

INTEGRATED FARM MANAGEMENT DEMONSTRATION PROGRAM IN IOWA

Presented to the 19th North Central Extension - Industry Soil Fertility Conference by Regis D. Voss

The Integrated Farm Management (IFM) Demonstration Program was established by the landmark 1987 Iowa Groundwater Protection Act. The five-year program, funded through 1992, is a cooperative effort involving various state agencies, Iowa State University and Iowa farmers.

The program coordinators, many of whom are Iowa State Extension Service staff and scientists, work with farmers to help them implement best available technology that protects the environment and conserves energy. The goal of the program is to prevent groundwater contamination without affecting farm profitability or hurting production.

Groundwater contamination became a major concern in Iowa during the 1980s when elevated nitrate levels were detected in the Big Spring Basin in northeast Iowa, an agricultural area where farmers had used heavy amounts of nitrogen fertilizer. Following this discovery, the Iowa Legislature provided funding for the Big Spring Basin Demonstration (BSB) Project, the precursor of IFM. As a result of the BSB project, the majority of farmers living in the basin have reduced their nitrogen fertilizer use.

On-farm demonstrations are central to both the IFM and BSB projects. In addition, IFM includes program evaluation -- attitudinal surveying of both participating and non-participating farmers -- and the development of educational materials on water quality and best management practices. A separate program, the Ag Drainage Well Targeted Education Project, exists to implement corrective measures to stop groundwater contamination from drainage wells.

The state of Iowa allocated about \$1.5 million for IFM in 1989. With its share, ISU Extension Service is conducting about 70 tillage, weed, nitrogen, vegetable, and alfalfa demonstrations on about 60 private farms and 10 university research centers in 32 counties.

Nitrogen and weed management demonstrations are an important part of IFM. Designed to refine nitrogen fertilizer use, the nitrogen management demonstrations consist of comparison plots receiving none to 180 pounds of nitrogen fertilizer per acre. The treatments, which are replicated four times, provide detailed information on the nitrogen fertilizer rates required to attain optimum economic yield.

In approximately 20 weed management demonstrations conducted on farms this year, participants used both mechanical and chemical weed control practices. Weed control treatments for corn included cultivation alone, broadcast spraying and a combination of band spraying and cultivation.

The 1988 plot comparisons indicated that banding of herbicides is a viable alternative to broadcast spraying. The yield differences indicated that farmers can cut the amount of herbicides without affecting yields. The banded plots had the same or slightly higher yields than the broadcast sprayed plots.

Other IFM projects, each having their own unique features, are organized by different geographical areas:

BUTLER COUNTY PROJECT

About 50 northeast Iowa farmers are learning how to combine environmental protection with farm efficiency to increase profits. Instead of focusing on one technique, the project stresses a "whole farm" approach in which farmers evaluate their entire operations.

These IFM participants are using crop enterprise records, integrated nutrient management and integrated pest management techniques, such as field scouting for insects. With scouting and soil test data in hand, they have been able to reduce their pesticide and fertilizer use, save money and avoid crop losses by warding off pest problems.

UPPER BLUEGRASS WATERSHED PROJECT

Based in Audubon County in western Iowa, the project includes plots demonstrating reduced tillage, varying rates of nitrogen application, different herbicide treatments and other management practices.

Some of the participating farmers have reduced their pesticide use by having their fields scouted weekly for pests and treating only when the economic threshold has been reached. Others are experimenting with a nitrogen soil test developed by ISU agronomist Alfred Blackmer that has enabled them to determine exact nitrogen fertilizer needs.

FARM 2000 PROGRAM

Centered near Grinnell, located in mid-Iowa, this project is co-sponsored by ISU and the private Grinnell 2000 foundation. About 35 farmers participate.

They strive to apply best management practices, using soil sampling, field scouting, water quality testing and crop enterprise analysis. The demonstrations include controlled grazing, cover crops, soil testing, reduced nitrogen and herbicide applications and biological control of thistles.

NEW IFM PROGRAMS

With an additional \$300,000 from the state, three more IFM projects will be implemented in 1990. The projects will focus on crop production practices, animal manure management and refined farm management.

Along with field demonstrations, Extension staff will establish a permanent field diagnostic laboratory dedicated to teaching effective, profitable and environmentally benign crop production to chemical dealers and crop advisory personnel.

MODEL FARM DEMONSTRATION PROGRAM

Another program similar to IFM will begin in the 1990 crop season. The Model Farm Demonstration Program was created this year when the Iowa Legislature designated \$600,000 from oil overcharge funds for additional on-farm demonstrations in five geographical areas of the state.

The three-year program will be administered by the state Department of Natural Resources and operated by ISU Extension Service. Like IFM, it will teach farmers alternative practices that safeguard Iowa's water and soil, following the example set by Butler County IFM farmers who depend on a complete crop management plan rather than a single alternative practice.

Model Farm will include forage, tillage, and integrated pest management demonstrations as well as soil testing for nitrogen and field scouting for pests.

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