SOUTHEAST PURDUE AGRICULTURAL CENTER
RESEARCH AND DEMONSTRATION PROJECTS
2012
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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

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

Corn Population Study
Evaluate Pioneer hybrids with different planting populations
   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 Volenc, 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

**Corn Yield Response to Fertilizer Nitrogen Rates**
Continue building database of yield response data that will help us further fine-tune our current N rate recommendations for corn following soybeans.
   Jim Camberato and Bob Nielsen, Agronomy

**Corn Seeding Rate Trial in Large Plots**
Evaluate the yield response of corn to a range of seeding rates.
   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

**Early Soybean Systems in Southern Indiana**
To determine the yield impacts of planting early vs. full maturing soybeans at various planting dates.
   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

**Early Fungicide Application Corn Trial**
Compare early fungicide application with conventional application timings in large plots
   Kiersten Wise and Jeff Ravellette, Botany & Plant Pathology and Jim Camberato and Bob Nielsen, Agronomy

**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
**USDA Northern Regional Soybean Trials**
Test 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

**Early Corn Post Herbicide**
Instigate applied early post to corn
   Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Burndown of Annual Broadleaf Weeds**
Evaluate NUP-11052 for preplant corn burndown of annual broadleaf weeds
   Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Burndown of Glyphosate Resistant Weeds**
Evaluate NUP-11052 = glyphosate as a burndown of glyphosate-resistant weeds in corn
   Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Herbicide Evaluations in a Two Pass System**
Evaluate Corvus, Balance Flexx, Capreno, Laudis and Liberty in a two pass corn system
   Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Burndown and Residual Control of Weeds in Notill Corn**
Evaluate burndown and residual of Corvus, Balance Flexx, and Liberty in notill corn
   Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Liberty Link Soybean Herbicides**
Evaluate glufosinate in Liberty Link soybeans
   Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Preplant Burndown Herbicides**
Evaluate pre-plant burndown with Anthem
   Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Tank-mixes for Glyphosate Resistant Weeds**
Impact tank-mixes for glyphosate-resistant species
   Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Water Conditioners on Burndown Herbicides**
Evaluate the effect of MSO with AMS and other water conditioners on the burndown
   Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Benefits of Dicamba Post Emergence**
Identify dicamba benefits from post standpoint
   Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Soybean Post Emergence Herbicide Mixes**
Cinch applied post emergence to soybean plus Synchrony or Classic
   Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Valor Burndown**
Valor XLT burndown trial
   Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology
**Burndown of Glyphosate Resistant Weeds in Corn**
Evaluate NUP-11052 = glyphosate as a burndown of glyphosate-resistant weeds in corn
Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Marestail Control in Roundup Ready Soybeans**
Evaluate control of marestail in Roundup Ready soybeans
Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Marestail Control in Liberty Link Soybeans**
Evaluate control of marestail in Liberty Link soybeans
Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Burndown Control of Marestail**
Prefix or Boundary + Sharpen burndown for marestail
Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Herbicide and Adjuvant Burndown Study**
Glyphosate + PPO herbicide and adjuvant burndown study
Bill Johnson, Mike White, Paul Marquardt, Botany & Plant Pathology

**Ammonium Sulfate Alternatives with Herbicides**
AMS alternatives with Touchdown Hi-Tech for weed control in Roundup Ready corn or Roundup Ready soybeans
Bill Johnson, Mike White, Paul Marquardt, 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

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

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

**Pioneer Seeds Cooperators in Research**
To manage early planted soybeans
Tom Gasper, Pioneer Seed

**Soybean Treatments Affects on Deer Feeding in Soybeans**
Evaluate deer feeding preferences to soybeans with and without seed treatments to determine if further research is needed.
Dave Osborne, Ripley County Extension
Grassland Wildlife Habitat Development
Demonstrate the use of warm season grasses in wildlife habitat
Chris Grauel, Indiana Department of 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
To 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 Ordhard 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
To 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

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 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, 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

Agri-Team Training Support Facility
Replicate “Third World” farming conditions, techniques and challenges
Cpt Stephen Spencer, Muscatatuck Urban Training Center