



The Model Farms Demonstration Project

Background

The Model Farms Demonstration Project (MFDP) was proposed by Governor Terry Branstad and approved by the Iowa Legislature in 1989. The project was established in five geographic areas—southeast, south-central, southwest-central, northwest, and north central Iowa. It consisted of intensive assistance, demonstration, and education programs to promote the voluntary adoption of management practices that enhance the sustainability, efficiency, and profitability of Iowa agriculture while reducing agricultural consumption of non-renewable energy resources. The MFDP was administered by the Iowa Department of Agriculture and Land Stewardship (IDALS), the Iowa Department of Natural Resources, and the Iowa State University Extension Service. Local programs were implemented by ISU Extension in the five geographic areas.

The MFDP was based on the premise that while ongoing research in sustainable agriculture is needed, enough knowledge already exists to substantially reduce the adverse environmental impacts of certain crop and livestock production practices while maintaining or improving profits. Investigators on this project recognized, however, that technical information and local demonstration of a practice's feasibility will not necessarily motivate farmers to change. Farmers' must evolve at the same time as new practices are implemented. Learning the "art" of managing new systems and recognizing sources of motivation to change are also necessary for long-term, voluntary adoption of more sustainable practices. The MFDP one-on-one assistance programs, educational activities, and project information marketing were designed to effect these more fundamental changes.

The primary objective of the MFDP was to facilitate these changes on a broad scale in order to "mainstream" sustainable agriculture principles into Iowa farming. The project provided one-on-one assistance to cooperators. Management practices that refine and reduce chemical inputs for crop nutrients and pest control, reduce tillage, and improve forage production were emphasized. Educational programs for a wider audience included on-farm, local demonstrations because that is what farmers repeatedly say they want and trust. Information marketing, including both education and publicity, was targeted to magnify the impact of the project on other farmers and their urban neighbors.

The Leopold Center participated in this project by supporting information marketing efforts in the south central (SC) and southeast (SE) MFDP areas; thus, this summary will focus on project accomplishments for those areas. (Project activities differed somewhat between areas depending on environmental priorities of local farming systems.) Leopold Center interdisciplinary issue teams, as well as other organizations, contributed expertise.

Approach and methods

The SE project, located in Des Moines, Henry, Louisa, and Washington Counties, was dedicated to integrating sustainable crop production and farm management with improved conservation tillage practices in the poorly drained soils of the area. The primary focus of the SC area (Lucas, Clarke, and Monroe Counties) was to improve the profitability of hay and pasture management for livestock on the predominantly steep and erodible fields of southern Iowa. Integrated Crop Management (ICM) and rotational grazing were expanded

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Budget

\$50,000 for year one
\$50,000 for year two
\$50,000 for year three

to include cooperators in the Corydon Lake Watershed, Wayne County, in 1991 with additional funding from IDALS and the U.S. EPA Pollution Prevention Initiative.

A statewide coordinator hired in 1989 staffed all five project areas, trained scouts, assisted local coordinators, and communicated project activities to the state-level project management team. Other state-level support staff included a communications specialist and an Extension sociology associate.

Leopold Center funding paid salaries, benefits, and travel expenses for part-time communication specialists in Des Moines and Lucas Counties, as well as covering newsletter and other publication production costs, mailing costs, and expenses associated with media contact. In fiscal year 1991, these funds also helped to support a part-time crop scout in the SE area; this person assured timely management of field crops at demonstration sites. In addition to numerous Extension staff involved with the project, members of the Leopold Center's interdisciplinary animal management and cropping systems research issue teams also participated.

Baseline surveys: Project staff began by designing pre- and post-implementation surveys, linked to statewide surveys supported by other programs, to document changes in farmers' attitudes about new technologies, environmental issues, and perceived impediments to change. In the SE and SC areas, the survey instrument was tailored to reflect the specific considerations of that region. The baseline information obtained from these surveys defined the project cooperators relative to their neighbors and provided information used in refining and targeting local project activities. Cooperators were also surveyed regarding their sources of information, their record-keeping, and their operations in general (including their livestock and manure management practices).

Analysis of the baseline surveys found that the MFDP cooperators were more conventional and aggressive than random sample Iowa counterparts. They tended to be younger and more educated, somewhat more concerned about

chemical use, and to farm larger amounts of land than their near neighbors.

Follow-up surveys being conducted into 1994 will allow a quantitative evaluation of project impacts on the practices and attitudes of both cooperators and their neighbors.

Information marketing: Part-time communications specialists were necessary in the SC and SE areas because these projects had different emphases and thus different information needs than the other three areas. The information marketed by these specialists was intended to increase local recognition, participation, and technology transfer from project demonstrations. These specialists developed educational materials for each area, guidebooks to demonstration sites, newsletters, news releases, displays, field day materials, and other publicity vehicles. They also cultivated contacts with the media to increase exposure of the project's purpose and achievements and thus increase attendance at field days. In both the SC and SE project areas, displays were used not only at field days and special meetings, but at local banks and businesses frequented by farmers. Content was changed frequently to maintain interest. MFDP staff continue to display these materials at venues such as conferences, fairs, expos, and the like.

Another goal of the MFDP was to establish networks of producers who can help one another to adopt new practices after the project has officially ended. The communications specialists helped to pursue this goal by profiling cooperators in project newsletters and in the local media.

Findings

The SC MFDP: This project, in Lucas, Clarke, and Monroe Counties, has refined pasture and forage management as its principal focus. Forages are an increasingly important component of farm systems in this part of Iowa as farmers adapt to comply with soil conservation programs. The demonstrations developed by the project were located on 18 cooperators' farms in four counties in 1993 and at the McNay Memorial Research Center. They included rotational grazing (to increase forage

quality and feed efficiency); frost-seeding red clover into bluegrass; establishing and managing tall fescue and eastern gammagrass; clear-seeding and no-till establishment of alfalfa; control of Canadian, bull, and musk thistle; multiflora rose control; grass and alfalfa hay fertility; round bale storage; and integrated (whole-farm) management.

Two whole-farm demonstrations, which continue into 1994, will use a variety of record-keeping systems to analyze the economics of improved animal production alternatives and how they can be integrated with refinements in cropping systems. There is presently little data from applied research in this area of sustainable agriculture implementation.

The SE MFDP: This project promotes integrating sustainable crop production and farm management with reduced tillage practices in the somewhat poorly and poorly drained soils of the area. (As in the SC project, demonstration sites were located on cooperators' farms; project staff also helped to establish long-term tillage plots at the Southeast Research Center in Crawfordsville.) The long-term goal of this project was to strengthen and expand the network of operators who are testing and adopting reduced tillage methods. Because local producers have been concerned about compaction, they have been reluctant to experiment with reduced tillage. Thus, demonstrations were set up in clusters to assure that cooperators have a support network of nearby neighbors who are also testing new tillage systems.

The seven demonstrations focused on (1) comparing tillage systems for corn and soybeans; (2) nitrogen (N) management for corn, comparison of N rates, including use of the late-spring soil test and N credit for a previous soybean crop; (3) comparing deep tillage to no-till and spring chisel, on both corn and soybeans; (4) comparing ridge till and reduced tillage on corn and soybeans; (5) no-till drilling corn and soybeans into stubble of various crops; (6) earthworm populations and effects on infiltration; and (7) ridge-till soybeans and the effect of the previous cropping history.

Information and education: Field days and tours were the main methods used to transfer information about targeted practices and demonstration results. In the SE project 58 media outlets were contacted for each event; in the SC project, news releases were distributed to 22 outlets. Communication specialists also used direct mailings to farmers. Tables 1 and 2 show field day attendance for both projects.

Table 1. SE MFDP field day attendance.

Crop Year	# Field Days	Attendance
1990	8	190 (128 new, at least 85% farmers)
1991	7	298 (152 new)
1992	13	374 (92 new)
1993	9	292 (new participants not recorded)

Table 2. SC MFDP field day attendance.

Crop Year	# Field Days	Attendance
1990	2	38
1991	7	165
1992	8	322 >80% farmers
1993	9	251 >85% farmers

Many field days planned for 1993 were postponed or canceled because of rain; attendees at those that were held were often more interested in information about coping with effects of the unusually wet weather than in the planned topic. Both areas reported a significant increase in the visibility and credibility of Extension as evidenced by local media coverage and calls received by staff. The general increase in attendance over the three years of the project is attributed to publicity efforts; SC staff reported that by 1993, repeat visitors expressed definite interest in trying some of the new practices being demonstrated. The SC project also emphasized "clinics," hands-on field days in which ISU scientists and Extension specialists participated more extensively. Clinics covered controlled grazing (1991), hay quality testing (1992), and fence building (1993).

Local media published numerous articles and features about project events, cooperators, and findings. Both the SC and the SE projects were featured in national farm publications. A bimonthly newsletter, *The Inside Edge*, was developed for the statewide MFDP; its mailing list exceeded 3,500. This publication high-

lighted goals, results, and cooperators, as well as information about sustainable agriculture research and demonstration from other sources. The SE and SC communications specialists prepared local versions of *The Inside Edge* for their areas. Another publication, intended to deliver forage development information for immediate use by local producers, has been published monthly since late 1992 in the SC area; this publication (the *Modern Forage Development Plan*) has replaced *The Inside Edge* for the remainder of the SC project.

Project staff also gathered information about the farmer audience for their information marketing efforts. They enumerated the newspapers with circulation in each area and assessed or estimated the percentage of rural readership (or audience in the case of radio programs).

Finally, project staff evaluated the media effort, including the publicity following each field day. Extension and Soil Conservation Service staff rated the media coverage in the SE area extraordinary from 1991 to 1993. The communications specialist for the SC area surveyed her media contacts in 1991 to determine their use patterns; only three of the 22 contacts did not regularly use the information. Focus groups conducted in Lucas and Monroe Counties halfway through the project indicated that farmer cooperators strongly supported the local on-farm demonstration concept and read and used project informational materials.

Implications

In general, the accomplishments of the SE project include dissemination of results from demonstrations of reduced tillage, N management, and pest management (crop scouting). For the SC project, demonstrations on hay fertility, eastern gammagrass establishment, rotational grazing, and hay testing were also conveyed through strong producer networks that were developed in the three-year course of the MDFP effort.

The most notable results of the MFDPP have been attitude changes: for example, one SE cooperator who had entered the project to "prove" the superiority of deep tillage now admits that many tillage systems are workable with practice; he has come to expect the best economic results from no-till plots on his farm. This farmer is likely to make gradual, not radical changes in his tillage system (a small measurable result), but his mind is now open to many other new practices because of a fundamental change in his attitude about adoption. Another example from the SE project is increased interest in scouting for integrated pest management. *While changes in the amount of pesticides applied may depend on conditions, the appropriateness of the application and the nature of the decision-making process leading to application have changed in a way that will reduce unnecessary pesticide inputs and also improve farmers' ability to manage non-chemical control strategies.*

In the SC project, the coordinator says local livestock producers "used to go out and look at their animals; now they also look at the pasture, how the plants are growing . . ." The attitude change apparent here is that cooperators are considering forages more as they do other crops—with potential for significant economic returns for higher-level management. This attitude change may have important environmental consequences by keeping erodible land in hay and pasture and lowering the land cost for cow-calf production. The MFDPP project has created a strong network of local producers, which facilitates the delivery of information and makes it easier for others to adopt the demonstrated practices.

Other agencies and institutions cooperating with the SE and SC MFDPP included the Soil Conservation Service, Southeast Area Community College, FFA Creelman Research Farm near Mediapolis, the Southeast Research Farm at Crawfordsville, and the McNay Memorial Research Farm near Chariton.

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