THE FUTURE OF THE PACS: HOW TO BEST UTILIZE THE RESOURCE

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Mission of the Purdue Agricultural Centers:

To provide locations and expertise across Indiana for the development of research and ideas, which will benefit producers and others involved in agriculture and land-use issues.

- Davis Purdue Agricultural Center.
- Feldun Purdue Agricultural Center.
- Northeast Purdue Agricultural Center.
- Pinney Purdue Agricultural Center.
- Southeast Purdue Agricultural Center.
- Southern-Indiana Purdue Agricultural Center.
- Southwest Purdue Agricultural Center.
- Throckmorton Purdue Agricultural Center

- By the CoA departments we cover 418 experiments across the PAC system for 2025 numbers are very similar.

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Feeding the World

- By the year 2050 we'll need to feed two billion more people.
- Most of the food Americans eat is now produced on such large scale, mechanized farms, which grow row after row of a single crop, allowing farmers to cover more ground with less labor.
- Demand for meat has tripled in the developing world in four decades, while egg consumption has increased sevenfold.
- The demand for more crops to feed livestock is one reason experts say we'll need to double crop production by 2050.

- Reference National Geographic

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Davis Purdue Agricultural Center - DPAC

Farmland, Indiana

RESOURCES

- GPS technology in use since the 1990s
- Equipment and resources conducive to field-scale work, rather than small-plot research
- Mapped timber stand
- Constructed wetland used for educational programs for landowners and K-12 groups
- 30+/-acre field with drainage tile designed specifically for managing the seasonal water table

UTILIVING THE RESOURCE

- DPAC strives to be our leader in the precision technology area. Always looking at new software, digital ag, and mechanization. The benefit to the PAC system is the sharing of knowledge they experience. DPAC lead our venture into the drone program. I foresee DPAC taking the next step into Autonomous Equipment Operations.
- DPAC will continue our educational effort into the benefits of tile and surface drainage.

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Feldun Purdue Agricultural Center - FPAC

Bedford, In

RESOURCES

- The **Indiana Beef Evaluation Program** (IBEP) Bull Test Station, an important link between Purdue Agriculture and Indiana's beef cattle industry
- Research at FPAC focuses on commercial beef cattle breeding and management. Scientists in the Department of Animal Sciences use most of the pasture for a cattle herd that is part of a long-range genetics study. Other research has included studies of growth, yield, and cutting alternatives for upland central hardwoods and grazing research. Agronomic field studies with row crops are limited, with roughly 60 acres of soybeans and 140 acres of corn.

UTILIZING THE RESOURCE

- The **Indiana Beef Evaluation Program** (IBEP) Bull Test Station, an important link between Purdue Agriculture and Indiana's beef cattle industry
- Demonstration of watering systems, grazing techniques, and beef cow production practices
- Imperative that FPAC forage research continues to offer beneficial feed options to producers.

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Northeast Purdue Agricultural Center - NEPAC

Columbia City, Indiana

RESOURCES

- 30 acres of Certified Organic crop production
- Diagnostic Training Center, site of annual training for Commercial Pesticide Applicators, Certified Crop Advisors, and farmers
- A pond near the office and constructed wetlands about two miles west of the office used for pond and environmental management workshops
- Timber parcels jointly managed with the Department of Forestry and Natural Resources
- Precision agricultural equipment, GPS and Autosteer technology
- Plots of corn, soybeans, wheat, and alfalfa used for tours, special training events, and annual field days

UTILIZING THE RESOURCE

- NEPAC will support intensive research on ecological processes affecting organic farming. Work here will involve studies under standard practices and ecologically intensified organic farming systems.

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Pinney Purdue Agricultural Center - PPAC

Wanatah, Indiana

RESOURCES

- PPAC manages the Mary S. Rice farm for field scale research projects.
- Linear move irrigation systems covering nearly 100 acres of tillable land
- Specialty vegetable crop research experiments
- Three distinct soil types: Tracy Sand, Sandy Loam, and Muck
- 30-foot by 48-foot greenhouse; two rolling high tunnels for organic research and conventional vegetables
- Private Applicator Recertification Program (PARP) Testing
- Two weather stations, for the National Weather Service and for Purdue climatologists
- GPS/RTK technology

UTILIZING THE RESOURCE

- PPAC leads our large plot research effort. Growers have seen the value in data driven from field scale experiments that mirror their own production.
- With abundant water for irrigation and sandy soils conducive to growing horticulture crops this region is poised for more commercial vegetable production. Especially as water depletion continues out west.
- Tar Spot disease is the most current corn disease needing research.

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Southeast Purdue Agricultural Center - SEPAC

Butlerville, Indiana

RESOURCES

- UAV spraying and seeding drone technologies
- Soil drainage and water quality stations
- Modern field machinery
- Annual hunting permits and public access for hikers, bird-watchers, mushroom hunters, etc.
- Public tours highlighting farming techniques and agriculture
- Purdue Extension Wildlife Specialist based at SEPAC
- 1,100-square-foot conference room for education and training

UTILIZING THE RESOURCE

- SEPAC has taken the drone program to the next level and have a certified aerial applicator on staff. This is an exciting new area for applying products and for seeding cover crops.
- Due to SEPAC's challenging soils their continuance of managing water through tile and surface drainage will improve land for research purposes and education.

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Southern Indiana Purdue Agricultural Center - SIPAC

Dubois, Indiana

RESOURCES

- Grazing systems under similar management and stocking rates.
- Conference space for 200 with high-speed Internet, kitchen facilities
- Beef herd (170), goat herd (50 females) and hair sheep (100 females)
- Different varieties of permanent pasture
- Fence and water systems for rotational grazing
- Barns and traditional feedlot
- Dennis H. Heeke Southern Indiana Disease Diagnostic Laboratory, which serves the poultry and livestock industries in southern Indiana
- Approximately 20 built ponds for erosion control and livestock
- Extension forester based at SIPAC
- Approximately 600 acres of timber is in research protocols

UTILIZING THE RESOURCE

- SIPAC is a forage-based operation. Current research focuses on beef cattle, hair sheep and meat goat management, livestock grazing trials, forage production, forest management, and aquaculture.
- They are a multi species PAC location providing animals not only for beef, but also goats and hair sheep. Supplying the main campus with animals for classroom animal growth, development, and evaluation.

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Southwest Purdue Agricultural Center - SWPAC

Vincennes, Indiana

RESOURCES

- Home to the Southwest Purdue Ag Program (SWPAP)
- Five greenhouses used to grow transplants
- Swamp cooled greenhouse
- Three high tunnels
- Two diagnostic and research laboratories
- Horticultural cold storage coolers
- Capability of variety testing for seed companies as well as fungicide and insecticide testing for agribusinesses
- Summer workforce to plant, maintain, harvest crops and collect data
- Onsite plant pathologist, horticulturist/vegetable specialist

UTILIZING THE RESOURCE

- Although SWPAC is the smallest PAC in Purdue's regional farm system, it is one of the most active in research on fruits and vegetables — crops primarily grown in southwestern Indiana. Projects focus on increasing horticultural and agronomic crop yields and quality while decreasing input expenditures, including pesticides. Research is conducted on high value protected ag crops in three high tunnels located at SWPAC.

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Throckmorton Purdue Agricultural Center - TPAC

Lafayette, Indiana

RESOURCES

- Thirteen high tunnels in operation
- Crops processing facility with two walk-in coolers for produce and plant materials
- At the Meigs Farm, 145 acres set up for drip and overhead irrigation, and the site has been extensively tiled for optimum drainage
- Five full-time employees, including a horticulture crops manager and specialty crops specialist
- Seasonal labor
- Twilight tours, topic-specific workshops, biannual pruning workshop

- TPAC is unique in its close proximity to campus. It is home to almost one-third of Purdue agricultural research projects, with current work involving 30 different crops. Research focuses on weed management, insect management, soil fertility, agronomic crop production, ornamentals, fruit and vegetable production, biological controls, systems engineering, hardwood production, woodland and habitat management, and resistance management of weeds and insects. New areas of interest include organic and high tunnel vegetable production.

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Additional Resources for PAC Utilization

- **PAC Operating Policy** (PDF)
- **PAC Field Research Request Form**
- **PAC Animal Research Request Form**
- **Policy on Transgenic Crops at the PACs** (PDF)
- **Animal Transgenic Guidelines** (PDF)
- **Bodies of Water & Ditches (PDF)**

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Challenges and Solutions to Resources

- **Labor** – I see this as the most important resource we have and that is our staff. Finding skilled labor is difficult as everyone is needing people in our line of work.
  - Some support of labor can be done through grant submissions.
- **Land** – We are tight on land availability per requests that we are receiving from researchers.
  - Improving land for research by means of tiling & drainage.
  - Potential is always there for donated pieces to the CoA.
  - Success with past use of farmers collaborating with the university.
- **Input Costs** – Input costs for crops and livestock have increased substantially
  - Inputs need to be grant supported when they have direct contact with the research.
  - Some researchers have had success with donation of inputs.
- **Weather/Climate** – Weather is becoming more of a factor affecting research
  - Continue to monitor our array of PAC weather stations collecting data to better understand weather patterns. Continue our investment in irrigation where applicable.
- **Equipment** – Staying current with industry standards
  - Continue the collaboration with industry partners to supply the CoA with the most current machines available.
- **Infrastructure & Facility Upgrades** - Work continues every year to improve facilities.
  - Continued assessment of facilities and determining which locations will be put on the Capital Projects listing.
- **Funding** – Grants and CoA support

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Closing Remarks

- We have an exceptional group of PACs, that represent our mission statement, through their location and expertise.
- Purdue Extension – Extension is our avenue to reach the people we serve. The PAC system partnering with them is crucial. They are our voice.
- Communities – The PACs reside in communities around the state and those communities look to them and Purdue for answers. It's imperative that we continue to express our needs to our stakeholders, whether that be through the CoA, PCARET, Extension, or local organizations.
- CoA Departments – We need to continue to work together as a team, as it is going to take all our collaboration to continue our good work. The PAC system needs to share "who we are" by a bit more transparency.
- What this all boils down to is "Communication" which we all depend on along with joint cooperation.

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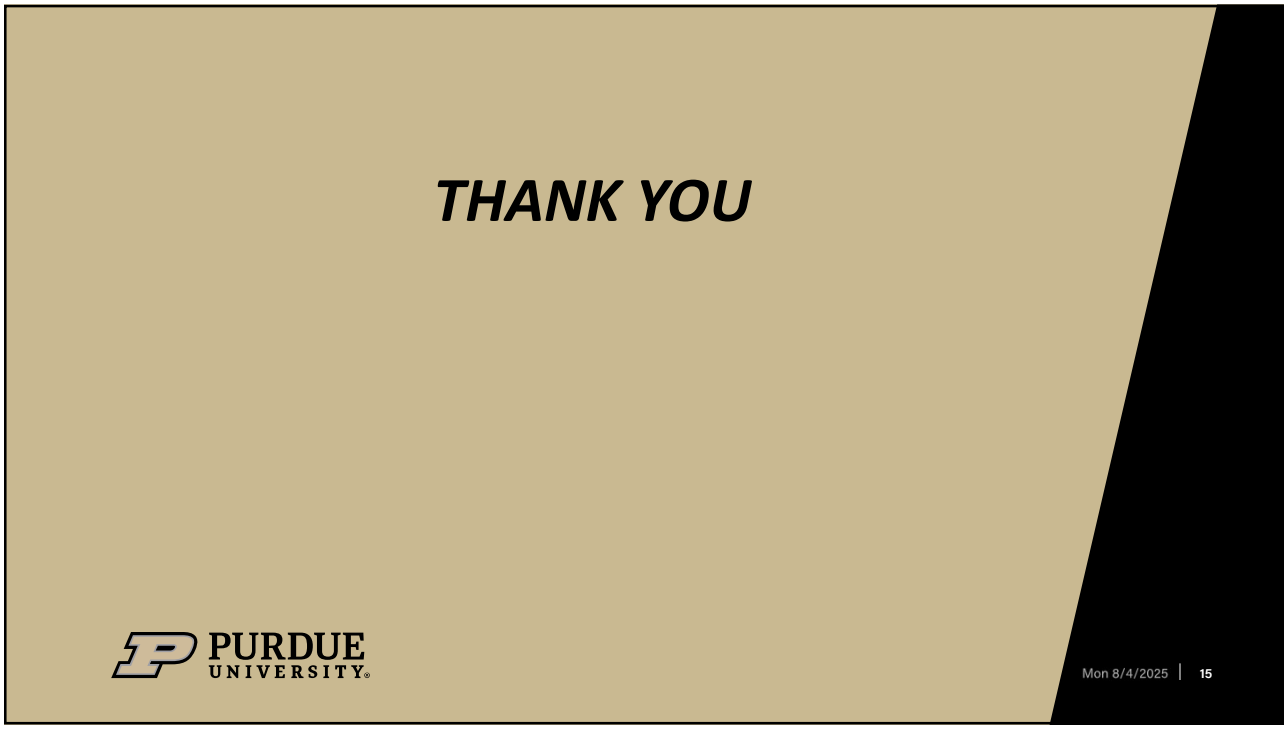

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