SOUTHWEST-PURDUE AGRICULTURAL CENTER
RESEARCH AND DEMONSTRATION PROJECTS
2022

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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 treads 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

Winter Wheat Breeding Trials
Purpose: To generate data that can be used in variety selection process.
Contact: Mohsen Mohammedi & Tracy Richards

Corn Responses to Current Sulfur Fertilizer & Potential Residual Soil Sulfur
Purpose: To determine whether corn responds to potential residual sulfur from the previous year's fertilizer application to soybeans.
Contact: Bob Nielsen and Jim Camberato

Department of Botany & Plant Pathology

Downy Mildew Sentinel Plot
Purpose: To monitor the possible on-set of Downy Mildew in Indiana.
Contact: Dan Egel.

Screen Tomato Breeding Lines for Resistance to Early blight USDA Grant
Purpose: This is for a national tomato grant to help organic tomato growers. In this part of the project, I have been sent breeding lines that I am screening for early blight. I will inoculate the plants and evaluate them for disease. If I find lines that are very susceptible for early blight, the lines may not be continued. The idea is to release varieties to organic growers that yield well, are good quality (especially taste) and are at least partially resistant to disease.
Contact: Dan Egel

Determining Host Resistance to Early blight UC Davis
Purpose: This project is in cooperation with UC Davis to help tomato growers. In this part of the project, I have been sent breeding lines that I am screening for early blight. I will inoculate the plants and evaluate them for disease. If I find lines that are very susceptible for early blight, the lines may not be continued. The idea is to release varieties to growers that yield well, are good quality (especially taste) and are at least partially resistant to disease.
Contact: Dan Egel

Comparison of Fungicides for the Management of Early blight of Tomato
Purpose: this is a project supported by Industry. Several fungicides will be evaluated for management with an isolate of the early blight fungus from Indiana. Early blight is a problem every year and fungicides resistance has been an issue. Target spot had not been reported in Indiana until recently. If this disease becomes a problem in Indiana, it will be important to understand more about the fungicides that help to control it
Contact: Dan Egel

Department of Botany & Plant Pathology (continued)

Evaluation of Fungicides for the Management of Target Spot of Tomato
Purpose: this is a project supported by industry. Several fungicides will be evaluated for management with an isolate of the target spot fungus that comes from Indiana. Target spot had not been reported in Indiana until recently. If this disease becomes a problem in Indiana, it will be important to understand more about the fungicides that help to control it.
Contact: Dan Egel

Wheat Fungicide Trial (1)
Purpose: Efficacy of foliar fungicides on FHB in wheat.
Contacts: Darcy Telenko, Steven Brand & Su Shim

Wheat Fungicide Trial (2)
Purpose: Efficacy of foliar fungicides and variety on scab of wheat.
Contacts: Darcy Telenko, Steven Brand & 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, Steven Brand & Su Shim

Soybean Fungicide Trial (2)
Purpose: Compare the efficacy of foliar fungicides in soybeans.
Contacts: Darcy Telenko, Steven Brand & 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, Steven Brand & Su Shim

Corn Fungicide Trial (2)
Purpose: Compare the efficacy of foliar fungicides in corn.
Contacts: Darcy Telenko, Steven Brand & 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 & Josh Kraft

Department of Entomology

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: Alicia Kelly

Armyworm 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 squash vine bore moths.

Contact: Laura Ingwell

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 & Tonya Short

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 & Tonya Short

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

Purdue Extension (continued)

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 & Sarah Brackney

Department of Horticulture & Landscape Architecture

Seedless Watermelon Variety Trial (2022)
Purpose: Evaluate yield and fruit quality of seedless watermelon varieties.
Contact: Wenjing Guan

Personal Size Watermelon Variety Trial (2022)
Purpose: Evaluate yield and fruit quality of personal size watermelon varieties.
Contact: Wenjing Guan

Seedless Watermelon Irrigation/Fertility Trial (2022)
Purpose: Trial is designed to respond to growers' needs to reevaluate fertility recommendation for growing seedless watermelon.
Contact: Wenjing Guan

Pollinizer Observation (2022)
Purpose: This is an observational trial. The purpose is to observe flowering pattern and plant vigor of commercial pollinizer varieties for seedless watermelon production
Contact: Wenjing Guan

Irrigation Schedule Demonstration (2022)
Purpose: Purpose of the demonstration is to compare sensor-based and Et-based irrigation scheduling method and understand crops respond to deficient water stress.
Contact: Wenjing Guan and Liz Maynard

Drip Tape Demonstration (2022)
Purpose: Understand wetting patterns of different drip irrigation set up.
Contact: Wenjing Guan and Liz Maynard

Evaluate Open Field Strawberry Cultivar (2022-2024)
Purpose: The project will evaluate strawberries grown in the open field with white vs. black plastic.
Contact: Wenjing Guan and Steve Meyers

Evaluate Strawberries Grown in a High Tunnel (2022-2023)
Purpose: The project will evaluate pest dynamics of strawberries grown in a high tunnel with different winter management approaches.
Contact: Wenjing Guan and Laura Ingwell

Department of Horticulture & Landscape Architecture (continued)

Hydroponic Strawberry Production in Tale-Top System in a high tunnel (2021- 22)
Purpose: develop a system to grow strawberries in table-top system in a high tunnel
Contact: Wenjing Guan

Evaluate Strawberries Grown in a caterpillar tunnel (2022-2023)
Purpose: evaluate production and economic feasibility of growing strawberries in a caterpillar tunnel.
Contact: Wenjing Guan

Evaluate Cucumber Cultivars for Susceptibility to Two-spotted Spider Mites
Purpose: Evaluate cucumber cultivars for susceptibility toward two-spotted spider mites in high tunnel production
Contact: Wenjing Guan & Laura Ingwell

Evaluate bio-meticides for Two-Spotted Spider Mites Control on Cucumbers.
Purpose: Evaluate bio-pesticides for two-spotted spider mites in high tunnel production
Contact: Wenjing Guan & Laura Ingwell

Evaluate Annual Plasticulture Strawberry Production in Southern Indiana (2021-2022)
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

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

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

Herbicide Systems for Weed Control in Watermelon
Purpose: The goal is to determine how to include soon-to-be registered and rarely used herbicides within a broader herbicide-based weed management system for triploid watermelon.
Contact: Stephen Meyers and Jeanine Arana

Department of Horticulture & Landscape Architecture (continued)

Sweet potato Allelopathy Study
Purpose: Determine if cultivars identified in greenhouse research maintain their weed suppressive abilities in-field.
Contact: Stephen Meyers and Emmanuel Cooper

Organic Sweet Potato Plant Spacing Trial
Purpose: Two cultivars will be planted at one of three spacings, in two different competitive environments.
Contact: Stephen Meyers and Emmanuel Cooper

Organic Sweet Potato Weed Removal Timing Study
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 and Emmanuel Cooper

Mulit-Year Plasticulture Strawberry Cover Crop Trial
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 and Jeanine Arana

Mulit-Year Plasticulture Strawberry Herbicide Programs
Purpose: The objective is to determine viable herbicide-based weed control programs for plasticulture strawberries grown for two harvest seasons. It will include a combination of pre-transplanting, fall, spring, and post-harvest applications timings of different herbicides.
Contact: Stephen Meyers and Jeanine Arana

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 and 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: 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