Soil Drainage and Water Quality
Long-term project to determine:
1) The effect of tile drain spacing on corn and soybean yields on a Clermont soil
2) The movement of nitrates into drainage water under typical management practices
   Eileen Kladivko, Agronomy

Cover Crops to Improve Resilience of Corn Cropping Systems CCSI
Evaluate the impacts of cover crops and other conservation practices on soil carbon, soil aggregation, water holding capacity, nitrate leaching, and crop growth and yield in the face of changing climate.
   Eileen Kladivko and Laura Bowling, Agronomy

Cover Crops for Soil Health and Resiliency CIG
In collaboration with 17 sites and multiple organizations to evaluate effects of various cover crop treatments on soil properties and grain yield, education and evaluation of various tests for soil health
   Eileen Kladivko, Nicole Benally and Kevin Mitchell, Agronomy

Corn Response to In-furrow & Sidedress Applications of Sulfur Fertilization
Evaluate corn response to sulfur fertilization.
   Bob Nielsen and Jim Camberato, Agronomy

Soybean Variety Performance Trial
State variety performance trials.
   Phil DeVillez and Bill Foster, Agronomy

Corn Hybrid Performance Trial
State variety performance trials.
   Phil Devillez and Bill Foster, Agronomy

Waxy Corn Variety Trial
State variety trials
   Phil Devillez and Bill Foster, Agronomy

Bayer LL Soybean Trial
Bayer protocol soybean trial
   Phil Devillez and Bill Foster, Agronomy

Asgrow Soybean Systems Trial
Asgrow protocol soybean trial
   Phil Devillez and Bill Foster, Agronomy
Indigenous Soil Potassium Supply, Fertilizer Potassium Use Efficiency, and Potassium Budgets in Indiana Corn and Soybean Production
Evaluate the agronomic efficiency of currently recommended potassium fertilizer rates
Evaluate theoretically improved soil potassium tests for ability to predict soil potassium supply.
   Sylvie Brouder and Ronald Navarre, Agronomy

Responses of Corn to Biological Inoculants Applied In-furrow or on the Seed
Evaluate effectiveness of commercially biological products.
   Bob Nielsen, Jim Camberato and Jason Lee, Agronomy

Comparison of In-Furrow and 2X2 Starter Fertilizers on the Growth, Development, and Yield of Continuous Corn
Corn starter fertilizer test.
   Bob Nielsen, Jim Camberato, Agronomy

Soybean Response to Sulfur Fertilization and other Foliar Applications
Evaluate soybean response to granular and foliar applications of AMS fertilization at various growth stages. Evaluate fungicide and insecticide foliar treatments.
   Shaun Casteel, Agronomy

Soybean Seeding Rate Trial Crossed by Plant Type
Evaluate and fine tune soybean planting rate recommendations.
   Shaun Casteel, Agronomy

USDA-ARS Northern Soybean Uniform Test
Evaluate USDA-ARS Northern Uniform Soybean Test strains grouped by maturity for comparison and seed increases.
   Gary Nowling, USDA-ARS

Corn Response to Cereal Rye Cover Crop and Starter Fertilizer Interaction
Evaluate corn response to cover crop and starter fertilizer treatments
   Shalamar Armstrong and Houston Miller, Agronomy

FFA Profit Plots
Educational outreach to local FFA programs to demonstrate corn and soybean production systems, marketing and research protocols
   SEPAC staff

Demonstration and Diagnostic Training Plots
Educational plots to demonstrate various agronomic management such as interseeding covercrops, planting heritage varieties, unconventional corn row spacing
   SEPAC staff – Purdue Extension

18S-SEPAC-Corn-01 Herbicide Trial
PRE-Emergence and Early Post emergence corn herbicide efficacy trials - Indiana.
   Bill Johnson, Dustin Johnson, and Taylor Campbell, Botany & Plant Pathology
**18S-SEPAC-Corn-03 Herbicide Trial**
Corvus vs. competitors in length of residual
Bill Johnson, Dustin Johnson, and Taylor Campbell, Botany & Plant Pathology

**18S-SEPAC-Corn-04 Herbicide Trial**
Corvus vs. competitors
Bill Johnson, Dustin Johnson, and Taylor Campbell, Botany & Plant Pathology

**18S-SEPAC-Soy-02 Herbicide Trial**
Crusher Burndown trial in soybeans
Bill Johnson, Dustin Johnson, and Taylor Campbell, Botany & Plant Pathology

**18-SEPAC-Soy-05 Herbicide Trial**
Xtend soybean system comparison – no-till.
Bill Johnson, Dustin Johnson, and Taylor Campbell, Botany & Plant Pathology

**18-SEPAC-Soy-06 Herbicide Trial**
Lack of weed control in soybean
Bill Johnson, Dustin Johnson, and Taylor Campbell, Botany & Plant Pathology

**18-SEPAC-Soy-07 Herbicide Trial**
FeXapan in conventional-till 2 pass programs for RR2X Soybeans.
Bill Johnson, Dustin Johnson, and Taylor Campbell, Botany & Plant Pathology

**18-SEPAC-Soy-08 Herbicide Trial**
Arylex Efficacy Burndown Timing
Bill Johnson, Dustin Johnson, and Taylor Campbell, Botany & Plant Pathology

**18-SEPAC-Soy-09 Herbicide Trial**
ISA Soybean Systems Demonstration
Bill Johnson, Dustin Johnson, and Taylor Campbell, Botany & Plant Pathology

**Hodgkiss Cover crop trial with cereal rye crimson clover**
Comparing Xtend and Enlist systems with cover crop termination
Bill Johnson, Dustin Johnson, Conner Hodgkiss and Travis Campbell, Botany & Plant Pathology

**DeSimini Cover crop trial with canola and cereal rye**
Evaluate the effect of tank mixtures for termination of RR Canola cover crop
Bill Johnson, Dustin Johnson, Stephanie DeSimini, and Travis Campbell, Botany & Plant Pathology

**Peterson Cover crop trial 1 Weed Control with Cereal Rye/Oats/Radish/Fallow**
Compare cover crop weed control in cereal rye vs. oats/radish vs. fallow with different herbicide treatments in corn
Bill Johnson, Dustin Johnson, Wyatt Peterson, and Travis Campbell, Botany & Plant Pathology

**Peterson Cover crop trial 2 Termination Timing Effect on Corn**
Compare different cover crop termination timings of cereal rye, cereal rye/crimson clover and crimson clover for effects on corn establishment and yield
Bill Johnson, Dustin Johnson, Wyatt Peterson, and Travis Campbell, Botany & Plant Pathology
**Long Term Growth Regulator Study SEPAC**
Effects of Growth Regulator Herbicide Technology Dependency in a Corn and Soybean Rotation.
Bill Johnson, Dustin Johnson, and Taylor Campbell, Botany & Plant Pathology

**Covercrop Termination Study**
Evaluate effectiveness of various burndown herbicides on multiple covercrop species.
Bryan Young, Botany & Plant Pathology

**Covercrop Carryover Study**
Evaluate multiple covercrop species planted into various preemergence soybean herbicides
Bryan Young, Botany & Plant Pathology

**Disease progression of Grey Leaf Spot in Corn**
Dynamics of plant disease and epidemiology of grey leaf spot and northern corn leaf blight
Christian Cruz and Darcy Telenko, Botany & Plant Pathology

**Corn Earworm Pheromone Trapping**
To monitor the presence of corn earworm moths.
John Obermeyer, Entomology

**Black Cutworm Pheromone Trapping**
To monitor the presence of black cutworm moths.
John Obermeyer, Entomology

**Armyworm Pheromone Trapping**
To monitor the presence of armyworm moths.
John Obermeyer, Entomology

**Soybean Aphid Suction Trap**
To monitor the presence of soybean aphid.
Dave Voegtlin, National Soybean Research Center

**Specialty Crop Research Initiative (SCRI) Impact of neonicotinoid insecticides on honey bee pollinators of melons**
The within and surrounding field impacts of neonicotinoid insecticides on honey bees.
Laura Ingwell, Ian Kaplan, Christian Krupke, Jacob Pecenka, Entomology

**Specialty Crop Research Initiative (SCRI) Impact of neonicotinoid insecticides on cucumber beetle natural enemy communities**
Effect within and surrounding field impacts of neonicotinoid insecticides on cucumber beetle natural enemy populations
Steve Yaninek, Amanda Skidmore, Ivan Grijalva and Louisa Panado, Entomology

**Role of symbiotic microbes in the transmission of insect-vectored plant pathogens**
Investigate potential of bacterial communities associated with aphids and influence of Barley yellow dwarf virus
Laramy Enders, Laura Ingwell and Brandon Schemerhorn, Entomology

**Evaluating vacuum stream treatment as an alternative to methyl bromide for killing the oak wilt fungus in logs from wilted red oak trees**
Evaluate vacuum steam treatment as a viable alternative to methyl bromide
Ron Mack USDA, Anna Yang University of Minnesota, Jenny Juzwick US Forest Service, Don Carlson Forestry & Natural Resources
**Effect of Condensed and Hydrolyzable Tannins on the Growth and Development of Asian Longhorned Beetle**
Evaluate the relationship between various tree species purified tannins and survivorship of ALB larvae.
Matthew Ginzel and Scott Gula, Forestry & Natural Resources

**Raptor use of artificial perches in fields with cover crops**
Testing the response of raptors to artificial perches and their potential as a means of controlling vole damage to cash crops, particularly soybeans, planted in cover crop fields
Megan Zagorski, Forestry and Natural Resources

**Edge Feathering**
Implementation of edge feathering management practices around wooded field borders for increased wildlife habitat and evaluation of crop yield response to the practice
Jarred Brooke, Don Carlson Forestry & Natural Resources – SEPAC staff

**Controlled Burn Management for Oak Regeneration**
Evaluate the of effectiveness of utilizing controlled burn as a management strategy to increase oak species competitiveness in a regeneration site
Jarred Brooke, Don Carlson Forestry and Natural Resources

**Warm Season Grass Plantings**
Establishment of warm season grasses and forbs for demonstrating various management techniques and plant identification education
Jarred Brooke, Forestry and Natural Resources

**Wildlife Food Plots**
Demonstration of seeding techniques, establishment, and management of various beneficial plant species for wildlife
Jarred Brooke, Forestry and Natural Resources

**Biomass Harvest Site Demonstration Tree Planting**
Four, two-acre planting sites with four treatments and half of the acreage fenced.
Don Carlson, Forestry & Natural Resources

**Woody Biomass Removal Study**
Harvest a woody biomass to document the economic returns and ecological impacts from varying woody biomass retention levels.
Mike Saunders and John Dunning, Forestry & Natural Resources

**Biomass Harvest Site – Research on Forest Moths (Lepidoptera)**
Investigate the ecological impacts of biomass harvesting for bioenergy on forest ecosystems
Keith Summerville and Connor Parish, Drake University Environmental Science

**Assessment of Repellex Systemic Capsaicin Herbivory Deterrents**
The effectiveness of various products for deer and herbivore browse prevention in new hardwood tree plantings will be tested with an emphasis on the newly approved Repellex systemic repellants.
Doug Jacobs, Don Carlson, and Joshua Sloan, Forestry & Natural Resource
**Screening Butternut for Resistance to Butternut Canker Disease - Started 2011**
To evaluate butternut canker disease.
   Jim McKenna and Brian Beheler, Hardwood Tree Improvement & Regeneration Center

**Ecological Fitness and Comparison of Pure and Hybrid Butternut - Started 2011**
Evaluate butternut from all over the native range as well as hybrids and pure lines from the SEPAC orchard.
   Jim McKenna and Brian Beheler, Hardwood Tree Improvement & Regeneration Center

**Pure Butternut Seed Orchard of New Clones Resistant to Butternut Canker – Started 2011**
Orchard seed production.
   Jim McKenna and Brian Beheler, Hardwood Tree Improvement & Regeneration Center

**Butternut Test - Started 2010**
Evaluate butternut from all over the native range as well as hybrids and pure lines from the SEPAC orchard.
   Jim McKenna and Brian Beheler, Hardwood Tree Improvement & Regeneration Center

**Limited Range Provenance Test of Black Cherry – Started 2006**
First year test in Southern Indiana of a limited range provenance (common garden) test to evaluate black cherry seedlings collected from the Allegheny National forest in Northwestern Pennsylvania in comparison to northern and southern Indiana sources along with seedlings from selections in an IDNR seed orchard with other plots in Central Indiana and Southern Michigan 50 miles north of the Indiana border.
   Phil O'Connor, Indiana Department of Natural Resources; Jim McKenna, Keith Woeste, Hardwood Tree Improvement & Regeneration Center

**Mass Selection of Butternut for Resistance to Butternut Canker from a Range-Wide Collection – Started 2005**
Evaluation of Butternut seedlings collected throughout the native range of butternut from resistant individuals for future breeding and development of Butternut Canker resistant germplasm.
   Jim McKenna, Keith Woeste, Hardwood Tree Improvement and Regeneration Center

**Mass Selection of Butternut for Resistance to Butternut Canker from a Wisconsin Forest – Started 2004**
Evaluation of Butternut seedlings from a wood lot in Wisconsin where a large population of Butternut trees with resistance to the butternut canker fungus are growing.
   Jim McKenna and Keith Woeste, Hardwood Tree Improvement & Regeneration Center

**Butternut Resistance Test – Started 2004**
A test of susceptible, moderately resistant and resistant butternut seedling families for resistance to butternut canker disease.
   Jim McKenna and Keith Woeste, Hardwood Tree Improvement & Regeneration Center
**Butternut Resistance Seed Orchard – Started 2001**
Grafted butternuts from resistant selections from Southern Illinois University (Carbondale) to be used for future breeding of resistant butternut along with own-rooted cuttings from butternut seedlings.

Keith Woeste, Paula Pijut, and Jim McKenna, Hardwood Tree Improvement and Regeneration Center; Mike Ostry USDA-Forest Service -Northern Research Station; John Seifert, Indiana Department of Natural Resources

**Progeny Test of Black Walnut Families for Timber Production via Sprouted Seed - Started 2004**
Evaluation of select black walnut families for vigor and timber quality using sprouted seed as a means of better controlling variables such as initial seedling size and to make grid-planting easier and more economical.

Jim McKenna and Keith Woeste, Hardwood Tree Improvement & Regeneration Center

**Effect of Genotype and Seedling Size on Early Walnut Plantation Performance**
Test walnut seedlings from 9 diverse mother trees grown at 3 different planting densities in the IDNR State Forestry Nursery for out-planting survival and growth.

Jim McKenna and Doug Jacobs, Hardwood Tree Improvement & Regeneration Center

**Limited Range Black Cherry Provenance Test – Started 2007**
Second year test in Southern Indiana of a limited range provenance (common garden) test to evaluate Black Cherry seedlings collected from the Allegheny National forest in north western Pennsylvania in comparison to northern and southern Indiana sources along with seedlings from selections in an IDNR seed orchard. Other plots are in Central Indiana and Southern Michigan 50 miles north of the Indiana border.

Jim McKenna, Keith Woeste, Forestry & Natural Resources; USDA Forest Service, National Forest - Region 9; Phil O'Connor, Indiana Department of Natural Resources

**Red Oak Progeny Test – Started 2008**
The beginning of a northern red oak improvement program using genetic testing of select northern red oak seed trees.

Keith Woeste, Keith Woeste and Jim McKenna, Forestry & Natural Resources; Phil O'Connor, Indiana Department of Natural Resources

**Red Oak Progeny Test – Started 2008**
Ongoing testing of select northern red oak seed trees.
Keith Woeste, and Jim McKenna, Forestry & Natural Resources; Phil O'Connor, Indiana Department of Natural Resources

**Black Walnut Progeny Test – Started 2008**
Ongoing genetic improvement of select black walnut seed trees to develop improved walnut seed sources for Indiana and the Midwest.

Keith Woeste, and Jim McKenna, Forestry & Natural Resources
**Deer Fencing, Select Genetics, & Slow-Release Fertilizer Mixed Hardwood Plantation – Started 2008**

Demonstration of research results that have shown improvement in tree growth and form utilizing deer fencing, select genetic stock, and fertilizing with slow-release fertilizer at the time of planting with each main factor being tested in large blocks to demonstrate their applied application with species including northern red oak, white oak, black walnut & cherry.

Don Carlson, Jim McKenna, Lenny Farlee, Mike Saunders, Doug Jacobs, and Keith Woeste, Forestry & Natural Resources; Phil O'Connor and Bob Hawkins, Indiana Department of Natural Resources

**Red Oak Progeny Test – Started 2009**

Ongoing genetic improvement of select black walnut seed trees to develop improved northern red oak seed sources for Indiana and the Midwest.

Keith Woeste, and Jim McKenna, Forestry & Natural Resources; Phil O'Connor, Indiana Department of Natural Resources

**Black Walnut & Northern Red Oak Container-grown vs. Bare-Root Nursery Grown Stock – Started 2009**

Assess the performance of containerized grown tree seedling to determine uniformity, year-to-year consistency and lower cost of planting of red oak and black walnut.

Lenny Farlee, Keith Woeste, Don Carlson, and Jim McKenna, Forestry & Natural Resources; Anthony Davis, University of Idaho

**Purdue Continuous Forestry Inventory Plots**

Maintain continuous forestry inventory data from established woodlots.

Don Carlson, Forestry & Natural Resources

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