Evaluation of Extension's Importance to Agribusinesses: A Case Study of Iowa

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Abstract
Throughout the Land-Grant system considerable effort is underway to determine how the Cooperative Extension Service might be more effective (Bloome 1996). Although there is ample evidence that Extension has been highly useful as a major educational force in productive American agriculture (Rogers 1995), recent questions about Extension's mission, future, and effectiveness have raised concerns about its viability and usefulness in today's commercial agriculture. The concerns are twofold: (1) of what importance is Extension to agricultural growers and producers and (2) how well positioned is Extension to provide relevant and cutting-edge information to the agricultural industry (Bloome 1992).

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Throughout the Land-Grant system, considerable effort is underway to determine how the Cooperative Extension Service might be more effective (Bloome 1996). Although there is ample evidence that Extension has been highly useful as a major educational force in productive American agriculture (Rogers 1995), recent questions about Extension’s mission, future, and effectiveness have raised concerns about its viability and usefulness in today’s commercial agriculture. The concerns are twofold: (1) of what importance is Extension to agricultural growers and producers and (2) how well positioned is Extension to provide relevant and cutting-edge information to the agricultural industry (Bloome 1992).

Although agricultural producers comprise one of Extension’s most important constituencies, producers identify agribusinesses (e.g., local cooperatives and independent dealers) as their most common sources of information. In a 1996 survey of Iowa producers, 64% indicated dealers were their first source of information about crop production, whereas 17% indicated they went first to ISU Extension (Lasley 1996). This finding was strong evidence for Wolf’s (1995:263) conclusion, “While Cooperative Extension Service (CES) remains a primary information source for a limited number of farmers...it is the fertilizer and pesticide dealers and crop consultants who have consistent access to farmers and consequently exercise greater influence on cropping systems.”

We contend that Extension still is a viable source of information for growers although the transfer of this information may not be as direct as it was in the past. Today, Extension provides information to agribusiness personnel who pass it on to producers. We believe this is the most significant route of impact for many of Extension’s activities. To determine whether our opinion was accurate, and to evaluate Extension’s relationship with agribusinesses in Iowa, we solicited feedback from a survey of representatives of the state’s agribusiness industry. In this article, we focus on the portion of the survey regarding frequency and quality of contacts and experiences with Extension, the type of information received and used by the industry, the perceived benefits resulting from use of this information, and identification of favored delivery methods.

Rapid changes are occurring within the agribusiness industry. One result of these changes is an increased offering of services other than chemical applications, notably those that constitute integrated crop management (ICM) (Walter and Holmberg 1993). ICM incorporates and expands IPM to include soil fertility, variety selection, crop rotations, tillage, timing of planting and harvesting, and other factors involved in crop production on a field-by-field basis. This site-specific approach to management in ICM programs has both environmental and economic benefits (Brown et al. 1994). Several recent agricultural initiatives of Iowa State University (ISU) Extension have been in the area of ICM. Therefore, we present our data analyses and discussion concerning how ISU Extension has benefited agribusiness in Iowa within the framework of ICM.

The Survey

During summer 1996, questionnaires were mailed to crop production and protection professionals who belonged to the Agribusiness Association of Iowa as well as to industry participants at ISU Extension-sponsored events. Of 1,500 questionnaires mailed, 1,434 were deliverable and 663 (46.2%) were returned. Of the 663 respondents, 556 (83.9%) indicated that they offered components of ICM to growers. Analyses of the information presented in this article are based on the information provided by these 556 respondents. On occasion, the sample size (n) is smaller because not all respondents answered all questions. Where appropriate, narrative comments to open-ended questions are provided in the text.

Services Offered and Demographics

Respondents (n = 556) indicated they offered several services that are essential elements of ICM including herbicide and insecticide recommendations (86%), weed and insect management (82%), and scouting (80%). Most also offered hybrid/variety selection and soil testing (73% and 70%, respectively). About half of the respondents also offered record keeping and manure recommendations (51% and 48% respectively).

We gathered demographics to characterize the types of agribusiness personnel surveyed. Of the most frequently identified positions held by respondents (n = 545), 40% were owners or managers, 28% were agronomists, and 18% were involved in sales. More than a third (37%) also farmed land they owned or rented. Nearly three of every five respondents (58%) had completed a college degree; the remaining respondents (42%) were split evenly between those completing high school and those with some college education. On average, the respondents had spent 17 days during the previous year on professional development activities. This information suggests that most survey participants were well qualified for helping growers make cropping decisions.
Value and Benefits of ISU Extension Information

The respondents were asked to reflect upon the preceding two years and comment about their experiences and contacts with ISU Extension relative to their work. For each of 18 items listed, more than half of the respondents indicated they received materials and information from ISU Extension (Table 1).

The ICM newsletter was the resource most valued by the respondents; 73% rated it 'very useful' to their work, and only 1% rated it 'not useful.' Published weekly during the growing season (April through September) and monthly from October through March, the newsletter features short articles devoted to seasonal problems related to entomology, agronomy, and plant pathology.

Two other sources of information rated 'very useful' by more than half of the respondents were the Field Extension Education Laboratory (FEEL) (52%) and the Winter Crop Production and Protection Conference (ICM conference) (54%). The FEEL is a two-day, hands-on field training program designed to teach accurate crop-problem diagnoses. Participants sharpen troubleshooting skills and evaluate management strategies through direct experience with actual crop problems. The ICM conference is a two-day, statewide conference focused on current topics. Nationally recognized experts address crop production, pest management, and environmental and social issues. In addition, participants choose eight workshop sessions from a menu of 40 available workshop topics. However, FEEL and the ICM conference serve a smaller percentage of the industry than other Extension products or courses; 51% of the respondents noted that they attended either one or the other of these events.

Most respondents felt that the information they received on general subject matter topics was 'very' or 'somewhat' useful (Table 1). Only 5 or fewer percent felt that the information concerning the following topics was 'not useful': herbicide products and weed control (2%), insecticide products and insect control (3%), fertilizer and nutrition (5%), weed management (5%), and IPM (5%). All of these topics are important aspects of ICM.

Respondents also were asked to review a list of names of Extension specialists in crop production and protection2 and characterize their awareness of or contact with one or more of the persons listed. Ninety-three percent of the respondents (n = 516) reported that they had read at least one article or media report in which one or more of these individuals were quoted. This high percentage was consistent with findings from a content analysis conducted on leading agricultural journals3 from 1995 through 1997 that revealed that Extension specialists were quoted widely and predominant sources of authoritative information (L. Järvinen, unpublished data). Eighty-nine percent of the respondents had attended a meeting in the preceding year at which Extension state and field specialists spoke, and 65% indicated they had had personal or telephone contact with an extension specialist.

The respondents then were asked how satisfied they were with the quality of the information they had received from the ISU staff with whom they had had contact. Of those responding (n = 516), almost all were 'very satisfied' (56%) or 'satisfied' (42%) with campus faculty and 'very satisfied' (48%) or 'satisfied' (46%) with Extension field specialists. The large percentages of respondents who had attended meetings at which ISU Extension staff spoke or who had had personal or telephone contact with ISU Extension staff suggest that people in agribusiness in Iowa rely considerably upon campus faculty and field specialists for information about ICM.

We also were interested in documenting economic and environmental impacts of ISU Extension information (Table 2). When asked about specific outcomes resulting from their contacts with Extension (n = 510), 77% of the respondents felt they served their customers better as a result of

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2Specialists with the following areas of expertise: weed, disease, crop, and insect management; soils and water quality; weather, soil, and water; agriculture engineering; soil fertility; pesticide applicator training; agriculture economics; tillage; and manure management.

3Journals included Wallace's Farmer, Soybean Digest, Successful Farming, and Farm Journal.
the contacts. In a follow-up question, 84% explained their answer by indicating that they were better informed and, therefore, able to make better recommendations. A multifirm agribusiness executive stated “ISU is our final crutch on a specific weed or insect problem.” A crop sales and application employee noted, “We are able to offer recommendations and back them up with ISU research information.”

Respondents were asked to estimate the economic value of Extension information to their business and their customers. Agribusiness professionals who indicated that ISU Extension had assisted them in serving their customers better were asked what effect their contacts with ISU had had on their farmer customers. The respondents estimated that 36% of their farmer customers had made suggested changes in crop protection and production practices (based on ISU Extension recommendations), and that these changes had saved the farmers approximately $14 per acre (Table 2). The respondents also noted the credibility of ISU Extension information with comments such as “Customers know we access ISU, which improves our confidence in our recommendations”; and “By passing on timely management answers which we relay from ISU and other university sources.”

Contact of agribusiness personnel with ISU Extension also had a positive impact on perceived business profitability (Table 2). Of those responding, 46% indicated that their firm’s profitability had increased due to contact with Extension. On average, the respondents estimated almost $12 more profit per acre serviced or managed. Finally, 61% of the respondents indicated that as a result of their contacts with ISU Extension, they were adopting or recommending practices that protect the environment better (Table 2). The respondents also indicated that nearly half (49%) of their customers adopted the recommended practices. When asked in an open-ended format what they were doing to protect the environment better, 81% responded. Among their statements were “IPM and ICM practices to determine specific insects and fields that need to be treated versus others that do not.” Our results were similar to findings from other states. For example, in a 1997 study of IPM adoption in New Jersey, 87.5% of the industry personnel surveyed indicated the Extension Service was one of the most important sources of pesticide application information for growers (Hamilton et al. 1997).

Respondents were asked to indicate whether or not ISU Extension information and programs were relevant and if ISU Extension addressed contemporary issues (Table 3). Findings (n = 532) were divided fairly evenly between a performance of ‘very well’ and ‘OK.’ Of those responding, 47% felt that Extension was doing ‘very well’ with programs that were up to date with agricultural management, and 45% indicated Extension was doing ‘very well’ with programs that were both up to date with technology and timely with information transfer. Fewer (38%) indicated that Extension was doing ‘very well’ with programs that were timely to changes in agriculture. This suggests that some agribusiness professionals believe that information from ISU Extension is not keeping pace with the dramatic changes sweeping agriculture. Consequently, these individuals may be obtaining information from other sources or making less than fully informed decisions.

Our results also show that agribusiness professionals continue to want a variety of educational delivery methods. Respondents (n = 527) indicated that their favored methods of receiving information (i.e., very high to high value on type of presentation method) were technical bulletins and written materials (73%), on-site demonstrations (69%), and personal contacts with experts (68%) (Table 4). Our results suggest that...
Implications of Our Survey Results for Extension

The future of Extension may be determined by its ability to document a significant return on investment for its county, state, and federally appropriated dollars. Our survey results show that agribusiness professionals can place a dollar value on educational programs that increase profitability of agribusinesses and producers. This type of information should enable us to establish our perceived economic value to agriculture. In addition, respondents revealed that contacts with ISU Extension effected adoption of environmental protection practices, a finding that should benefit all of society. Survey results also identified program areas where improvements are needed. Such information can be used by Extension to correct program deficiencies, improve marketing to selected audiences, and meet expectations of accountability. Feedback such as that described here can be done relatively inexpensively. Consequently, it is imperative that Extension allocate the modest resources needed to evaluate major educational programming efforts. In addition, Extension faculty and staff likely can collaborate with others in their respective systems to create effective evaluation instruments.

Our findings indicate that Iowa's agribusiness professionals have a continuing need for information about ICM, that ISU Extension is an important source for this information, and that the information is highly valued. As agribusinesses increase their offerings of ICM services (Walter and Holmberg 1993), opportunities for Extension to assist with educational programs also increase. The rapid changes occurring within the agricultural industry and the need for agribusinesses to offer services other than chemical applications demand continued and improvement of Extension's educational activities, offered through multiple delivery methods.

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