

Partnership Matters



October 2005

RESEARCH BRIEF —

Weed control and soybean populations

What's new. The effectiveness of glyphosate in combination with Roundup Ready® soybean varieties has decreased the perceived value of many of the cultural practices traditionally used to supplement weed management programs in soybean. Soybeans have typically been planted at populations higher than needed for optimum yields. One reason for overplanting was to improve the crop's competitiveness with weeds. However, as technology costs for bioengineered seed have increased, there is an increasing penalty in extra seed expense that returns no easily observed economic benefit.

ISU research. Bob Hartzler, ISU Extension weed scientist, initiated a study in 2005 to examine effects of soybean populations on the development of the soybean canopy and its ability to suppress weed establishment. The objective is to determine whether reducing soybean populations will result in a need for higher glyphosate rates or more frequent applications to maintain effective weed control. The role of plant populations is more important when soybeans are planted in 15-inch or narrower row spacings than in 30-inch rows due to the earlier canopy development with narrow rows. Initial data were collected from plots in Ames in summer 2005.

What's next. Hartzler plans to replicate the plot work in 2006 at multiple locations across Iowa. These plots will be grown on cooperating ISU research and demonstration farms.

—continued



Soybean research plot

RESEARCH BRIEF —

Evaluating fungicides for foliar disease management

What's new. Corn and soybeans are susceptible to numerous fungal foliar pathogens that have the potential to cause economic yield losses. The use of foliar fungicide in seed corn production is routine. Decisions to use foliar fungicides in hybrid corn production are based on hybrid susceptibility, cultural and environmental conditions. Until Asian soybean rust showed up in the United States in November 2004, no one took much notice of soybean leaf diseases, and foliar fungicides were rarely used as a disease management tool in Iowa. But with the imminent threat of rust to Iowa's soybean industry, fungicides may become part of standard production practices for the crop.

ISU research. This growing season, Alison Robertson, ISU Extension plant pathologist, evaluated registered fungicides and new products for their efficacy against certain foliar pathogens of seed and hybrid corn. Also this year, Robertson collaborated with X. B. Yang, ISU Extension plant pathologist, to evaluate numerous fungicide products on soybeans and conducted experiments with Matt O'Neal, ISU Extension entomologist, to investigate application of fungicides with foliar-applied insecticides. Although data on disease severity and yield response are still being collected and analyzed, some observations can be reported.

In the seed corn experiments, disease pressure in the plots was high and noticeable differences in disease severity were evident between unsprayed plots, those sprayed once, and those that received two applications of product.

In the soybean experiments, 17 products in more than 40 treatment combinations were tested for efficacy against foliar soybean diseases at the ISU research and demonstration farms at Crawfordsville and Nashua. Disease pressure was particularly low at Nashua. Brown

—continued



Gray leaf spot

Weed control, *continued*—

Learn more. Information from the soybean canopy-weed suppression research will become available as results are collected and analyzed. As this information is generated, it will be published in the *ICM Newsletter*, on the ISU Agronomy Weed Science webpage and in reports with the ISU research and demonstration farms involved.

For questions or detailed information about this research, contact Bob Hartzler, ISU Extension weed scientist, at hartzler@iastate.edu, or call 515-294-1923.



ISU BY THE NUMBERS —

ISU Soil and Plant Analysis Laboratory (SPAL)

First recorded soil/limestone testing at ISU	1931
Year SPAL offered full public services	1946
Total samples processed in 1931–32	708
Number of samples processed in 2004	46,537
Lab budget for soil nutrient analysis in 1936	\$250
Lab budget for the ISU SPAL in 1946–47	\$6,700
Lab budget for ISU SPAL in 2005–06	\$215,000
Cost per sample in 1946 (P, K and pH)	60¢
Cost per sample in 2004 (P, K and pH)	\$7.00
Number of labs authorized to certify limestone licensing	1
% of revenue from private sector samples submitted (2004)	38
% of revenue from ISU research samples (2004)	54

For more information, go to www.agron.iastate.edu/soiltesting/.

Partnership Matters is published electronically once a month for partners of the Corn and Soybean Initiative, with funding from the College of Agriculture and support from Iowa State University Extension. Brian Meyer, College of Agriculture, is executive editor of *Partnership Matters*; Keven Arrowsmith, Continuing Education and Communication Services, is managing editor; and Donna Halloum, Information Technology Services, Iowa State University, is production designer.

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... and justice for all

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Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Stanley R. Johnson, director, Cooperative Extension Service, Iowa State University of Science and Technology, Ames, Iowa.

Evaluating fungicides, *continued*—

spot and frogeye leaf spot were only present at very low levels in the experiment. At Crawfordsville, disease pressure was slightly higher. Brown spot, frogeye leaf spot and *Cercospora* leaf blight were observed. There were no obvious visual differences between the treatments in terms of overall foliar disease severity, but some phytotoxicity was observed at Crawfordsville with products containing tebuconazole.

What's next. Fungicide efficacy trials on corn and soybean will continue in 2006. On soybeans, rates and time of application will be fine-tuned.

Learn more. Data will be presented at extension winter meetings and in the *ICM Newsletter*.

PARTNER PROFILE —

Angie Rieck-Hinz

Extension program specialist, Iowa State University, with Manure Applicator Certification Program and Iowa Manure Management Action Group (IMMAG)



Origin

A Benton County, Iowa, girl transplanted to a swine, cow-calf, diversified farm in southwestern Wisconsin

Training

- M.S., soil fertility, 1992, Iowa State University
- B.S., crop and soil science, 1988, University of Wisconsin–Platteville

At ISU

- Responsibilities include developing and delivering manure management extension programs
- Began coordinating Iowa Manure Management Action Group (IMMAG) and Manure Applicator Certification Program in 1998
- Worked as extension program specialist with ag drainage wells, 1993 to 1996

Notable Achievements

- Manage the IMMAG website, which annually averages more than 1 million hits
- Served as University of Arkansas ex-officio representative to then Governor Clinton's Animal Waste Task Force, 1992
- Kiwanis Member of the Year, 2002

Personal

- Love to garden and tend flowers
- Adore my husband and my cat

Quotable Quote

“When my family moved to Wisconsin, I could not wait to return some day to Iowa. Since I first moved back in 1989, I have left Iowa twice for professional reasons and twice I have returned to ISU. There is no better place to work in agriculture, live in a farming community and pretend that I am again an Iowa farm girl. Every day my job offers new challenges and the opportunity to work with great people who love and respect Iowa agriculture.”