SWPAC 2013 Research Projects

**Botany & Plant Pathology**

Dan Egel, Botany & Plant Pathology

**Downy Mildew Sentinel Plot**
Monitor the possible on-set of Downy Mildew in Indiana.

**Heirloom Tomato Fungicide Trial**
Determine the efficacy of fungicides for early blight on staked heirloom tomatoes.

**Management of Bacterial Wilt with Actigard**
Fine tuning Actigard rate optimize yield.

**Management of Gummy Stem Blight and Powdery Mildew on Cantaloupe**
Several fungicide products being tested against standards for management of gummy stem blight and powdery mildew of cantaloupe.

**Management of Downy Mildew of Pumpkins with Fungicides**
Testing of several products to manage downy mildew of pumpkins.

**Management of Bacterial Spot of Pumpkin**
Experimental crop protection study is partially funded by industry – other experimental and standard products have been added.

**Management of Fusarium Wilt with Grafted Plants**
Inoculate grafted plants in microplots with fusarium.

Dan Egel and Shubin K. Saha

**OMRI Certified Products for Fusarium Wilt in Watermelon**
To determine if these products are effective against Fusarium wilt of watermelon.

**SAR Product Efficacy for Muskmelons**
To determine what products might exist to help manage bacterial wilt of muskmelon.

Kiersten Wise, Botany and Plant Pathology

**Screening for Fungicide Efficacy for Diplodia Ear Rot in Field Corn**
Test available modes of action and products for efficacy against Diplodia Ear Rot.

**Foliar Fungicide “Best Management Practice” Soybean Trial**
Determine the efficiency of foliar fungicide/insecticide applications on disease control and yield.

**Efficacy of early Fungicides on Stagonospora Leaf Blight of Wheat**
Determine the efficacy of foliar fungicide applications on disease control and yield.
Efficacy of Early Fungicide on Head Scab of Wheat
Determine efficacy of foliar fungicide applications on disease control and yield.

Aspergillus Experiment
Examine interaction of fungicides and bio-control strains.

Entomology

Rick Foster, Entomology

w/Kira Albright, Entomology
Timing of Infection of Muskmelons with Bacterial Wilt
Plots will be either protected with row covers or exposed to striped cucumber beetle feeding early in the season to help determine the most important time for infection with bacterial wilt.

Larry Bledsoe, Entomology

Indiana Cooperative Agricultural Pest Survey (CASPS) for Invasive Pests
Establish traps sites and sample areas needed to monitor for invasive insect species.

Extension

Maria Restrepo, Extension; Shubin K. Saha, Horticulture & Landscape Architecture;
Scott Monroe, Extension; Valerie Clingerman, Extension; Dan Egel, Botany & Plant Pathology;

Organic Heirloom Tomato Variety Trail
Determine performance of heirloom tomato varieties in response to organic production.

Valerie Clingerman, Extension; Bob Nielsen, Agronomy; Chuck Mansfield, Agronomy

Southwest Indiana Crop Diagnostic Training Clinic
Provide timely information to agribusiness professionals that they can use to improve the profitability of their customers.

Hans Schmitz, Extension

Row Width and Dew Duration in Developing Soybean Canopies
Use wetness sensors to collect data on soybean leaves.
Horticulture & Landscape Architecture

Bruce Bordelon, Horticulture & Landscape Architecture

Grape Cultivars and Production Practices
Evaluate wine and table grape cultivars for climate and soils of Indiana.

NE-1020 Vinifera Grape Cultivars
Multi-state evaluation of wine grape and production practices in an effort to improve the competitiveness of the industry in Indiana.

Chestnut Tree Study
Evaluate Chestnut tree growth and nut production.

Shubin K. Saha, Horticulture & Landscape Architecture

Plant Bio-Active Compounds in Triploid Watermelon
Evaluate commercially available watermelon varieties for presence and amount of plant bio-active compounds with benefits to human cardiovascular health.

Evaluation of Determinate and Indeterminate Tomato Varieties for Production in High Tunnels.
Evaluate tomato varieties for production in high tunnels in southwest Indiana.

Muskmelon Variety Trial
Evaluate muskmelon varieties for production in southwest Indiana.

Triploid Watermelon Variety Trial
Evaluate triploid watermelon varieties for production in Southwest Indiana.

Male Flower Production and Health of Diploid Cultivars used for Seedless Watermelon Production as affected by variety and susceptibility to Anthracnose
Determination of timing and quantity of staminate flower production on pollenizer varieties used in triploid watermelon production.

Industry Muskmelon Trial
Evaluation of genetic material for commercial muskmelon production.

Efficacy of C-Cat+-applied to Triploid Watermelon
Evaluation of foliar fertilizer use on yield and fruit quality of triploid watermelon.

Syngenta Grafting in Triploid Watermelon
Evaluation of appropriate planting density of grafted watermelon on yield.
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**CP Bio Fertility Study**
Evaluation of foliar fertilizer use on yield and fruit quality of triploid watermelon.

**SumaGrow Processing Tomato Project**
Evaluation of SumaGrow for reducing fertilizer application in processing tomatoes.

**High Tunnel Colored Bell Pepper Variety Trial**
Evaluation of indeterminate orange bell peppers for yield and quality produced in high tunnels.

**Organic Heirloom Tomato Variety Trial**
Evaluation of heirloom tomato varieties for yield and quality.

**Agronomy**

Shawn Casteel, Agronomy

**Effect of Maturity Group and Seeding Rate on Double-Crop Soybean Yield**
Evaluate the effect of four different soybean maturity groups and 6 seeding rates on double-crop soybean yield.

**Early Soybean System in Southern Indiana**
Determine yield impacts of planting early versus full maturity soybeans at various planting dates.

**Double-Crop Soybean – Seed Treatments**
Evaluate double-crop relative to first-crop soybeans relative to seed insecticide treatments considering timing of insect pressure.

**Double Crop Soybean – Previous Crop x Maturity Group**
Canola has been produced by producers in southwestern Indiana. Such producers have observed increased yields in soybeans that are double-cropped relative to soybeans planted after wheat. This study will seek be better understand this observation.

**Soybean Inoculants after a Drought**
Answer questions about the effects of the 2012 drought on bradyrhizobia populations.

Phil Devillez and Bill Foster, Agronomy

**Purdue Crop Performance**
Commercial hybrid corn performance testing with Roundup Ready trait.
Purdue Crop Performance Trial
Commercial performance testing of non-transgenic corn hybrids.

Purdue Crop Performance Trial
Performance testing of Roundup-Ready Soybean varieties.

Rich Grant, Agronomy

CASNET: The collection of weather data from this site in order to 1) characterize geographic patterns and temporal trends in chemical atmospheric dry deposition, 2) support assessments of atmospherically-deposited nutrients (nitrogen and sulfur) influencing crop productivity and 3) evaluating source/receptor relationships of air pollutants.

National Atmospheric Deposition Program: The collection of rain water from this site in order to 1) characterize geographic patterns and temporal trends in wet chemical (primarily nitrogen and sulfur) atmospheric deposition and 2) Support assessments of atmospherically-deposited nutrients (nitrogen and sulfur) influencing crop productivity.

Purdue Automatic Weather Station (PAAWS)
Automated collection of weather data from this site sent to a computer at the Indiana State Climate Office which can be observed at http://climate.agry.purdue.edu.

National Weather Service
Manual collection of daily weather observations from this site – such data is sent to the NWS via a web based application known as WxCoder.

Charles Mansfield, Agronomy

w/Shaun Casteel, Agronomy

Effect of Previous Crop on Double-Crop Soybean Yield
Evaluate the effect of canola vs. wheat on double crop soybean yield.

The National Winter Canola Variety Trial
Evaluate winter canola varieties for their suitability for the tri-state region.

w/Brian Caldbeck

Effect of Row Width and Plant Population on Canola Production
Evaluate the effect of five different row widths and six planting populations on growth and development, disease and insect problems, reproductive growth, and grain yield of Canola.

National Winter Canola Variety Test
Evaluate Canola varieties to identify best adapted varieties for this region.
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**Canola Herbicide Screen**
Evaluate the effect of nine different herbicides on growth and development, reproductive growth, and grain yield of Canola.

**Clearfield Canola Screen**
Evaluate the effect of two rates of Clearfield herbicide on Clearfield Canola varieties.

**Corn Herbicides/Fungicide – Bayer Crop Science**
Test Herbicide/Fungicide interactions for crop injury.

**Soybean Herbicide Crop Safety Trial**
Test Sencor/Balance Pro tolerance in soybean variety.

Bob Nielsen and Jim Camberato, Agronomy

**Nitrogen Response of Corn after Melons**
Determine the optimum nitrogen rate for corn following melons.

Herb Ohm, Agronomy

**Wheat Improvement**
Develop new wheat cultivars.

**Biology**

Punya Nachappa, Biology

**Surveying Indiana Soybean for Soybean Vein Necrosis Associated Virus and Evaluating New Management Practices**
Learn more about SVNaV epidemiology in Indiana to quantify the level of the threat and also evaluate new management practices for Indiana soybean growers.

**Forestry & Natural Resources**

Rick Meilan, Associate Professor, Forestry & Natural Resources

**Assessing Poplar Species Suitability and Productivity in Indiana**
Testing of Poplar trees for biofuel production from its cellulosic feedstock material.