

INVOLVING AGRICULTURAL PRODUCERS IN DEVELOPMENT OF LOCALIZED BEST MANAGEMENT PRACTICES

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SUMMARY

The Colorado Legislature passed the Agricultural Chemicals and Groundwater Protection Act in 1990 to prevent groundwater contamination due to the improper use of pesticides and commercial fertilizers. This law requires Colorado State University Cooperative Extension to provide education in Best Management Practices (BMPs) in order to give producers an opportunity to voluntarily adopt practices which protect the environment. If the voluntary approach is successful, further mandatory controls specified in the law may not be implemented. In order to achieve voluntary acceptance of BMPs by agricultural producers, our objective is to avoid a top-down, agency driven approach to the development of the required BMPs. Rather, development of BMPs in Colorado is being accomplished largely at the local level by involving the private sector—producers, chemical applicators and other experts within the affected watershed. Small work groups of 10 to 15 agricultural chemical users have been formed to develop a comprehensive set of BMPs that are technically feasible, economically acceptable and achieve state water quality goals. The producers participating in the work groups demonstrate the successful use of BMPs on their farms and foster grass-roots support for the voluntary approach. Initially, there was concern that practices developed by local producers would mainly be status quo with no real impact on groundwater protection. However, producers have taken an aggressive approach toward voluntary practices, realizing that they are preferable to mandatory regulations.

INTRODUCTION

The Colorado legislature responded to public concern about pesticides and nitrates in drinking water by passing the Agricultural Chemicals and Groundwater Protection Act (SB 90-126) in 1990. The Act declares that the public policy of Colorado is to protect groundwater and the environment from impairment or degradation due to the improper use of agricultural chemicals, while allowing for their proper and correct use. The desired outcome of this Act is educationally induced change of practices resulting in more careful use of agricultural chemicals. Colorado State University Cooperative Extension (CSUCE) as the outreach element of the state's land grant university is

expected to provide technical expertise and educational methods to achieve this outcome. CSUCE chose to involve agricultural chemical users in the process of developing and implementing BMPs which are sensitive to local conditions such as cropping practices, irrigation methods, soil, and climate.

LOCALIZED AGRICULTURAL BMPS

Development of localized BMPs for agriculture requires an effective partnership of Cooperative Extension and local agricultural producers. Cooperative Extension acts as the catalyst and driver of the process. Local agricultural producers serving on the BMP work group act as reviewers, contributors and supporters of both the process and end product. Cooperative Extension agents play a critical role as group process facilitators. Their main responsibility is to create a proper environment and climate for productive group dynamics by the BMP work groups. This includes establishing a mission statement and ground rules, managing the flow of the meeting, and acting as recorder and secretary.

The agent's first and most important task is to assemble a group of innovative producers willing to participate in the process. The importance of this task cannot be overemphasized. The group's productivity is directly related to the care in assembling it. This BMP work group is limited to 15 members. It targets a specific cropping system and/or locale. Broad producer representation is sought including members of local agricultural organizations (i.e., irrigation districts, soil conservation districts, etc.). Alternative approaches to production agriculture also are represented. This is accomplished by including certified organic growers or producers employing holistic resource management techniques in the work group. The group might also include limited participation by non-producer interests, i.e., crop consultants, the agricultural chemical industry and government agency staff (i.e., NRCS, etc.). However, it is extremely important that the BMP work group be producer driven and these non-producer interests play only a support role.

The most important assets work group members bring to the process is their knowledge based on experience and their ties to the agricultural community. This experience, combined with a commitment to the process of adopting BMPs, is the key to developing localized BMPs. Their task is to begin with the research based BMPs and identify appropriate practices for their local circumstances. The work group agenda must be manageable by initially limiting the scope of their deliberations. For example, a first task may be addressing nutrient and irrigation management BMPs. The end product becomes a set of practices that tempers research based knowledge with the practical realities faced by producers. Participating in the work group also includes their willingness to educate the agricultural community on the local BMPs.

Cooperative Extension specialists provide water quality guidance principles, research based BMPs and technical support in the localizing process. This information is contained in a reference document entitled "Best Management Practices for Colorado Agriculture," developed by Extension specialists. Topics covered include irrigation, nutrient and pest management, wellhead protection, and agricultural chemical handling. Water quality guidance principles are goal statements used to focus BMPs on a desired outcome. For example, the irrigation management guidance principle is "Manage Irrigation to Minimize Transport of Chemicals, Nutrients, or Sediment from the Soil Surface or Root Zone to Protect Water Quality." Research-based BMPs are presented with the understanding that adequate research has been conducted to identify BMPs which have a known beneficial impact on water quality. The research based BMPs provide the body of knowledge for beginning the localizing process. As the BMPs are reviewed and revised in the localizing process, the specialist edits them, incorporating the local perspective, until consensus is reached. The specialist also is in a unique position to challenge the local producers to think creatively by suggesting practices which may be outside the norm.

Achieving consensus is the desired operating procedure of the BMP work group. Each research based BMP is reviewed by the group. Consensus is achieved through discussion and modification of the practice until it is deemed feasible, while accomplishing the water quality goal. While achieving consensus is generally more time consuming, it is the best method of localizing and developing support for BMPs. It is extremely important for work group members to develop a sense of ownership of the practices. The product of the deliberations, the set of local BMPs, is published as a local BMP brochure.

The local BMP brochure accomplishes several tasks, including: (1) stating the purpose of the local BMP group, (2) acknowledging the efforts of all the work group members, (3) providing guidance on how to use the brochure, and listing the BMPs with appropriate accompanying figures, photos and diagrams to be easily read and understood. The BMPs are numbered in a manner that will allow reference to them from other documents such as an NRCS Conservation Farm Plan.

IMPLEMENTING LOCAL BMPS

The development and publishing of local BMPs represents the end of one phase and the beginning of the next phase in addressing agricultural water quality issues in an area. The next phase of implementing local BMPs uses the local BMP brochure and information gained in the localizing process as a plan of work and guide to action. Implementing local BMPs requires a cooperative effort of the Extension agent and members of the BMP work group.

The Extension agent begins this phase by identifying research and educational needs which surfaced in the work group discussions. Since the work group consists of innovative producers, they provide very useful information to Cooperative Extension on such needs. Research needs are communicated to the appropriate Extension specialists and Experiment Station personnel for consideration in their future work plans. Gaps in work group members' knowledge about BMPs indicate where educational emphasis should be placed. As innovative producers, work group members often have the respect of the local agricultural community. They can speak to other producers in various formal and informal settings on both the importance and mechanics of implementing the local BMPs.

An Extension agent utilizes a variety of educational methods to inform and educate producers in the area covered by the local BMPs. The local media is informed of the localizing BMP process early and whenever newsworthy information is produced. The local BMP brochure is distributed to all producers whenever the opportunity occurs. Work group members are given a quantity of the brochures and encouraged to share them with their producer contacts. BMPs are demonstrated through meetings and field days. Agents utilize producers on the BMP work group as cooperators in demonstrations and speakers at local workshops.

An extremely important element in implementing BMPs is to perform economic analyses of those practices which may have a financial impact. A goal is to demonstrate that BMPs are both environmentally and economically sound. Such an analysis could be performed by a local farm management association.

RESULTS

The local voluntary approach to solving water quality problems related to agriculture may progress more slowly than many in the public deem acceptable. However, it should be understood that change occurs somewhat slowly in agriculture due to the extremely risky nature of farming and ranching. Producers in Colorado, concerned that state or federal regulations will seriously impair their economic situation, are now more willing to make management changes, as long as their profitability is not compromised. Allowing the users of agricultural chemicals to (in a sense) self-regulate their activities, provides an innovative and acceptable method of solving a problem that would be very difficult for the State to effectively regulate.

In Colorado, the voluntary adoption of BMPs by farmers, land managers, and other agricultural chemical users is being accomplished by allowing these groups to have significant input at the local level. Producers have taken an aggressive approach toward voluntary practices, realizing that they are preferable to mandatory regulations. If mandatory controls become necessary,

the BMPs adopted at the local level will provide state regulatory agencies with a head start on determining what controls are feasible, and perhaps, increase producer compliance as well.

An unanticipated, but welcome, outcome of the local BMP process is the opportunity for the land-grant university to establish a new, useful, productive relationship with local producers. The sense of being equal partners in exchanging ideas to accomplish a water quality goal opens new communication avenues. The challenge to the University is to respond to issues and build this relationship.