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**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**
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, Phillip Owens and Laura Bowling, Agronomy

**Vertical Tillage Evaluation**
Evaluate the yield and soil health effects of vertical tillage versus no-till on corn and soybeans
   Dave Osborne, Ripley County Extension

**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

**Sun Grant Nitrogen Biomass Study**
Determine the ability of annual biomass like maize and sorghum crops to produce with various nitrogen inputs and evaluate perennial biomass crops such as switchgrass, native prairie and miscanthus on marginal land sites
   Sylvie Brouder, Jeff Volenec, Ryan Dierking and Niki DeArmond, Agronomy
Indigenous Soil Potassium Supply  
Fertilizer Potassium Use Efficiency  
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

Long Term Nitrogen Rate Trial for Corn  
Evaluation of corn yield response to nitrogen rates and sidedress application times  
Jim Camberato and Bob Nielsen, Agronomy

Effects on Soybean Growth and Yield of Previous Long-Term Variable Nitrogen Rates to Corn  
Evaluate soybeans following corn  
Bob Nielsen, Jim Camberato and Shaun Casteel, Agronomy

Hybrid Differences for Yield Response to Seeding Rates  
Compare yield response to seeding rates for two hybrids identified by the seed company as responding differently to seeding rates  
Bob Nielsen and Jason Lee, Agronomy

Effects of Early-Applied Foliar Fungicides and a Foliar Fertilizer on Corn Health and Yield  
Compare early fungicide application and foliar fertilizer with conventional application timings in large plots  
Kiersten Wise and Jeff Ravellette, Botany & Plant Pathology and Jim Camberato, Jason Geis and Bob Nielsen, Agronomy

Soybean vs. Corn Planting Dates  
Planting dates are important for both soybean and corn. This project is designed to determine which crop should be planted to maximize yield of the respective crop as it relates to the calendar and the growing season.  
Shaun Casteel, Bob Nielsen and Andrew Westfall, Agronomy

Soybean Seeding Rate Trial  
Evaluate the performance of soybean seeding rates in large plots  
Shaun Casteel and Andrew Westfall, Agronomy

Corn Fungicide Efficacy Trial  
Examine efficacy of currently labeled fungicides against foliar diseases in corn  
Kiersten Wise and Jeff Ravellette, Botany & Plant Pathology

Early Corn Fungicide Application Trial  
Examine efficacy of early foliar applied fungicides against foliar diseases in corn  
Kiersten Wise and Jeff Ravellette, Botany & Plant Pathology

Evaluation of Experimental Fungicides in Soybeans  
Examine efficacy and profitability of experimental fungicides for soybean diseases  
Kiersten Wise and Jeff Ravellette, Botany & Plant Pathology
Foliar Fungicide Best Management Practices in Soybeans
Examine timed applications of pesticides vs. applications made in response to pest pressure
Kiersten Wise and Jeff Ravellette, Botany & Plant Pathology

Aspergillus – Large Experiment
Determine background population of A. flavus and F. verticilliodes and examine the effects of applications of Afla-guard and AF-36
Kiersten Wise and Jeff Ravellette, Botany & Plant Pathology

Aspergillus Experiment 1
Examine effectiveness of timing and rate of application of Afla-Guard and AF-36 RCBD
Kiersten Wise and Jeff Ravellette, Botany & Plant Pathology

Aspergillus Experiment 2
Examine effectiveness of Bt hybrids on aflatoxin and fumonisin contamination
Kiersten Wise and Jeff Ravellette, Botany & Plant Pathology

Aspergillus Experiment 3
Examine interaction of fungicides and biocontrol strains
Kiersten Wise and Jeff Ravellette, Botany & Plant Pathology

USDA Northern Regional Soybean Trials
Evaluate USDA Northern Soybean Tests cultivars grouped by maturity for comparison, plus increasing selected early maturity group soybean germplasm lines for PR disease studies
Wad Crochet, Teresa Hughes and Brian Fulk, USDA

Programs for Broadleaf Weed Control in Winter Wheat
Evaluate wheat herbicides
Bill Johnson, Mike White, Joe Eikley, Botany & Plant Pathology

Integrated Corn Management Demonstration
Demonstrate corn management
Bill Johnson, Mike White, Joe Eikley, Botany & Plant Pathology

One Pass and Two Pass Corn Herbicide Programs
Compare one pass to two pass corn herbicide strategies
Bill Johnson, Mike White, Joe Eikley, Botany & Plant Pathology

Pre-emergence and Pre-emergence followed by Post-Emergence Corn Herbicide Programs
Compare corn herbicide programs
Bill Johnson, Mike White, Joe Eikley, Botany & Plant Pathology

Authority MTZ Burndown Programs in Corn
Evaluate Authority MTZ
Bill Johnson, Mike White, Joe Eikley, Botany & Plant Pathology

Growth Regulator Herbicide Technology
Evaluate the effects of growth regulator herbicide technology dependency in corn and soybean rotation on weed populations
Bill Johnson, Mike White, Joe Eikley, Botany & Plant Pathology
Authority MTZ Burndown Programs in Soybean
Evaluate Authority MTZ
Bill Johnson, Mike White, Joe Eikley, Botany & Plant Pathology

DPX R5W13 Burndown Programs in Soybean
Evaluate DPX R5W13
Bill Johnson, Mike White, Joe Eikley, Botany & Plant Pathology

Panther + 2,4-D Burndown
Evaluate Panther + 2,4-D herbicides
Bill Johnson, Mike White, Joe Eikley, Botany & Plant Pathology

Two Pass Herbicide Programs in Roundup Ready Soybeans
Evaluate two pass herbicide programs
Bill Johnson, Mike White, Joe Eikley, Botany & Plant Pathology

Residual Control Using Dicamba Herbicide
Evaluate length of residual control with dicamba
Bill Johnson, Mike White, Joe Eikley, Botany & Plant Pathology

Soybean Weed Control in Minimum and No-till
Evaluate soybean herbicides
Bill Johnson, Mike White, Joe Eikley, Botany & Plant Pathology

AGH 11021 Herbicide
Evaluate AGH 11021 herbicide for no-till burndown weed control in soybean
Bill Johnson, Mike White, Joe Eikley, Botany & Plant Pathology

AMS and Touchdown Hi-Tech and Dicamba
Evaluate AMS alternatives with Touchdown Hi-Tech + dicamba for weed control in non-crop
Bill Johnson, Mike White, Joe Eikley, Botany & Plant Pathology

AMS and Touchdown Hi-Tech and 2,4-D
Evaluate AMS alternatives with Touchdown Hi-Tech + 2,4-D for weed control in non-crop
Bill Johnson, Mike White, Joe Eikley, Botany & Plant Pathology

Blacklight Insect Trapping
To monitor the presence of various insect moths
John Obermeyer, Entomology

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

Cooperative Ag Pest Survey for Exotic Insect Pests of Oak
To support a statewide survey network of exotic insects pests of oak
Larry Bledsoe, Entomology

Beetles in Woody Biomass Removal
Study the effects of the saproxylic beetle community to the removal of woody biomass
Jeffrey Holland and Carly Morris, Entomology
**Surveying Indiana Soybean for Soybean Vein Necrosis Associated Virus and Evaluating New Management Practices**
Learn more about Soybean Vein Necrosis epidemiology in Indiana to quantify the level of the threat and also evaluate new management practices for Indiana soybean growers
   Punya Nachappa, Biology and Christian Krupke, Entomology

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

**Corn and Soybean Herbicide Product Development**
To obtain weed ratings for various Dupont corn and soybean herbicides
   Kelly Barnett, Dupont Crop Protection

**LG Seeds Demonstration Plots**
To evaluate several LG corn hybrids and soybean varieties
   Mark Hardy, LG Seed

**Grassland Wildlife Habitat Development**
Demonstrate the use of warm season grasses in wildlife habitat
   Chris Grauel, Indiana Department of 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 and Natural Resources

**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 and Natural Resources

**Biomass Harvest Site – Research on Amphibian Populations**
Investigate the ecological impacts of woody biomass harvesting for bioenergy on amphibian populations
   John Dunning, Patrick Ruhl and Rob Chapman, Forestry and Natural Resources

**Screening Butternut for Resistance to Butternut Canker Disease 2011**
To evaluate butternut canker disease
   Jim McKenna and Brian Beheler, Hardwood Tree Improvement and Regeneration Center

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

**Pure Butternut Seed Orchard of New Clones Resistant to Butternut Canker 2011**
Orchard seed production
   Jim McKenna and Brian Beheler, Hardwood Tree Improvement and Regeneration Center
**Butternut Test 2010**
Evaluate butternut from all over the native range as well as hybrids and pure’s from the SEPAC orchard
   Jim McKenna and Brian Beheler, Hardwood Tree Improvement and Regeneration Center

**Limited Range Provenance Test of Black Cherry (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 and Regeneration Center

**Mass Selection of Butternut for Resistance to Butternut Canker from a Range Wide Collection (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 (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 and Regeneration Center

**Butternut Resistance Test (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 and Regeneration Center

**Butternut Resistance Seed Orchard (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 (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 and 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 outplanting survival and growth
Jim McKenna and Doug Jacobs, Hardwood Tree Improvement and Regeneration Center

Figured Walnut Seed Orchard
Grafted walnut clones from trees that were identified having valuable figured grain characteristics. Seedlings derived from this orchard and samples of grafted trees will be examined for figured grain in the future.
Keith Woeste, and Jim McKenna, Hardwood Tree Improvement and Regeneration Center; John Seifert, Indiana Department of Natural Resources

Limited Range Black Cherry Provenance Test 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 northwestern 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, and Rob Chapman, Forestry & Natural Resources; USDA Forest Service, National Forest - Region 9; Phil O'Connor, IDNR

Red Oak Progeny Test 2008
The beginning of a northern red oak improvement program using genetic testing of select northern red oak seed trees
Keith Woeste, Rob Chapman, Keith Woeste and Jim McKenna, Forestry & Natural Resources; Phil O'Connor, IDNR.

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

Black Walnut Progeny Test 2008
Ongoing genetic improvement of select black walnut seed trees to develop improved walnut seed sources for Indiana and the Midwest
Keith Woeste, Rob Chapman, and Jim McKenna, Forestry & Natural Resources

Deer Fencing, Select Genetics, & Slow-Release Fertilizer Mixed Hardwood Plantation (2008)
Demonstration of research results that have shown significant 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 and cherry
Don Carlson, Jim McKenna, Lenny Farlee, Rob Chapman, Mike Saunders, Doug Jacobs, Charles Michler, and Keith Woeste, Forestry & Natural Resources; Phil O'Connor and Bob Hawkins, Indiana Department of Natural Resources
Red Oak Progeny Test 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, Rob Chapman, 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 (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
   Charles Michler, Lenny Farlee, Rob Chapman, 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