

SOUTHWEST-PURDUE AGRICULTURAL CENTER RESEARCH AND DEMONSTRATION PROJECTS 2021

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Department of Agronomy

CASTNet Dry Deposition Measurements

Purpose: The measurement of gaseous and collection of gaseous and particulate pollutants in combination with meteorological conditions are made at this site in order to 1) characterize geographic patterns and temporal trends in chemical atmospheric dry deposition 2) support assessments of atmospherically – deposited nutrients.

Contact: Rich Grant

National Atmospheric Deposition Program/Mercury Deposition Network

Purpose: The collection of rain water from this site in order to: 1) characterize geographic patterns and temporal trends in wet chemical mercury deposition and 2) Support assessments of atmospherically-deposited mercury on the productivity of biological accumulators such as fish.

Contact: Rich Grant

National Atmospheric Deposition Program/National Trends Network

Purpose: The collection of rain water from this site is made in order to: 1) Characterize geographic patterns and temporal trends in chemicals as well as quantity and conductivity of atmospheric wet deposition and 2) support assessments of atmospherically – deposited nutrients influencing crop productivity.

Contact: Rich Grant

Ammonia Monitoring Network

Purpose: The collection of gaseous ammonia from the site is made in order to 1) characterize geographic patterns and temporal trends in background ammonia levels, 2) support assessments of atmospherically-deposited nitrogen on the ecosystem function.

Contact: Rich Grant

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>

Contact: Beth Hall

National Weather Service Station (NWS)

Purpose: Manual collection of daily weather observations from this site are sent to the NWS via a web-based application known as WxCoder.

Contact: Rich Grant & SWPAC Staff

Department of Agronomy (Continued)

U.S. Geological Survey

Purpose: Monitoring of atmospheric mercury dry deposition in litter fall.

Contact: Douglas Burns & SWPAC Staff

Winter Wheat Breeding Trials

Purpose: To generate data that can be used in variety selection process.

Contact: Mohsen Mohammadi & Tracy Richards

Sulfur X Planting Date

Purpose: Evaluate yield response early vs. late planting.

Contact: Shaun Casteel & Amanda Modglin

Sulfur X Foliar Protection

Purpose: Evaluate yield response of sulfur applications to soybeans.

Contact: Shaun Casteel & Amanda Modglin

Corn Responses to Applied Sulfur Fertilizers

Purpose: Corn responses to applied sulfur fertilizers.

Contact: Bob Nielsen, Jim Camberato & Dan Quinn

Department of Botany & Plant Pathology

Downy Mildew Sentinel Plot

Purpose: To monitor the possible on-set of Downy Mildew in Indiana.

Contact: Dan Egel.

Bacterial Diseases Tomato Trial

Purpose: Field experiment that compares products and their effects on bacterial diseases of processing tomatoes.

Contact: Dan Egel

Fusarium Greenhouse Study

Purpose: Managing fusarium wilt of greenhouse watermelon transplants.

Contact: Dan Egel

Organic Tomato Plot

Purpose: Study organic certified products to manage bacterial spot of tomato.

Contact: Dan Egel

Strawberry Trial to Compare Varieties for Susceptibility to Neopestalotiopsis

Purpose: This trial is in response to a grant from NA strawberry growers to investigate the first report of Neopestalotiopsis in Indiana.

Contact: Dan Egel

Phenotyping Studies and Decision Support Systems for Gray Leaf Spot of Corn

Purpose: To determine the best timing of fungicide applications for gray leaf spot.

Contact: Christian Cruz

Department of Botany & Plant Pathology (continued)

Wheat Fungicide Trial (1)

Purpose: Efficacy of foliar fungicides on diseases in wheat.

Contacts: Darcy Telenko & Su Shim

Wheat Fungicide Trial (2)

Purpose: Efficacy of foliar fungicides on diseases in wheat.

Contacts: Darcy Telenko & Su Shim

Soybean Sentinel Plots

Purpose: Observe crop diseases throughout the growing session.

Contacts: Darcy Telenko & Su Shim

Soybean Fungicide Trial (1)

Purpose: Compare the efficacy of foliar fungicides in soybeans.

Contacts: Darcy Telenko & Su Shim

Soybean Fungicide Trial (2)

Purpose: Compare the efficacy of foliar fungicides in soybeans.

Contacts: Darcy Telenko & Su Shim

Corn Sentinel Plots

Purpose: Observe crop diseases throughout the growing season.

Contacts: Darcy Telenko & Su Shim

Corn Fungicide Trial (1)

Purpose: Compare the efficacy of foliar fungicides in corn.

Contacts: Darcy Telenko, Jeffrey Ravellette & Su Shim

Corn Fungicide Trial (2)

Purpose: Compare the efficacy of foliar fungicides in corn.

Contacts: Darcy Telenko, Jeffrey Ravellette & Su Shim

Organic Hemp Production

Purpose: Asses the effect of hemp (seed and fiber) planted before corn, soybean, and wheat under conventional and no-till conditions with fall cover crops.

Contacts: Kevin Gibson & Andres Fonnegra

Department of Entomology

Miticide Efficacy Trial in Watermelon

Purpose: To provide information on the efficacy of miticides so that the least amount of applications can be made to get this pest under control.

Contact: Laura Ingwell

Department of Entomology (continued)

Outdoor Variety Trail for SARE Cucumber and TSSM Project

Purpose: Evaluation ten varieties, monitoring striped cucumber beetles and spider mites on a weekly basis until plants die.

Contact: Laura Ingwell & Wenjing Guan

Demonstration Plot

Purpose: Utilizing row covers as a tool for pest management targeting flea beetles.

Contact: Laura Ingwell

Indiana Cooperative Agricultural Pest Survey (CAPS) for Exotic Insect Pests of Soybean & Corn

Purpose: Establish traps sites and sample areas needed to monitor for exotic insect species.

Contact: Larry Bledsoe

Armyworm Pheromone Trapping

Purpose: To monitor the presence of armyworm moths.

Contact: John Obermeyer

Black Cutworm Pheromone Trapping

Purpose: To monitor the presence of armyworm moths.

Contact: John Obermeyer

Western Bean Cutworm Pheromone Trapping

Purpose: To monitor the presence of armyworm moths.

Contact: John Obermeyer

Corn Earworm Trapping Network

Purpose: To monitor the presence of corn earworm moths.

Contact: Laura Ingwell

Squash Vine Bore Trapping Network

Purpose: To monitor the presence of corn earworm moths.

Contact: Laura Ingwell

Purdue Extension

Southwest Indiana Crop Diagnostic Training Center Plots

Purpose: To demonstrate and teach timely agronomic information to crop consultants and growers.

Contact: Valerie Clingerman, Amanda Mosiman & Kenny Eck

Day on the Farm for 3rd Graders

Purpose: To allow Knox County 3rd graders an opportunity to plant a watermelon and visit a farm.

Contact: Valerie Clingerman, Mitch Wagoner & Tonya Short

Purdue Extension (continued)

Pumpkin Days for 1st Graders

Purpose: To allow Knox County 1st graders an opportunity to see a pumpkin field and pick their own pumpkins – virtual, Extension Educators will deliver pumpkins to schools

Contact: Valerie Clingerman, Mitch Wagoner & Tonya Short

Winter Canola Proprietary Germplasm Screen

Purpose: Evaluate winter canola entries for winter hardiness, stand ability, disease tolerance, and yield potential.

Contacts: Kenny Eck & Brian Caldbeck

National Winter Canola Variety Trial

Purpose: Evaluate canola varieties to identify best adapted varieties for southwest Indiana.

Contacts: Kenny Eck & Mike Stamm

Industrial Rapeseed Germplasm Screen

Purpose: Evaluate commercially available industrial rapeseed entries for winter hardiness, standability, disease tolerance, and yield potential.

Contacts: Kenny Eck & Brian Caldbeck

Organic Canola Production Trial

Purpose: Evaluate the effectiveness of an organic insecticide and an organic fungicide on organic canola production.

Contacts: Kenny Eck & Brian Caldbeck

Wheat Variety Trial

Purpose: Southwestern Indiana Independent Wheat Variety Trials exist to provide growers in this area unique information to their geographic area.

Contacts: Hans Schmidt, Nick Held & Nick Held

Purdue Extension/University of Wisconsin Small Grain Trials

Purpose: Sending data to Conley for aggregation of some kind of research.

Contacts: Hans Schmitz, Amanda Mosiman & Nick Held

Department of Horticulture & Landscape Architecture

Seedless Watermelon Variety Trial

Purpose: Evaluate yield and fruit quality of seedless watermelon varieties.

Contact: Wenjing Guan

Personal Size Watermelon Variety Trial

Purpose: Evaluate yield and fruit quality of personal size watermelon varieties.

Contact: Wenjing Guan

Seedless Watermelon Fertility Trial

Purpose: Trial is designed to respond to growers' needs to reevaluate fertility recommendation for growing seedless watermelon.

Contact: Wenjing Guan

Department of Horticulture & Landscape Architecture (continued)

Cantaloupe and Specialty Melon Variety Trial

Purpose: Evaluate specialty melon performance in southern Indiana to compare to typical cantaloupe varieties.

Contact: Wenjing Guan, Petrus Langenhoven

Evaluate Strawberries Grown in a High Tunnel

Purpose: The project will evaluate strawberries grown in a high tunnel and achieve an extended season harvest.

Contact: Wenjing Guan

Vertical Strawberry Production in Greenhouse

Purpose: To establish a system of growing strawberry vertically in greenhouse to achieve an extended season harvest. Contact: Wenjing Guan

Evaluate Cucumber Cultivars for Susceptibility to Two-spotted Spider Mites

Purpose: Evaluate susceptibility to two-spotted spider mites in different types of cucumbers grown in high tunnel environment. Cucumbers will be grown in pots with a hydroponic system.

Contact: Wenjing Guan, Laura Ingwell

Evaluate bio-mitocides for Two-Spotted Spider Mites Control on Cucumbers.

Purpose: Three spray treatments, one control. Will grow cucumbers in pots on netting system.

Contact: Wenjing Guan, Laura Ingwell

Evaluate Annual Plasticulture Strawberry Production in Southern Indiana

Purpose: To establish a system to successfully grow strawberry in an annual plasticulture system in southern Indiana. A cool season crop (winter squash or broccoli crop) will be grown on the same bed in July, and expected to be harvested in Oct. 2022.

Contact: Wenjing Guan

Double Cropping Field Strawberries – Winter Squash

Purpose: This project will evaluate potential of growing winter squash following field strawberries.

Contact: Wenjing Guan

Extend Strawberry Harvest Season in Southern Indiana – Fall Planting

Purpose: This project will evaluate strawberry cultivars planted in the fall with the use of low tunnel system.

Contact: Wenjing Guan

Wine Grape Research

Purpose: Evaluation of wine grape varieties in southwest Indiana.

Contact: Miranda Purcell

Table Grape Research

Purpose: Evaluation of table grape varieties in southwest Indiana.

Contact: Miranda Purcell

Department of Horticulture & Landscape Architecture (continued)

Chestnut Study

Purpose: Evaluate Chestnut tree growth and nut production.

Contact: Miranda Purcell

Reflex Screen for Pumpkin

Purpose: Obtain tolerance data to support registration. Applied after bed formation, before plastic. Applied after seeding, but before emergence.

Contact: Stephen Meyers

Reflex Screen for Winter Squash

Purpose: Obtain tolerance data to support registration. Applied after bed formation, before plastic. Applied after seeding, but before emergence.

Contact: Stephen Meyers

Reflex Screen for Watermelon

Purpose: Obtain tolerance data to support registration. Applied after bed formation, before plastic. Applied after seeding, but before emergence.

Contact: Stephen Meyers

Morning glory Interference in Watermelon

Purpose: The purpose of this study is to determine the influence of six season-long morning glory densities on plasticulture watermelon yield and quality.

Contact: Stephen Meyers

Organic Sweet Potato Cultivation Trial

Purpose: The purpose of this study is to investigate the role of cultivar shoot architecture and between-row cultivation frequency on weed control.

Contact: Stephen Meyers

Dual Magnum Post Over the Top Herbicide Screen of Pumpkin (Bare Ground)

Purpose: The purpose of this study is to determine the influence of Dual Magnum herbicide applied as a delayed PRE over the top of pumpkin.

Contact: Stephen Meyers

Morning glory Interference in Processing Tomato (Bare ground)

Purpose: The purpose of this study is to determine the influence of six season-long morning glory densities on processing tomato yield and quality.

Contact: Stephen Meyers

USDA ARRI Grant – Taking the Next Step as a Small and Medium-sized Farm: Understanding the Integration of Production, Food Safety, and Profitability.

Purpose: The goal is to improve the profitability of small and medium-sized vegetable farms.

Contact: Petrus Langenhoven

Collaborations

Knox County CISMA Native Plant Propagation

Purpose: The Knox County CISMA hopes to continue to propagate a variety of native plant species in one of the SWPAC's greenhouses starting in March 2021 through September 2021.

Contact: Will Drews, Knox County Soil and Water

Native Plant Restoration for the Pollinators at SWPAC

Purpose: Restore native plants for bee pollinators.

Contact: Will Drews, Knox County Soil and Water

Invasive Species Control

Purpose: Remove and control of invasive species in woodlands.

Contact: Will Drews, Knox County Soil and Water