

# MSU Crop Management & Field Diagnostic School

**Project Number:** GR03-046

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## **Project Justification**

In the Upper Midwest, Extension's critical audience has shifted from farmers to agricultural (ag) professionals (Schmitt et al., 2000). Ag professionals can loosely be defined as persons who advise farmers, including: ag product retailers, co-operative agronomists, private consultants, county Extension Agents, etc. Thus, extension programming needs to focus on ag professionals who use university research-based information to help farmers make decisions. Additionally, State Extension Specialists can provide larger educational impact by working with ag professionals on programming and providing more train-the-trainer opportunities.



One effective method for Extension Specialists to provide learning opportunities for ag professionals and farmers is through crop management schools. These schools provide practical crop production information through hands-on learning in small group settings in the field (Spandl et al., 1998). Prior to receiving GREEN funding, Michigan State University Extension did not offer a crop management school. Thus, Michigan ag professionals and farmers needed to travel to Indiana, or other further locations, to obtain training of this nature.

Understanding how to use the most recent University research and recommendations is important for farmers and ag professionals to make sound management decisions. Better decisions lead to increased farm profitability and when that is gained through better timed or reduced chemical inputs, environmental benefits will also occur.

## **Objectives**

The objective of the MSU Crop Management and Field Diagnostic School is to provide ag professionals, county Extension Agents, farmers and government personnel an opportunity to hone their field decision making and problem solving skills by interacting with MSU Extension Specialists. The specific objectives include:

1. Provide a hands-on learning environment where in-depth subject specific information can be learned experientially and cooperatively.
2. Provide participants with the tools/skills necessary to make field specific decisions based on scientific information.
3. Provide participants with a clearer understanding of how all facets of crop management impact one another.

4. The school should become self-sufficient after the initial year.

## **Results and Accomplishments**

1. The MSU Crop Management and Field Diagnostic School was held July 25, 2003. Sixty-six people attended. Participants were broken into four main groups based on their employer (crop consultants in general (2 groups), county Extension Agents, farmers plus government employees) and presumed skill level. The initial group breakdown was important to allow more knowledgeable participants to interact with one another and Extension Specialists on an advanced level. During each activity, the large group was broken into smaller groups to solve problem in a hands-on manner. The School provided university research-based information to ag professionals from Michigan, Ohio, and Ontario. The four subject areas covered included: crop management, entomology, soil science, and weed science.
2. In the crop management activity participants learned how to scout fields using hand-held computers and GPS units. Learning how to dig, prepare, and rate corn for corn rootworm damage was the focus of the entomology activity. Participants explored soil variability and sampling techniques to develop management zones on farms in the soil science activity. The focus of the weed science activity was to learn how to diagnose herbicide injury as well as scout fields, determine thresholds, and develop effective, economical management practices in corn.
3. Participants obtained a clearer understanding of how various facets of crop management impact one another. For example, in the soil variability exercise discussion focused on how past management decisions, like where manure was applied, impact current soil samples and how they could use that information to apply lime or nutrients only where needed. Participants learned how hand held GPS systems can help them locate problem areas in a field and return to those locations later to soil/plant sample or apply a insecticide/herbicide/fertilizer for corrective action.
4. The School's income from registration fees nearly covered the costs of the 2003 School. Project GREEN funds that were not spent on the 2003 School have been spent on the 2004 School. It is expected that the income from the 2004 School will equal or exceed



expenses. The School will be self-sustaining beginning in 2004.

## **Impacts**

Based on participant survey answers, the School increased participant's knowledge in crop management, entomology, soil science, and weed science by 38, 71, 21, and 37 %, respectively. Eighty-nine percent of growers who participated in the School said that they may change some of their farm practices based on

knowledge gained during the School. Of all the non-grower participants (ag professionals, county Extension Agents, government personnel, etc.) that attended, 96 % said the knowledge they gained during the School will improve the quality of the services they offer their clientele. It is expected that participants will use the knowledge gained in the School to make scientifically based crop management decisions that improve farm profitability and sustainability. This may be done through better scouting to determine appropriate pesticide applications or improved nutrient management; both of which improve farm profitability and reduce the environmental impacts of agriculture. Participants likely spent \$400 on time, travel, and registration fee to attend the School. It is estimated that they would receive a minimum of a ten fold return on their investment by increasing profitability through better management.

The following are some quotes from participants when asked what they thought about the 2003 School. Participants were asked this question approximately 10 months after the School:

1. *“Training on soil testing procedures was excellent – instructors demonstrated how soil variability affects soil fertility and how soil sampling procedures impact laboratory results. After completing the training, I was able to replicate their methods as part of a course in Washtenaw County called “Farming a Few Acres.” Participants reported through course evaluations that the soils training class was one of the most significant and useful learning experiences they have had.” – Mike Score, MSU Extension*
2. *“The corn rootworm rating session was very hands-on and valuable to everyone. After attending this school I am able to problem-solve more effectively with growers in the field, especially when it involves identifying pests, establishing thresholds and recommending the control measures needed for a specific pest or symptom.” – Mark Seamon, MSU Extension*
3. *“Each spring I refer to the latest information on weed identification and control, how to diagnose herbicide injury, and which herbicides are problematic and the most effective. This was the first opportunity I have had to handle and use a hand-held GPS (global positioning system). We learned about the use and accuracy of a GPS unit to mark problem areas in a field. Participants tested the units in a field scenario and learned how easy they were to use. The information we learned from the school can be readily applied in the field.” – Steve Poindexter, MSU Extension*

### **Summary Statement**

The Crop Management & Field Diagnostic School participants felt that they learned new information that will help them stay on the cutting edge of science in agriculture. The knowledge they gained will help them improve the profitability and environmental sustainability of Michigan agriculture.

### **Funding Partnerships**

There were no funding partnerships.