



June 2010
Volume 48 Number 3
Article Number 3RIB7

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Education Needs of Michigan Farmers

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Abstract: In 2008 MSU Extension evaluated their program to identify the major areas of educational need for Michigan farmers and agribusiness operators. Surveys were mailed to a stratified random sample from Michigan Agricultural Statistics Service records of dairy, livestock, swine, cash crops, fruit, vegetable, and nursery/greenhouse producers. Findings show that marketing of agricultural products and agrichemical use were continuing areas of educational need for Michigan farmers. Respondents also indicated need for more educational materials in the areas of farm management, production skills, environmental issues, sustainable agriculture, biotechnology, and small farm management.

Introduction

Michigan State University Extension (MSU Extension) continually seeks suggestions and feedback from its stakeholders about program quality and the current educational needs of its clientele. For this reason, MSU Extension initiated an issue identification process in 1993 to determine current and emerging local, regional, and statewide issues of greatest importance to the citizens of Michigan (Michigan State University Extension, 1993). Similarly, Extension Service providers elsewhere have also conducted various studies to assess client needs and evaluate the effectiveness of their programs (North Dakota State University, 1996; Meadowbrook & Fletcher, 1988; Warnock, 1992). Findings indicated significant familiarity and satisfaction with the organization among agricultural producers, the general population and businesses.

Agriculture is a force for economic stability in Michigan (MSU 2009; Ferris, 2000). Because of this importance, MSU Extension provides quality research and education programs in support of Michigan's agricultural community. These programs are run by area of expertise (AOE) teams, which connect field and campus staff members and stakeholders to create useful programming (Leholm, Hamm, Suvedi, Gray, I& Poston, 1998). As the needs of the stakeholders change, so do the programs run by the Extension Service (Radhakrishna, 1998). Research has shown that a needs assessment is a vital element in effective program

planning and implementation and also useful for evaluation (Fear, 1988; Krueger, Damme, Smith, Johnson, & Jarosak, 1994; Warner, Christenson, Dillman, & Slant, 1996). The purpose of a needs assessment is to determine the current situation within the study group and show how participants perceive the group's future (Carter & Beaulieu, 1992). In this context, a statewide needs assessment was conducted with the MSU Extension agriculture and natural resources clientele.

Study Objectives

Michigan State University Extension (MSU Extension) has made changes in the way it perceives itself, the services it provides and the way it delivers services to its clients. For example, MSU Extension realized the need to continue increasing the expertise of staff members at the county level to meet the ever-changing educational needs of our citizens and stakeholders (Suvedi, Lapinski & Campo, 2000). A statewide baseline and follow-up studies were conducted to assess educational needs of its clientele. The objective was to identify the major areas of educational need for Michigan farmers and agribusiness operators. Respondents were surveyed to assess perceptions of quality of programs offered by MSU Extension, ascertain educational needs of Michigan farmers and agribusiness operators, and solicit opinions on priorities for future MSU Extension educational programs.

Methods and Procedures

The study's population included cash crop, vegetable, fruit, nursery and greenhouse, beef, dairy, and swine farmers in Michigan. The mailing list of the Michigan Agricultural Statistics Service served as the sampling frame. A stratified random sample of farmers and agribusiness operators was drawn. The sample consisted of 1,548 individuals.

The study used a mail survey for the data collection. The survey instrument developed in 1996 by the senior author was updated after a careful review of current Extension programs. The draft instrument was examined by several MSU Extension staff members, who provided feedback upon which the instrument was revised. The survey instrument was developed to assess farmers' perspectives on MSU Extension agricultural and natural resources programs, and it included both closed- and open-ended questions.

Respondents were asked to indicate whether they had participated in Extension programs or received information from Extension. They were asked to rate the quality of these educational programs on a 1 to 5 Likert-type scale, with 1 representing poor quality and 5 representing excellent quality. An open-ended question was asked to solicit suggestions about how MSU Extension can improve its role in helping Michigan agricultural producers. Further, respondents were asked to list the major areas of educational need for Michigan farmers and agribusiness operators.

The survey instrument was mailed to the sample in March of 2008. One week after the first mailing, a follow-up letter was mailed to the sample population. Three weeks later, non-respondents were mailed a second follow-up letter with a replacement questionnaire. The survey had a response rate of 60%.

Data were analyzed using the SPSS. Descriptive statistics such as frequencies, percentage, mean, and standard deviation were used to analyze the data. Qualitative analysis was performed for open-ended questions. Whenever questionnaires contained incomplete items, they were treated as missing values and were not counted toward the sample statistics.

Results and Discussion

Respondents in the study came from most Michigan counties and represented a fair distribution of the agricultural population. They represented all of the major crop and livestock groups. Types of agribusinesses operated were broadly categorized as crop or livestock operations. Almost two-thirds of respondents with crop operations were cash crop growers. Of those respondents with livestock operations, the majority were beef producers, followed by dairy farmers.

Quality of Extension Programs

The respondents who had heard of MSU Extension and participated in programs offered by MSU Extension were asked to rate the quality of the programs and services they attended or received on a 1 to 5 scale, with 1 being poor, 3 being average, and 5 being excellent. Computation of the data showed that the timeliness of education or information provided was ranked good by more than half of the respondents and excellent by almost 20% of the respondents (Table 1). Likewise, over half of the respondents rated the research-based information provided as good, and about one-fifth indicated it was excellent. About half of the respondents (50.4%) indicated that they felt that Extension programs' relevance to local needs and problems was good, and almost one-fifth of the respondents rated it excellent.

Table 1.

Respondents' Rating of the Quality of the Educational Programs Offered by MSUE

Statements	Respondents' Rating of the Programs (percent)					Mean (S.D.)
	Poor	Fair	Average	Good	Excellent	
Education or information provided was timely.	1.7	6.1	18.2	54.0	20.1	3.83 (0.86)
Information was research-based	1.7	3.8	19.0	54.3	21.2	3.88 (0.85)
Programs were relevant to local needs/problems	3.0	4.5	22.6	50.4	19.5	3.78 (0.91)
Programs provided information not readily available elsewhere	2.3	7.9	26.8	45.2	17.8	3.66 (0.93)
Programs increased my knowledge and skills in farming/agribusiness	3.2	6.2	22.8	46.2	21.7	3.75 (0.98)
Programs helped me make positive changes in my farming/agribusiness practices	4.4	8.9	29.4	43.9	13.4	3.51 (1.00)
Overall rating						3.74 (0.76)

Similarly, almost half of the respondents (45.2%) indicated that they thought that the programs were good at providing information not readily available elsewhere, and almost one-fifth of the respondents indicated that they were excellent in this respect. Almost half of the respondents rated the programs good in terms of increasing their knowledge and skills in farming/agribusiness. Again, approximately one-fifth of the respondents rated them excellent in this respect. About 43% of the respondents indicated that they felt that the programs were good in helping them make positive changes in their farming/agribusiness practices, and 14% rated the programs excellent in this regard.

Mean and standard deviation and a composite rating of participants' overall ratings of the quality of MSU Extension programs were computed. The mean rating of program quality is 3.74 (st. dev. = 0.76). These findings indicate that MSU Extension educational programs are rated highly by Michigan farmers and agribusiness operators. Educational information provided was timely and research-based, and programs were relevant to the local needs. Farmers rely on MSUE programs for new knowledge, and they confirmed that the information helped them make positive changes in their farming or agribusiness operations. Overall, respondents rated the MSUE programs as "good."

Respondents were also asked to make specific suggestions for ways in which MSU Extension could improve its role in helping the agricultural community (Table 2). Respondents who provided suggestions indicated that they thought that MSU Extension should work more with farm management, especially on organic methods, land preservation, forest and woodlot management, and livestock issues. Respondents also suggested that field agents should be more available and knowledgeable, provide more business education, and increase promotion of MSU Extension programs.

Table 2.
Summary of Suggestions on Improving the Role of MSU Extension

Category	Frequency	Examples
Work more with farm management	30	"As an organic producer I would like to see a greater effort in this area." "Farmland preservation." "Better land management."
Agents should be more available and knowledgeable	25	"Agent should be available to help." "Field agents with research backgrounds."
Provide more business education	18	"Marketing of crops." "Finance education."
Promotion of MSU Extension programs	15	"I didn't even know we had these programs." "Reminders of what you have available information or extension agents."

Provide information on chemicals/fertilizers	13	"Research in herbicide and pesticide and fertilizers." "[Farm] with less herbicides and pesticides."
Programs and meetings should be more accessible	13	"Can meetings/workshops be held on weekends?" "Part-time farmers such as myself can't always attend meeting schedule during the week."
Education of the public	10	"Improve public understanding of agriculture." "Educate the public on problems of producers."
Work more with small farms	10	"Offer more assistance to small and 'hobby' type farms."
More information about new technology	7	"More information on switchgrass and biofuel."
Doing a good job	5	"You've done a great job."

Information about chemicals and fertilizers is another important area. Respondents also mentioned educating the public about farming and agriculture, working more with small farms, and providing more information about new technology. Five respondents commented that MSU Extension was doing a good job.

Educational Needs of Michigan Farmers

To ascertain educational needs of Michigan farmers and agribusiness operators, issues considered important and the major areas of educational needs for Michigan farmers and agribusiness operators were also solicited from respondents. Respondents were asked to give five areas in which they would like to see further education by MSU Extension (Table 3). Of all the respondents, 34.8% gave one answer, 20.1% gave two answers, 12.4% gave three answers, 6% gave four answers and 2.7% gave five answers.

Table 3.
Summary of Educational Needs Expressed by Respondents

Category	Frequency	Percent	Example of Educational Need
Business, bookkeeping and marketing skills	81	24.3	"Economic focus on world markets." "How to figure profitability in changing economy."

			"Profit/cost management." "Accounting"
Sustainable farming practices	31	9.3	"Increase emphasis on no-till farming." "Soil conservation is top priority." "Carbon footprint issues."
Management and care of livestock and animals	27	8.1	"Knowing how to care and feed animals efficiently." "Livestock disease prevention."
Chemicals and fertilizer	27	8.1	"Proper use of pesticides." "Risks with pesticides/herbicides."
Pests and diseases	24	7.2	"Diseases and pests in crops." "Environmentally friendly weed and insect control."
Crop production	23	6.9	"Increase crop yields." "Productivity issues--yield and effective irrigation."
Farm management	17	5.1	"How to handle dry spells." "Help keeping costs down in producing feed."
Laws and regulations	16	4.8	"Help with understanding and complying with new state and federal directives."
Biotechnology	14	4.2	"Biofuel for small/medium farmers." "Biofuel production."
New technology	12	3.6	"GPS-controlled systems." "More exposure to innovation."
Organic farming	11	3.3	"Producing organic products." "Promote organic style farming practices."
Water	10	3.0	"Education in water reuse and water conservation."

			"Methods [and] water management issues."
Labor relations and human resources	8	2.4	"[How to] train and educate your employees." "Managing human resources."
Environmental issues (general)	8	2.4	"Environmental issues" "How to keep good farm standards with little environmental impact."
Financing	7	2.1	"How to get Michigan and federal loans at the same rate the larger farmers seem only to get."
Testing	6	1.8	"More detailed and independent tests." "Soil analysis."
Waste management	6	1.8	"Manure management." "Care and disposal of toxic wastes."
Alternative farming practices	5	1.5	"Alternative feeds/feeding"
	333	100	

Educational needs in various aspects of business managementâ including marketing, bookkeeping, and accounting skillsâ were mentioned in 24.3% of all usable comments. This shows that Michigan farmers and agribusiness operators want to know more about the business aspects of their operations, such as cost/benefit analysis and keeping financial records. Along these same lines, respondents mentioned the need for education about laws and regulations pertaining to agriculture, farmland, agribusiness, and the environment.

Another important issue mentioned by respondents to both surveys was sustainable farming practices, mentioned in 9.3% of comments. Many respondents addressed the issue of the effects of agrichemical use on soil and groundwater as well as the need for information about pest control (i.e., insects and animals) and diseases. Respondents also emphasized the need for educational materials on sustainable agriculture, organic farming practices, and the management and care of livestock. Training in aspects of soil science, crop science, computer technology, farm management, and other farm operations were expressed as needs for better farm and agribusiness management.

Opinions on Priorities for Future MSU Extension Educational Programs

Michigan agricultural producers were given a list of five educational areas and were asked to rate, on a five-point scale (1 = low priority, 3 = medium priority and 5 = high priority), what priority they believed should be given to each in future MSU Extension educational programs. As shown in Table 4, building

leaders for today and tomorrow (mean = 4.1) and educating and supporting decision makers (mean = 4.0) were ranked as the top priorities for MSU Extension educational programming. Preparing for the expanding bioeconomy and promoting healthy lifestyles were also assigned a high priority.

Table 4.
Perceived Priorities for Future MSU Extension Programs

Statement	N	Low Priority (1)	2	Medium Priority (3)	4	High Priority (5)	Mean (S.D.)
Developing entrepreneurs	721	7.8%	5.5%	37.0%	26.5%	23.2%	3.5 (1.1)
Promoting healthy lifestyles	729	4.0%	5.9%	23.9%	25.8%	40.5%	3.9 (1.1)
Preparing for the expanding bioeconomy	723	4.8%	4.8%	24.2%	31.8%	34.3%	3.9 (1.1)
Educating and supporting decision makers	727	4.1%	4.4%	19.5%	30.5%	41.4%	4.0 (1.1)
Building leaders for today and tomorrow	731	4.1%	3.7%	17.5%	28.9%	45.8%	4.1 (1.1)

Additional analysis was conducted to determine if respondents differed in assigning priority ratings on the basis of their demographic characteristics. Findings of the t-test and correlation indicate that, in general, farmers and agribusiness operators considered all five new educational initiatives of MSU Extension to be fairly high priorities (Table 5). Part-time farmers and those who reported working at off-farm jobs indicated higher priorities for educational programs aimed at developing entrepreneurs. Developing entrepreneurs was rated higher by full-time nursery/greenhouse operators than by their part-time counterparts. Respondents with high annual gross sales and those in the high income group rated the need for educating and supporting decision makers more highly than those with low incomes.

Table 5.
Comparing Perceptions of Quality of Educational Extension Programs

Statements	Farming Status		Greenhouse/Nursery Status		Off-Farm Employment?		Income Group	
	Part-time	Full-time	Part-time	Full-time	Yes	No	Low	High
	Mean (sd)	Mean (sd)	Mean (sd)	Mean (sd)	Mean (sd)	Mean (sd)	Mean (sd)	Mean (sd)

Overall ratings of the quality of educational programs offered by MSUE	3.74 (0.725)	3.77 (0.72)	3.79 (0.64)	3.82 (0.58)	3.71 (0.73)*	3.79 (0.71)*	3.75 (0.74)	3.82 (0.65)
Perceptions about agricultural AOE teams	3.42 (0.39)*	3.50 (0.44)*	3.51 (0.43)	3.56 (0.36)	3.43 (4.14)*	3.48 (4.11)*	3.42 (0.40*)	3.58 (0.40*)
Perceived changes in the quality of Extension programs offered by MSUE	3.20 (0.55)	3.21 (0.64)	3.32 (0.54)	3.32 (0.72)	3.19 (0.58)	3.21 (0.61)	3.21 (0.57)	3.22 (0.65)
* Significant difference at 0.05 level								

Ranking of MSU Extension priorities was compared by the type of agribusiness. MSU Extension educational program priorities related to leadership were rated equally by all groups of livestock farmers. Dairy farmers rated the need to develop entrepreneurs low, and their priority rating was significantly different from those of swine and other (mixed-livestock) farmers. Swine farmers rated educational initiatives to prepare for the expanding bioeconomy low, and their rating was significantly lower than those of beef and other (mixed-livestock) farmers.

Cash crop growers rated all MSU Extension educational initiatives as high or very high priority. Building leaders for today and tomorrow, and educating and supporting decision makers were rated as very high priorities.

An attempt was made to examine the relationship or association between priority ranking and respondent characteristics such as age, level of education, and annual gross sales. Pearson's correlation showed an inverse relationship between priority ratings on developing entrepreneurs and age of respondents—older respondents rated Extension educational programs for developing entrepreneurs as a low priority. Similarly, an inverse relationship was noted between MSU Extension educational initiative priorities and square footage of nursery/landscape operators. The larger the square footage, the lower the ranking on MSU Extension educational priorities. However, a positive relationship was observed between educational level of respondents and educational priority ratings. The higher the level of formal education, the stronger the ratings on all five MSU Extension educational initiatives.

The level of gross annual sales of agricultural products was inversely related to respondents' rating on the need for promoting healthy lifestyles. On the other hand, gross annual sales showed a positive relationship with respondents' ratings on the need to educate and support decision makers and the need to build leaders of today and tomorrow (Table 5).

Conclusions

Findings of the 2008 survey show that farmers and agribusiness operators are very well aware of MSU Extension. Extension continues to offer a variety of educational programs and services to the Michigan agricultural community. Findings suggest that educational and informational needs of Michigan farmers and agribusinesses are changing. Overall, respondents said that the quality of MSU Extension programs was "very good." Areas of the highest quality were research-based information and the timeliness with which the education or information was provided.

Respondents indicated a need for more information about the business aspects of farming and agribusiness, including accounting, record keeping, cost/benefit analysis, marketing, and economics. Other needed areas of education included sustainable farming practices, management and care of livestock and animals, chemicals and fertilizers, and pests and diseases.

The majority of the farmers and agribusiness operators agreed with the priorities for MSU Extension programs. Building leaders for today and tomorrow, and educating and supporting decision makers were rated as high priorities for future MSU Extension programs by over two-fifths of the respondents. The level of gross annual sales showed a positive and significant relationship with respondents' ratings on these educational priorities.

References

- Carter, K. A., & Beaulieu, L. J. (1992). *Conducting a community needs assessment: Primary data collection techniques* (CD-27). Florida Cooperative Extension Service.
- Fear, F. A. (1988, February). *Community needs assessment: A crucial tool for adult educators*. Paper presented at the MAACE midwinter conference, Lansing, MI.
- Ferris, J. N. (2000). *An analysis of the importance of agriculture and the food sector to the Michigan economy* (Staff Paper No. 00-11). East Lansing: Michigan State University, Department of Agriculture Economics.
- Krueger, R., Damme, S., Smith, M. A., Johnson, C., & Jarosak, S. (1994). *Listening to MES Customers: A Plan for the Minnesota Extension Service to Listen to its Customers and Employees*. Minnesota Extension Service.
- Leholm, A., Hamm, L., Suvedi, M., Gray, I., & Poston, F. (1998, August). *Area of expertise teams: The Michigan approach to applied research and Extension*. Paper presented at the American Agricultural Economics Association annual meeting, Salt Lake City, UT.
- Meadowbrook, A., & Fletcher, R.L. (1988). It's worth the effort: Understanding our clients. *Journal of Extension* [On-line], 26(3) Article 3FEA5. Available at: <http://www.joe.org/joe/1988fall/a5.php>
- Michigan State University Extension. (1993). *Focus on Michigan's future: An issue identification process*. East Lansing, MI: Michigan State University.
- Michigan State University. (2009). MSU Report Shows 12 Percent Growth in Agri-Food Industry. Retrieved February 16, 2009 from: <http://news.msu.edu/index.php>.

North Dakota State University. (1996). *Internal and external assessment of the NDSU Extension Service*. Fargo: North Dakota State University Extension.

Radhakrishna, R. B. (1998, November). *Using needs assessment results to build evaluation capacity and practice*. Paper presented at the American Evaluation Association conference, Chicago, IL.

Schnitkey, G., Batte, M., Jones, E., & Botomogno, J. (1992). Information preferences of Ohio commercial farmers: Implications for Extension. *American Journal of Agricultural Economics* 74, 486-497.

Suvedi, M., Lapinski, M. K., & Campo, S. (2000). Farmers' perspectives of Michigan State University Extension: Trends and lessons from 1996 and 1999. *Journal of Extension* [On-line], 38 (1) Article 1FEA4. Available at: <http://www.joe.org/joe/2000february/a4.php>

Warner, P. D., Christenson, J. A., Dillman, D. A., & Salant, P. (1996). Public perception of Extension. *Journal of Extension* [On-line] 34(4) Article 4FEA1. Available at: <http://www.joe.org/joe/1996august/a1.php>

Warnock, P. (1992). Surveying client Satisfaction: Florida counties study their information services. *Journal of Extension* [On-line] 30(1) Article 1FEA1. Available at: <http://www.joe.org/joe/1992spring/a1.php>

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