

**SOUTHWEST-PURDUE AGRICULTURAL CENTER
RESEARCH AND DEMONSTRATION PROJECTS
2024**

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Department of Agronomy

Clean Air Status Trends Network/ Dry Deposition Measurements (CASTNET)

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 (MDN)

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/Mercury Litterfall Network (MLN)

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

Contact: Rich Grant & SWPAC Staff

National Atmospheric Deposition Program/National Trends Network (NTN)

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

National Atmospheric Deposition Program/Ammonia Monitoring Network (AMON)

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

Department of Agronomy (Continued)

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 Botany & Plant Pathology

Wheat Fungicide Trial WHT 24-03

Purpose: Evaluation of fungicide efficacy on wheat scab.

Contacts: Darcy Telenko & Steven Brand

Industry Wheat Fungicide Trial WHT 24-03

Purpose: Evaluation of fungicide efficacy on wheat scab.

Contacts: Darcy Telenko & Steven Brand

Soybean Fungicide Trial SOY24-02

Purpose: Uniform fungicide evaluation in soybeans.

Contacts: Darcy Telenko & Steven Brand

Industry Soybean Fungicide Trial SOY24-02

Purpose: Uniform fungicide evaluation in soybeans.

Contacts: Darcy Telenko & Steven Brand

Corn Fungicide Evaluation COR24-11

Purpose: Uniform fungicide evaluation in corn.

Contacts: Darcy Telenko & Steven Brand

Industry Corn Fungicide Evaluation COR24-11

Purpose: Uniform fungicide evaluation in corn.

Contacts: Darcy Telenko & Steven Brand

Cowpea Protein Improvement Project

Purpose: Evaluating cowpea lines for seed protein concentration, growth habits and tannins content.

Contacts: Jeneen Fields & Jean Paul Iyakaremye

Department of Entomology

Sustainable Watermelon Production

Purpose: Most watermelon producers follow a conventional production approach, this project will test an alternative watermelon production approach with hairy vetch as a cover crop, a threshold-based insecticide program and the reliance on wild pollinators.

Contact: Ian Kaplan & Zeus Mateos

Spider mite Outbreak on Watermelon

Purpose: This study will evaluate the use of aggressive insect management triggering spider mite outbreaks and the use of rye to protect watermelon seedlings from sand blasting damage.

Contact: Ian Kaplan & Zeus Mateos

Resilient Ag Demonstration Plot – Year One Pumpkins

Purpose: The purpose is to establish long-term commercial scale plots to compare current (conventional) practices to those that are referred to as resilient.

Contact: Laura Ingwell & Christian Krupke

Corn Earworm Trapping Network

Purpose: To monitor the presence of corn earworm moths.

Contact: Laura Ingwell & John Obermeyer

Squash Vine Bore Trapping Network

Purpose: To monitor the presence of squash vine bore moths.

Contact: Laura Ingwell

Armyworm Pheromone Trapping

Purpose: To monitor the presence of armyworm moths.

Contact: Laura Ingwell & John Obermeyer

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

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

Contact: Alicia Kelly

Purdue Extension

Day on the Farm for 3rd Graders

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

Contact: Valerie Clingerman & Mitch Wagoner

Pumpkin Days for 1st Graders

Purpose: Educational event to allow Knox County 1st graders the opportunity to visit a pumpkin field and pick their own pumpkins.

Contact: Valerie Clingerman & Mitch Wagoner

Purdue Extension (continued)

Winter Canola Proprietary Germplasm Screen

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

Contacts: Kenneth Eck & Brian Caldbeck

National Winter Canola Variety Trial

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

Contacts: Kenneth Eck & Mike Stamm

Industrial Rapeseed Germplasm Screen

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

Contacts: Kenneth 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: Valerie Clingerman & Amanda Mosiman

Department of Food Science

Indiana Melon Production Agricultural Region Environmental Surveillance for Foodborne Bacterial Pathogens

Purpose: Seeks to collect air, soil, and water samples in order to develop baseline information that will inform future development of interventions and risk reduction techniques for use by produce growers.

Contacts: Scott Monroe, Amanda Deering & Tari Gary

Department of Horticulture & Landscape Architecture

Seedless Watermelon Variety Trial (2024)

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

Contact: Wenjing Guan

Seeded Watermelon Variety Trial (2024)

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

Contact: Wenjing Guan

Personal Size Watermelon Variety Trial (2024)

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

Contact: Wenjing Guan

Department of Horticulture & Landscape Architecture (continued)

Specialty Watermelon Variety Trial

Purpose: Evaluate different flesh-colored watermelons.

Contact: Wenjing Guan

Watermelon Fertilization Irrigation Experiment

Purpose: Evaluate Stroller fertilizer programs for watermelon production

Contact: Wenjing Guan

Melon Post-harvest Shelf-Life Evaluation

Purpose: Evaluate shelf life of newly developed melon cultivars.

Contact: Wenjing Guan, Amanda Deering & Scott Monroe

Explorer No-till Watermelon

Purpose: Explore potential of growing watermelons using a no-till system

Contact: Wenjing Guan & Laura Ingwell

Cantaloupe Variety Trial (2024)

Purpose: Evaluate yield and fruit quality of cantaloupe varieties.

Contact: Wenjing Guan

Evaluate Transgenic Camelina

Purpose: Evaluate field performance of transgenic camelina

Contact: Wenjing Guan & Kianthi Varala

Exploring Mature Watermelon Vine Decline in Indiana Purpose: Greenhouse experiment to understand relationship of Fusarium wilt and waterlogging stress

Contact: Wenjing Guan & Dan Egel

Effects of Irrigation Management on Watermelons, Tomatoes, Cucumbers and Peppers

Purpose: Demonstrate different irrigation management strategies on yield of common vegetable crops.

Contact: Wenjing Guan

Effects of Using Different Mulch Materials on Vegetable Production Purpose: Compare

plastic mulch, bare soil, wood chips and straw mulch in growing common vegetable crops.

Exploring their effects in crop yield and maintain soil moisture

Contact: Wenjing Guan

Evaluate Open Field Strawberry Cultivar (2022-2024)

Purpose: The project is to evaluate different strawberry cultivars grown on white vs. black plastic in open field plasticulture system

Contact: Wenjing Guan and Steve Meyers

Buckwheat Production in Caterpillar Tunnel

Purpose: Evaluation of buckwheat

Contact: Wenjing Guan

Department of Horticulture & Landscape Architecture (continued)

Dill Production in Tunnels

Purpose: Evaluation of dill
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

Chestnut Study

Purpose: Evaluate Chestnut tree growth and nut production.
Contact: Miranda Purcell

Sweet Potato Variety Trial

Purpose: A plant, maintain, harvest trial to evaluate yield and quality.
Contact: Stephen Meyers and Wenjing Guan

Mult-Year Plasticulture Strawberry Cover Crop Trial (2022-2024)

Purpose: The objective is to determine if cover crops can be used to suppress weeds in row middles for multi-year plasticulture strawberry production.
Contact: Stephen Meyers & Wenjing Guan

Mult-year Plasticulture Strawberry Herbicide Program (2023-2024)

Purpose: Evaluating several herbicides to control weeds in a two-year production system.
Contact: Stephen Meyers & Wenjing Guan

USDA AFRI 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 & Nathan Shoaf

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: Ben Burke, Knox County Soil and Water & Larry Sutterer

Native Plant Restoration for the Pollinators at SWPAC

Purpose: Restore native plants for bee pollinators.
Contact: Ben Burke, Knox County Soil and Water

Collaborations (continued)

Invasive Species Control

Purpose: Remove and control of invasive species in woodlands.

Contact: Ben Burke, Knox County Soil and Water

Monitoring and Visual Surveys for Silver Y Moth & Spotted Lanternfly

Purpose: Maintaining pheromone trap for Silver Y Moth and doing visual surveys for the Spotted Lanternfly.

Contact: Bonnie Spindler, Indiana Department of Natural Resources

Collections & Sequencing of Weed Populations

Purpose: Data collection and sequencing of weed populations over the course of a growing season and across years to better understand the rate of weed adaptation to herbicides and other selective pressures.

Contact: Julia Kreiner, University of Chicago