

# Partnership Matters

November 2005

## RESEARCH BRIEF —

### In-season N management

**What's new.** The issue of Iowa's water quality is not a new topic within the state, but proposed Environmental Protection Agency surface water quality criteria for nitrogen (N) could dictate stricter guidance for N inputs for corn production. It is therefore important to evaluate emerging N management strategies that may improve N use and economic return to corn production. High clearance equipment now allows in-season N application and rate adjustment to be practiced. To complement this new production technology, new plant monitoring sensors have been developed. When used together, these technologies allow producers to begin implementing in-season N management practices based on plant monitoring.

**ISU research.** In 2004, an Iowa State University Extension (ISUE) soil fertility specialist, John Sawyer, initiated a study at 10 sites around the state to examine the in-season N management strategies for corn production. This study was a collaborative effort with ISUE; Division of Soil Conservation, Iowa Department of Agriculture and Land Stewardship (IDALS); cooperating producers; HAGIE Manufacturing; Platte Valley Equipment and John Deere Ag Management Solutions.

The study had three objectives:

- to monitor N levels in corn plants to determine the need for in-season N application and the effect on corn yield;
- to reveal the impact of set preplant or early side-dressed N rates on corn plant N sufficiency and N stress development, frequency and rate of needed in-season N application, total fertilizer N applied and corn yield; and
- to compare corn yield response and economic return using pre-applied N versus pre-applied plus in-season monitoring and additional N application.

The in-season corn N management study was continued in 2005, and the number of field sites around the state was increased from 10 to 18 sites. Yield monitor data from the 2005 season are still being collected and analyzed.

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High clearance equipment allows in-season N application and rate adjustment.

## RESEARCH BRIEF —

### On-farm research in Siouxland

**What's new.** Agronomic research has traditionally involved laboratory, greenhouse or small plot work where multiple treatments can be tested with enough replication of treatments to measure statistically significant effects. Those small-scale studies form the foundation of our agronomic management recommendations and have served our industry well. But a growing interest has developed to tailor research to test practices in larger strip or field-scale research. In 2004, a group of northwest Iowa agribusiness associates explored the option for on-farm, ISU-sponsored research to be conducted exploring several current management problems. The group included several producers, the ISU Northwest Iowa Research and Demonstration Farm Experimental Association Board and Joel DeJong, ISU Extension field crop specialist. They coordinated with ISU campus-based staff to conduct local research efforts that test agronomic practices on actual field-scale situations.

**ISU research.** In the 2005 growing season, three studies were conducted on northwest Iowa farms. One was an assessment of Cruiser® insecticide applied as a seed treatment on one farm, a study examining different soybean aphid insecticide treatments, and a preliminary trial on the application of Headline® fungicide for control of soybean foliar diseases. DeJong provided the overall coordination of the research, and co-supervised Josh Sievers, a technician who is dividing time between the Northwest Iowa Research and Demonstration Farm and the pilot on-farm research project. To gain statistical validity, the goal is to run plots with at least three replications per treatment; however, some initial work may consist of nonreplicated demonstration plots.

**What's next.** DeJong will meet with both Corn and Soybean Initiative partners and other organizations this winter, and they will collaboratively plan the crop year 2006 research plot program.

**Learn more.** Some preliminary data will be published this winter in the Northwest Iowa Research and Demonstration Farm annual report. Joel DeJong will use some data in local winter extension programming in northwest Iowa and will share pertinent results with the other extension field crop specialists. For direct questions, DeJong can be reached at 712-546-7835, Plymouth County Extension Office, or by e-mail at [jdejong@iastate.edu](mailto:jdejong@iastate.edu).

## In-season corn N management, *continued*—

The study is expected to increase awareness of production practices that reinforce the economic and environmental importance of corn N management and also will provide an improved understanding of corn yield response and economic return to in-season corn N management practices.

**What's next.** Due to the rising cost of commercial N fertilizer, this in-season N fertilizer research will be continued at approximately

10 field sites in 2006. Sawyer hopes to continue future field-scale N rate studies, collecting corn yield response data in a range of soil types and growing environments.

**Learn more.** Data will be presented at ISUE winter meetings and in the *ICM Newsletter*. Please also visit the nitrogen topic area of the ISU Agronomy Extension website, <http://extension.agron.iastate.edu/soilfertility/nutrienttopics/nitrogen.html>.



## Iowa Soybean Rust Team\*

Year team created _____	2003
Number of ISU staff delivering training on rust _____	20
Number of new ISU Extension publications created to support Fast Track _____	4
Number of national fungicide use manuals distributed _____	15,000
Number of suspect soybean rust samples that made it to the Plant Disease Clinic via the Fast Track System _____	3
Number of suspect soybean rust samples that made it to the Plant Disease Clinic via the Fast Track System that had the disease _____	0
Number of First Detectors _____	531
Number of training sessions for First Detectors _____	13
Number of Triage Team members _____	39
Number of presentations given by team members Nov. '04–April '05 _____	445

For more information, go to [www.soybeanrust.info](http://www.soybeanrust.info).

\*Iowa State University, Iowa Soybean Association (ISA), Iowa Department of Agriculture and Land Stewardship (IDALS), United States Department of Agriculture-Animal and Plant Health Inspection Service (USDA-APHIS)

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... and justice for all

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## PARTNER PROFILE —

### Ken Pecinovsky

Superintendent, Research and Demonstration Farm, Iowa State University

#### Origin

Cresco, Iowa; grew up on a diversified family farm (dairy, beef, hogs, crops)



#### Training

- M.S., weed science, 1994, Iowa State University
- B.S., agronomy, 1988, Iowa State University

#### At ISU

- Responsibilities include managing and collecting data on up to 50+ research experiments per year on the ISU NE Research and Demonstration Farm, owned by the Northeast Iowa Agricultural Experimental Association near Nashua
- Worked as a technician in weed science, conducting replicated research throughout the state on ISU research farms, 1991–1994
- Held internship positions dealing with herbicide research and seed production while earning undergraduate degree

#### Major research areas

- Water quality studies (tile drainage/metering/sampling equipment), evaluating manure/nutrient application quantities/timing and tillage
- Pesticide testing—herbicide/fungicide/insecticide studies
- Soil fertility—N, P, K, pH studies
- Cultural practices—planting dates, row spacing, populations, crop rotations, tillage studies
- Variety testing/plant breeding—corn/soybeans/alfalfa/small grains
- Organic/conventional farming systems comparisons
- Horticulture—home demonstration gardens, grape cultivars, strawberry variety trial
- Forestry—windbreak trees/shade trees/shrubs/native planting

#### Quotable quote

“It’s an extremely interesting career position—instead of focusing on one particular area of research, you’re doing research in all areas of agriculture. As in any farming operation, you need to become a specialist in all aspects of agriculture and always have questions dealing with soil fertility, gardening, insects, weeds, diseases, machinery, manure, tillage, variety/pesticide selection, economic thresholds, input costs, planting dates, weather, etc. Through ISU Extension, our research results can be quickly transferred to their clients who can use the information in their business operations.”