpose: Monitor flight of soybean aphids.
   Contact: Christian Krupke; Entomology
**Insect Pest Monitoring Network**  
Purpose: Monitor insect pest levels of corn, soybeans and wheat.  
Contact: John Obermeyer; Entomology

**Cooperative Ag Pest Survey**  
Purpose: DPAC is used as a monitoring site for a statewide trap grid for the early detection of exotic, invasive insect pests of soybean and vegetables.  
Contact: Larry Bledsoe; Entomology

**Heliothine Research Survey**  
Purpose: Use DNA samples from Heliothine moths (Corn earworm) collected weekly throughout the United States to determine the phenology and distribution of a group of viruses known to infect those moths and determine how to use those viruses in IPM strategies.  
Contact: Paul Baker, Bruce Webb UKY and John Obermeyer; Entomology

**Indiana and Ohio Sampling for Phytophthora**  
Purpose: Determine the level of Phytophthora levels in Indiana and Ohio Soils.  
Contact: Anne Dorrance, Ohio Station University and Shaun Casteel, Agronomy

**Purdue Automated Agricultural Weather Station (PAAWS)**  
Purpose: Automated collection of weather data from this site is sent to the Indiana State Climate Office at Purdue University - data can be observed at: [http://climate.agry.purdue.edu](http://climate.agry.purdue.edu)  
Contacts: Ken Scheeringa; Agronomy

**National Weather Service Weather Station (NWS)**  
Purpose: Record weather data on a daily basis and maintain weather record data base.  
Contact: Brad Herald, National Weather Service

**Corn and Soybean Herbicide Demonstration Plots**  
Purpose: Evaluate different herbicide treatments in corn and soybeans  
Contact: Jeff Boyer; Davis-PAC and Bill Johnson; Botany and Plant Pathology

**USDA - People’s Garden Project**  
Purpose: Grow fresh sweet corn for those in need.  
Contact: Toby Hollinger, County Executive Director, USDA-FSA, Randolph County

**Native Grass, Wildflower and Constructed Wetland Demonstration Project**  
Purpose: Demonstrate the growth and value of native grasses, wildflowers and constructed wetlands.  
Contact: Rob Chapman; Forestry and Natural Resources

**Understanding habitat needs of Northern Long-eared bats**  
Purpose: Monitor activity of Northern Long-eared bats through various collection methods.  
Contact: Cheyenne Gerdes, Dr. Patrick Zollner, Forest and Natural Resources
**Mixed Hardwood Demonstration Tree Planting**  
Purpose: Demonstrate mixed hardwoods trees planted in Indiana and the effects deer have on growth and survival of the planted and voluntary trees.  
   Contact: Don Carlson; Forestry and Natural Resources

**Wildlife Shrub Demonstration Plantings**  
Purpose: Demonstrate several commonly planted wildlife species and the effects deer have on growth and survival.  
   Contact: Don Carlson; Forestry and Natural Resources

**Forest Regeneration Demonstration Area**  
Purpose: Demonstrate how a forest regenerates following the removal of the woody material. Supplemental tree planting of both standard and select nursery stock occurred on the sites along with fencing of half of the site to exclude impacts of deer on regeneration.  
   Contact: Don Carlson; Forestry and Natural Resources

**Long Term Continuous Forest Inventory**  
Purpose: Permanent forest inventory plots have been established and maintained on most of the woodlands at Davis PAC to monitor changes in species abundance, growth, survival, and timber quality over time.  
   Contact: Mike Jenkins and Don Carlson; Forestry and Natural Resources

**80+ years of Central Hardwood Forest Dynamics**  
Contacts: Mike Jenkins and Robert Morrissey, Hardwood Tree Improvement and Regeneration Center, Department of Forestry and Natural Resources