

# **APPENDIX K**

## **Extension Program Appendices**

- K.1** Purdue Crop Diagnostic Training and Research Center
- K.2** Purdue Crop Performance Program
- K.3** The Indiana State Climate Office

## Appendix K.1

### **Purdue Crop Diagnostic Training and Research Center Director, Corey K. Gerber**

#### **Overview**

The Purdue University Crop Diagnostic Training and Research Center (DTC) is known across the Midwest for its unique “hands-on” approach for teaching the art and science of accurately diagnosing agricultural crop problems. The DTC consists of a core group of Purdue University faculty and staff that work closely together to carry out the DTC mission.

Agribusiness personnel, which include fertilizer and chemical dealers, crop consultants, seed company agronomists, producers, and county Extension Educators need pertinent and timely information on current and future issues tied to crop production systems and crop and pest management strategies. These individuals rely heavily on this information (provided through the DTC program) in order to make environmentally and economically sound crop production and crop and pest management input decisions and/or recommendations.

#### **DTC Workshops**

To address the issues mentioned above, the DTC develops and conducts diagnostic training workshops each growing season. Historically, the DTC workshops are held outdoors, from May to September, at the Agronomy Center for Research and Education (ACRE). These workshops are either “open” to the public or are contracted out to individual companies/organizations. For the “open” workshops, the DTC team will develop the training agenda. With the contract workshops, the DTC team will work closely with companies/organizations to establish an agenda that fits within the training requirements of these groups.

The DTC envisions the number of workshops to increase dramatically in the next few years because of the addition of the Beck Agricultural Center at the Agronomy Center for Research and Education. By having a state-of-the-art education facility, the DTC program will be enhanced significantly.

Workshop Impact – Since 2003, nearly 4,700 individuals have been trained at just over 110 DTC workshop sessions. During this 6 year span, over 600 presentations have been given by over 80 different presenters. The participants that have attended these workshops primarily reside within the Midwest. We have on occasion, welcomed individuals from the Southeast and Eastern portions of the U.S., as well as from Canada. With only survey data available from the past couple of years, the DTC participants have an impact on nearly 35,000,000 acres of farmland in the Midwest.

#### **DTC Field Guides**

Along with the DTC workshops, the Center has also developed two heavily utilized training publications; the *Corn and Soybean Field Guide* and the *Forage Field Guide*. These publications are excellent “in-field” reference guides covering topics related to corn, soybean, and forage production. In these pocket-sized field guides, one can find condensed information on disease, weed, and insect pest identification, diagnosing nutrient deficiency symptoms and herbicide

injury symptoms, and information covering general corn, soybean, and forage production practices.

Field Guide Impact – From 1988 to 2002, nearly 200,000 *Corn and Soybean Field Guides* were sold. Since that time (2003 – 2008), nearly 191,000 *Corn and Soybean Field Guides* have been sold, with an additional 55,000 guides already pre-sold for 2009. Since the introduction of the *Forage Field Guide* (2004) the DTC has sold nearly 9,000 copies. We are currently sold out of the *Forage Field Guide* and will have guides available in the spring of 2009. Currently, 10,000 *Forage Field Guides* have been pre-sold for this upcoming year.

A *Wheat Field Guide* is currently being develop and is scheduled for release in 2010.

These field guides have been distributed across North America, Canada to Mexico, which includes at least 20 U.S. states. We have tracked our guides to other continents as well; Africa, Europe, and Australia.

## Appendix K.2

### **Purdue Crop Performance Program**

Director, Philip DeVillez  
Technician, William Foster

#### **Overview**

The Purdue Crop Performance Program carries out performance testing of hybrid corn and soybean varieties sold in the state of Indiana.

The results of these trials are distributed to Indiana producers in print, via e-mail and through the web free of charge. Indiana Agri-news distributes performance results to over 25,000 producers. Our e-mail list includes over 40 companies and our web site receives thousands of hits mostly during the harvest season.

#### **Program Structure**

Corn: Indiana is divided up into three regions North, Central, and South with 4 locations in each. Hybrids within each region are tested in groups by relative maturity early, mid and late and replicated 3 times at each location.

Soybean: The state is again divided into three regions Northeast, Northwest and South with three locations in each. Varieties are grouped by maturity into early, mid or late trials replicated 4 times.

#### **Program Highlights**

- Number of soybean varieties entered for testing has doubled from 146 in 2003 to 347 in 2008.
- The Corn and Soybean Performance programs were combined in 2006.
- The Soybean program expanded in 2006 from 6 to 9 locations.
- Began a cooperative program with Indiana Soybean Alliance in 2008 to have farmers nominate varieties for testing.
- Income increased from ~ \$87,000 to over \$200,000
- Provide new protein, oil, and fiber data on soybean varieties.

#### **Program Details**

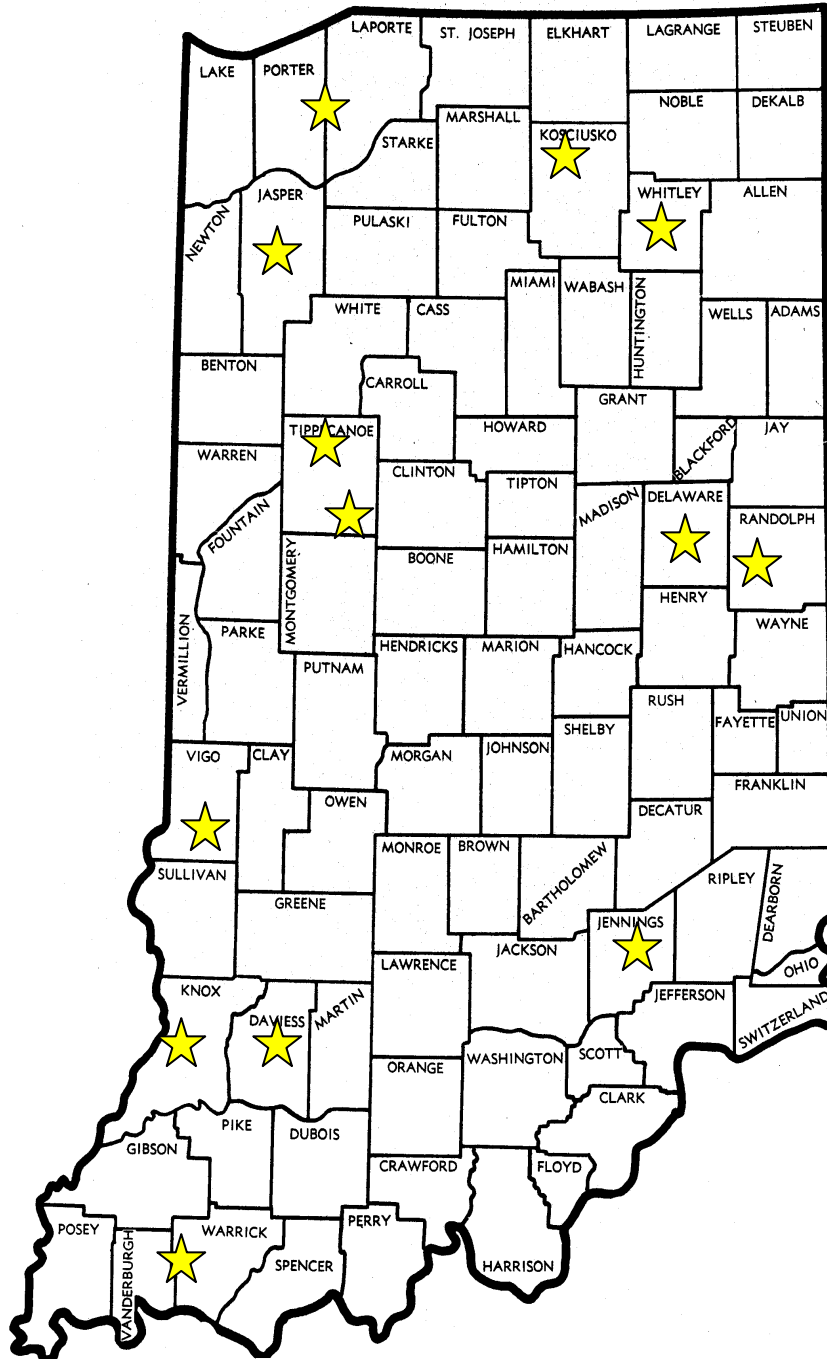
Due to retirements the personnel has been reduced the from 4 down to 2. However there have been increases in the number of contracts and cooperative work that contributed to the program's income growth including contract work with Landec Ag, Monsanto, Purdue Extension, and other University plant breeders. The cooperative work with Indiana Soybean Alliance is expected to continue and expand as the Farmer Nomination Program grows. The Purdue Crop Performance Program works with Ag & Biological Engineering program collecting soybean samples for protein, oil and fiber analysis.

#### **Future Plans**

The program plans to focus on writing grants for equipment replacement and improvements. Another goal is to create innovative new testing programs such as an experimental test program

and to improve the Web site by providing more data and tools to assist producers in making hybrid and variety selections.

### 2008 Purdue Crop Performance Testing Locations



## Appendix K.3

### **The Indiana State Climate Office**

#### **Overview**

The Indiana State Climate Office (*Iclimate*) is the state archive of official weather and climate observations recorded throughout Indiana. *Iclimate* maintains an online archive of current and historical daily and hourly weather and climate observations from manual and automated weather and agricultural weather networks (<http://www.iclimate.org>). Indiana State Climate Office compiles, analyzes, synthesizes and develops climate and climate change information for Indiana and beyond.

The Indiana State Climate Office was established in 1956 with Lawrence Schaal as the State Climatologist (SC). This was part of the new federally funded program to document and study the climate of the states. In 1973 when the federal program was terminated, states were given the opportunity to support the programs with local funding. As was done by land grant colleges in several states, *Iclimate* was adopted and funded by Purdue University. In 1978 James Newman was appointed the State Climatologist until his retirement in 1987. After which, Kenneth Scheeringa was initially an acting State Climatologist and then the State Climatologist until 2005. With the broader focus on climate change across Purdue, Dev Niyogi was hired as a tenure track faculty with the additional title of State Climatologist.

*Iclimate* provides expertise for a range of projects that require weather and climate information. The various sectors that consistently approach the State Climate Office with data queries are: agriculture, research and education, government regulatory agencies, legal professionals, construction, forensics, insurance, public utilities, news media, and private citizens. *Iclimate* not only assists in providing climate observations and summaries but also interprets and applies these data to solve real world client climate related issues. Examples include mapping and analyzing droughts, reviewing severe weather impacts, assisting in mitigation plans, and developing synthesis studies.

#### **Extension**

Extension efforts have also been tightly integrated with research and education activities. Responses to queries are often based on research by *Iclimate* staff. The projects have provided internship opportunities to undergraduate and graduate students who become involved in practical climate related inquiries outside the classroom. The client queries often provide research questions for the students to undertake short term or graduate research topics.

#### **Research**

Current research includes the study of climate and climate changes in Indiana, Midwest US and the tropics. Ongoing project include assisting with monitoring of drought, development and management of community rainfall and hail, snow monitoring, monitoring and estimating evapotranspiration and soil moisture modeling, developing process studies related to heavy rain and severe weather climatology, impacts of climate change on agriculture, assimilation of

satellite remote sensing information in developing hydroclimatic assessment, assessment of role of radiative and nonradiative forcings on regional climate change, development of climate change education modules for middle schools. With such information, *IClimate* is able to routinely provide expert advice on climate topics to state and local government, policy makers, and the news media. The results of this and other research topics are have resulted in peer reviewed research papers, digital Indiana Climate Atlas, and popular media commentaries as well as presentations.

### ***Iclimate* Future**

While *Iclimate* serves a vital need for the region and Purdue's efforts in the climate and climate change, future focus and growth is critically dependent on availability of sustained support. The Department of Agronomy has supported *IClimate* with operational funding and the partial salary of the associate state climatologist. A significant funding for the projects and operations comes from competitive research grants such as from NSF and NASA. There is an immediate need for a computer programmer and database specialist position to assist with large scale climate projects. Future needs include sustained long term funding from the broader base of campus and beyond. *IClimate* assistance impacts many people and projects outside the walls of the hosting department, such as university research projects and staff, state and local government agencies, and Indiana business.