



Abstract

An education program can attain its goals only if it reaches the target audience. Participation can be enhanced by designing the program around a landmark event that is expected to increase the perceived need for the education. In this case study, the University of Minnesota Extension Service, anticipating release of new state feedlot rules, prepared a two-year education program to inform livestock producers about contents of the rules and to provide manure management education. The goal was to enable producers to implement the manure management practices required or encouraged under the rules. Participation in these programs far exceeded that for manure management education in the state prior to rule adoption. Attendance exceeded 4,000 in the first year and 1,100 in the second. This is being followed with an in-depth and personal education program in which small groups of producers develop two-field manure/nutrient management plans for their own farms. As of April 2004, 560 producers have participated in programs timed to coincide with release of the feedlot rules benefited from both the heightened awareness brought by major rule adoption, and by the recognized need by many producers to learn about and implement improved manure management practices specified in the rules. Coupling education programs with a change in regulations, new incentive payment programs, or some other high-profile event effectively exploits a "teachable moment."



Improvement of small open feedlots was a topic of both the first year of the Feedlot Rules Education project, and a follow-up series of county sessions held in the third year of the extended project.

Introduction

The University of Minnesota Extension Service has provided publications and workshops over many years on appropriate management of manure and fertilizer in crop production. However, in-depth on-farm interview surveys indicated that significant over-application of nutrients in manure and/or fertilizer continued to be frequent. Practices requiring wider adoption include:

- Soil testing and manure analysis
- Soil testing legume and manure nitrogen contributions when applying fertilizer
- Manure spreader calibration

Education programs, to be successful, must reach the target audience. If the target audience is farmers that have **not** implemented water quality protection practices, then education programs describing voluntary practices alone are insufficient to reach them.

This poster describes two programs delivered by the University of Minnesota and its partners that reached the target audience by expressly limiting program delivery to coincide with events that were expected to heighten audience awareness and concern.

Feedlot Rules Education Project

Declining lake and stream water quality, due to eutrophication led to increasing concern that voluntary practices and education were insufficient to change production practices. In a four-year multi-stakeholder process, new state feedlot rules were developed and readied for release in year 2000. Communication within livestock producer groups, reports in the press, and rule-making hearings raised considerable awareness in the agricultural community about the impending rules. UM Extension anticipated that education programs timed to the release of the rules would reach a wider farm audience than previously available. A Section 319 grant was applied for in 1999, and the two-year project was approved in time for the rules' effective date in October 2000.

An inter-agency team, led by Extension, prepared publications and slide presentations. In each of the first two years, five regional "train the trainer" sessions were held for county and regional staff of Extension and agricultural professionals. In the first year, education for farmers and agricultural professionals. In the first year, education focused on requirements for feedlot registration, permitting, and land application. The second year focused on manure and nutrient management planning and record keeping.

Results: The high level of awareness in the agricultural community afforded by rules' release brought over 4,000 producers to the first-year county sessions, far exceeding any previous education effort in this subject area. By the second year, interest had dissipated somewhat; 1,150 farmers attended the sessions on nutrient management planning. A third year was added to the project to address improvement of small open feedlots as required in the rules by January 2005. Attendance was 718 farmers and agricultural professionals.

Timing and Design of Education Programs to Enhance Participation: Manure Management Education in Minnesota

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Soil and manure testing were part of the focus of both the Feedlot Rules Education and Small-Group Nutrient Planning projects.

Discussion and Conclusions

"Build it and they will come" is not a productive approach in water quality education for farmers. In the absence of significant economic incentives, like production cost reductions or cost-share/incentive programs, additional strategies are required to reach the target audience and motivate changes in practices.

The strategy successfully employed by these two projects was to couple education with heightened awareness surrounding new regulations and their application. Education was designed to address practices that would assist in meeting requirements of the rules and provide good resource management. This was possible because Extension staff served as technical advisors in development of the rules and were thereby aware of opportunities for education and its appropriate timing. Additional opportunities to couple education with increased awareness include the TMDL process now underway in Minnesota and elsewhere. Many of the state's water bodies are listed for impairments that include fecal coliform bacteria, sediment, and/or excess nutrients. Coupling water quality education with TMDLs is more challenging, however, because the TMDL process occurs over a long period of time and is watershed-specific. This will require examining stages of the process for high-profile periods, when potential audiences are likely to be involved or have a higher level of awareness. These might include a period around release of load allocation studies or public hearings on preliminary implementation plans. Education opportunities must be anticipated well in advance for program delivery to be ready when awareness is high.

Small-Group Nutrient Management Planning

The new feedlot rules require livestock operations with greater than 300 animal units to maintain, on the farm, a nutrient management plan for all fields where manure is applied. The deadline to complete these plans is January, 2005. Anticipating this requirement, UM Extension applied for a Section 319 grant to lead producers through plan development, in a workshop setting, for two fields of each of their own farms. Beginning in fall of 2002, groups of 8-15 producers are being recruited by Extension, county feedlot, and Soil and Water Conservation District staff as well as by livestock producer organizations. Farmers bring their own data (soil tests, manure tests, field maps) to half-day workshops where Extension staff guide participants through development of their nutrient management plans. Application rates are based on UM recommendations, and participants each calculate fertilizer cost savings based on their new plan compared to their previous application rates.

Results: As of April 2004, 55 workshops have been held for over 560 producers, all of whom developed two-field plans. Most participants are in the operation size category required to have a plan by the rule; however, others also attend. In end-of-workshop surveys, 73% responded that they intend to finish the plans for their entire farm, either by themselves, or with a professional, and only 3% said they would not. (The rest did not respond to the question.) Over 84% calculated that significant fertilizer cost savings (> \$5/acre) would be obtained for their operations by following their plans.

Demand for the workshops continues, and more workshops will be offered in the next winter season near the rules' deadline.



Manure spreader calibration, essential to implementation of any manure management plan, is addressed both in planning workshops and in field days provided by watershed-based projects.