

Educational Needs of Michigan Livestock Farmers

Bishwa B. Adhikari, Graduate Student

Murari Suvedi, Associate Professor

Michigan State University

East Lansing, MI 48824

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Abstract

Michigan State University Extension (MSUE) established area of expertise (AOE) teams to deliver Extension programs in Michigan more effectively, increase the expertise of its county-level staff members to meet the dynamic educational needs of its clients is an important element in the AOE system. The purpose of this paper is to investigate Michigan livestock farmers' educational needs.

A sample of Michigan farmers was surveyed in 1996 and 1999 with a standard mail survey. Responses from Michigan livestock farmers were isolated from the database for this study. The study revealed that general farm magazines, agricultural newspapers, Extension publications, printed materials from commercial firms and salespersons, and family and friends were primary sources of information. Electronic information media and organizational events were not popular. Livestock farmers believed that the MSUE agents had a broad perspective of the farming business, and they were not willing to pay private consultants to help manage their farm businesses. Information on topics such as business management, farm management, economics of farm operations, environmental protection and agricultural marketing were found as important areas of educational needs. This study indicates that livestock farmers who are 35 years or older and/or who do not have a college education should be the target group for effective educational programs.

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Introduction

The objective of the Cooperative Extension Service (CES) is to disseminate useful and practical information on subjects related to agriculture and home economics and to encourage their application (Simons, 1962). In the United States, the early agricultural colleges were formally given national sanctions with the establishment of the land-grant college system in 1862 (Leholm, Hamm, Suvedi, Gray and Poston, 1998). Michigan State University Extension (MSUE) has been dedicating and focusing its efforts to provide better services to its clients. Efforts have also been made to design and conduct educational programs and provide technical assistance focusing directly on these issues (Michigan State University Extension, 1993).

In 1994, Michigan State University realized a need to continue increasing the expertise of staff members at the county level to meet the changing educational needs of its stakeholders. Area of expertise teams (AOE teams) were established within MSUE to meet the educational needs of its clients. County Extension agents on these teams have specialized roles in specific commodities such as fruit, livestock, etc. (Suvedi, Campo and Lapinski, 1999).

Extension educators need to know farmers' educational needs and their information-seeking behaviors to create and deliver effective Extension programs. Livestock farmers may face problems similar to those of any other farmers, but one cannot generalize all the problems and issues. This paper attempts to identify educational needs specific to livestock farmers and the delivery methods they prefer.

Objectives

Michigan State University Extension has been refocusing its efforts to improve the quality of its services to meet the changing educational needs of its clients. To have a better understanding of the extent to which educational needs of farmers are being met, surveys were conducted in 1996 and 1999. One part of those surveys targeted the information-seeking patterns and educational needs of Michigan livestock farmers. The specific objectives of this study were:

1. To determine the types of Extension education programs utilized by Michigan livestock farmers.
2. To review important sources of information used by Michigan livestock farmers.
3. To find out what educational needs are specific to Michigan livestock farmers.
4. To identify trends in education and communication needs between 1996 and 1999.

Methodology

A stratified random sample of 1,534 farmers and agribusiness operators in 1996 was surveyed. The survey went to 1,569 persons in 1999. The list of survey recipients was obtained from the Michigan Agricultural Statistics Service. This research utilized the standard mail survey technique to obtain data. The survey instrument was developed and field tested. It contained both open and closed-ended questions. Data were gathered using the total design method suggested by Salant and Dillman (1994). Detailed methods are described in “Farmers Perspective on Michigan State University Extension: 1996 to 1999” by Suvedi, Campo and Lapinski, 1999. Data on livestock farmers were taken from the entire data set and analyzed using SPSS statistical software.

Results and Discussion

Participation in MSUE programs

More than 90 percent of Michigan livestock farmers indicated that they were familiar with Michigan State University Extension programs and services. Respondents who were familiar with MSUE were further asked about the nature of their participation in Extension programs. Most of the respondents received county Extension newsletters (92.5 percent in 1996 and 88 percent in 1999). Mass media sources, Extension specialists and Ag Expo were common sources of information for the majority of farmers though a decreasing trend was observed in the use of these sources of information. Use of the World Wide Web has increased. Only one percent of livestock farmers accessed the World Wide Web in 1996, and the number had increased to 7.9 percent in 1999. Electronic mail information and use of Extension-developed software are not popular among the farmers yet. Extension-produced videotapes were used by 10.3 percent of farmers in 1996 and 6.3 percent in 1999. These findings indicate that use of the World Wide Web to receive Extension information increased between 1996 and 1999. If this trend continues, electronic sources could be an increasingly important channel for clients to access Extension information (Appendix 4).

Rating of MSUE programs

Respondents were asked to rate the quality of the MSUE programs they attended on a scale of 1 (poor) to 5 (excellent). Most of the programs received high ratings--either good or excellent. Respondents liked the programs for their timeliness, relevance to local needs and helpfulness in increasing skills/knowledge in farming. When asked to rate

whether the Extension programs helped to make positive changes in farming and agribusiness practices, 33.7 percent of livestock farmers rated them as “average”, 41.8 percent “good” and 11.2 percent “excellent.” Almost half (47 percent) of respondents felt that the programs were good in providing information not readily available elsewhere, and 15.7 percent of respondents thought the programs were excellent in this aspect (Table 1).

Table 1. Livestock farmers’ ratings of educational programs (1996 and 1999).

Statements	Response (%) (N=357 in 1996; 340 in 1999)					Mean rating
	Poor	Fair	Average	Good	Excellent	
Education or information was timely.	1.8	5.2	19	56.8	17.2	3.82
Programs were relevant to local needs.	2.2	7.2	24.8	49.4	16.4	3.71
Programs increased skills/knowledge.	1.9	7.2	21.5	53.3	16.1	3.75
Programs provided information not readily available elsewhere.	2.8	9.2	25.3	47.0	15.7	3.64
Programs helped me make positive changes in my farming/agribusiness practices.	3.7	10.2	33.8	41.1	11.2	3.46

The mean rating of livestock farmers for each statement shows that the farmers had a positive attitude toward MSU Extension programs. Almost all the statements in Table 1 had mean scores of 3.46 and above. These results imply that the livestock farmers value educational programs of MSU Extension.

Reactions to statements about MSUE programs

Several statements about MSUE educational programs, Extension agents and AOE teams were included in the survey to get respondents’ opinions on a scale of 1 (strongly disagree) to 5 (strongly agree). Most livestock farmers either “agreed” or “strongly agreed” with statements such as “MSU offers valuable Extension programs,”

“Extension agents possess a broad perspective of farming/business” and “MSUE provides assistance to today’s complex farming issues.” Although respondents had a positive attitude toward the Extension programs, its agents and specialists, it is interesting to note that they offered “no opinion” in response to some of the important statements.

Table 2. Usefulness of MSUE educational programs to Michigan livestock farmers.

Statements	Response (%) (N=357 in 1996; 340 in 1999)					Mean rating
	Strongly disagree	Disagree	No opinion	Agree	Strongly agree	
MSUE offers valuable Extension programs.	0.6	1.3	14.2	60.7	23.1	4.04
MSUE Provides assistance on complex farming issues.	2.0	7.9	37.5	47.5	5.1	3.67
MSUE agents have technical skills to serve the needs of farmers/business.	1.7	6.4	25.1	59.5	7.3	3.64
MSUE Agents possess a broad perspective of the farming business.	1.8	6.7	28.0	58.4	5.1	3.64
Programs offered by MSUE meet business need.	1.8	9.8	33.1	49.5	5.9	3.48
Farmers better served by ext. today than 2 yrs ago.	1.8	9.5	50.3	32.8	5.6	3.31
Go to private consultants to get information on complex farming issues.	5.1	19.9	30.7	36.8	7.6	3.22
Willing to pay private consultant for a help to manage farm.	19.3	33.0	29.9	14.2	3.6	2.50

For example, about 50 percent of livestock farmers had no opinion on the statement “Michigan farmers and agribusiness are better served by Extension today than two years ago.” Sometimes farmers (about 45 percent) seek information about complex farming issues from private consultants. When asked if they would be willing to pay a private consultant to help them to manage their farm business, the majority of livestock farmers

did not agree; about 18 percent were willing to pay for the services (Table 2). The relative proportion of respondents who are willing to pay decreased from about 20 percent in 1996 to about 14 percent in 1999.

The statement “MSU offers valuable Extension programs” has a mean of 4.04. This finding implies that most respondents agree or strongly agree that MSU Extension programs are high quality.

Important sources of information of Michigan livestock farmers

The important sources of information for Michigan livestock farmers are listed in Table 3. Farmers obtained useful information mostly from general farm magazines, farm suppliers/dealers, families/friends and neighbors, specialized farm magazines, Extension publications, and agricultural newspapers. Mass media such as general TV and radio news, TV farm programs, radio farm programs and the Internet are seldom used as information sources. The popularity of the Internet is increasing, however. Similarly, ANR Week/Ag Expo, and farm business consultants are not popular sources of information. More than 75 percent of livestock farmers do not use DTN/Farm Dayta services at all.

Table 3. Sources of information that the livestock farmers used (1996,1999).

Information Source	Response (%)					Mean rating
	Not at all	A little	Some	Fair	Great	
General farm magazines	7.7	9.0	24.4	41.2	17.6	3.52
Farm suppliers/dealers	6.9	14.7	31.	35.4	11.1	3.29
Family/friends, neighbors	4.6	15.4	38.6	31.1	10.3	3.27
Specialized farm magazines	21.3	7.7	22.3	30.0	18.6	3.17
Extension publications	10.5	15.5	34.9	31.1	8.0	3.11
Agricultural newspapers	14.0	14.2	31.1	28.5	12.2	3.11
Prints from commer. firms	8.8	22.3	34.4	26.4	8.0	3.03
Daily/weekly newspapers	11.3	24.9	28.9	25.4	9.5	2.97
Farm org. newsletters	14.4	18.5	35.7	24.3	7.1	2.91
ANR week/Ag Expo	35.5	17.9	23.1	17.6	6.0	2.41
Exp. Station publications	31.5	23.5	26.1	15.3	3.6	2.36
Farm/business consultants	44.5	15.1	19.9	16.4	4.0	2.20
DTN Farm Dayta services	75.3	10.5	5.8	4.9	3.5	1.51

Educational needs and suggestions for improvements

Respondents were asked to list the topics/areas of their educational needs and their specific suggestions so that MSUE can improve its role in helping Michigan livestock producers. A list of topics that MSUE should consider and respondents' suggestions to improve the role of Extension programs are given in Table 4. To better understand the needs of specific groups of livestock producers, these needs were compared with selected demographic characteristics including age group, educational level and annual gross farm sales. These responses were obtained from open-ended

questions, and not all respondents listed their educational needs, so the list of educational needs was long with low frequency counts.

Findings indicated that business management, general farm management, livestock management, sustainable agriculture and environmental concerns, chemical science and the economics of farm operations are some of the important subject matter areas that farmers wanted to see included in MSU Extension programs.

Cross tabulating educational needs by age group, educational level and value of annual gross farm sales gives a clear message about the demographic characteristics of farmers and their needs. Most of the respondents who expressed educational needs in Table 4 are 35 to 54 years old with a high school education or less, and their annual value of gross farm sales ranges from \$50,000 to \$250,000. In general, the younger the farmers, the lower the tendency to express educational needs. While interpreting this result, one should consider the fact that the majority of livestock farmers fall between 35 and 54 years of age (see Appendix 3). Similarly the majority of livestock farmers (55.4 percent) never attended college, and the majority of them indicated these educational needs. As suggested by Radhakrishna and Thompson (1996), Extension specialists who develop educational materials and programs should consider such demographic characteristics of their clients.

Findings in Table 4 also reveal that most of the needs identified in the 1996 survey were still needs in 1999-- general business management, farm management, sustainable agriculture and environmental concerns, chemical science and the economics of farm operations were mentioned in both surveys. Actually, the number of farmers reporting these needs increased during the three-year period (Table 4). Marketing, land

management, need for more experienced Extension agents and attention to small farmers were mentioned more frequently in 1999 than in 1996. Business management, sustainable agriculture practices and environmental concerns, livestock management, new technology research, manure handling and control, and economics of farm operations were mentioned less frequently in 1999

Table 4. Educational needs of livestock farmers by age group and educational level.

Educational needs		Age group (year)			Education level			Gross farm sales in \$ 1,000				
	Year	<35	35-54	>55	< HS	Coll.	Grad	<10	10-50	50-250	>250	Total
More info. pertaining to specific topics	1996	1	14	6	16	2	3	5	4	8	3	21
	1999	4	15	12	17	8	6	6	7	11	6	31
Business management	1996	2	7	3	10	1	1	0	2	7	3	12
	1999	1	6	8	8	4	3	2	2	7	4	15
Farm land management	1996	0	3	1	3	1	0	1	1	1	1	4
	1999	0	6	2	5	3	0	3	1	3	1	8
General farm management	1996	1	11	6	13	3	2	3	4	6	5	18
	1999	3	14	9	13	11	2	2	6	11	6	26
Livestock management	1996	1	14	2	14	3	0	4	3	8	2	17
	1999	1	10	3	10	4	0	3	3	4	3	14
Sustainable practices/ environmental concern	1996	2	8	5	11	2	2	5	3	5	2	15
	1999	2	8	5	8	3	4	5	4	3	3	15
Economics of farm operation	1996	0	9	4	10	2	1	3	2	6	1	13
	1999	0	11	4	5	7	3	6	4	3	2	15
Chemical science	1996	1	9	5	12	3	0	4	0	7	4	15
	1999	1	6	3	8	2	0	2	1	5	2	10
More experienced and involved ag agents	1996	1	4	1	4	2	0	1	0	3	2	6
	1999	0	10	5	12	3	0	3	4	4	3	15
Small farmers don't feel Ext. is interested in them	1996	1	2	0	2	0	1	2	0	1	0	3
	1999	1	5	6	7	2	3	5	2	3	1	12
Agricultural marketing	1996	0	8	4	10	2	0	3	0	3	6	12
	1999	3	15	5	13	7	3	3	9	7	4	23

Summary and conclusion

Extension educational programs can sometimes be very expensive. So it is extremely important to design programs to meet the needs of the targeted population. To understand the extent to which the educational needs of farmers are being met, surveys were conducted in 1996 and 1999. Part of these surveys was utilized to study Michigan livestock farmers' educational needs and their information-seeking patterns.

Findings of this research suggest that more than 90 percent of Michigan livestock farmers are familiar with MSUE programs. County extension newsletters and other mass media are most important sources of information though their popularity decreased somewhat between 1996 and 1999. More than 50 percent of livestock farmers contacted MSUE specialists to deal with their farming-related issues. Use of electronic resources is not common, but the proportion of farmers using the Web to access information has increased in recent years.

Livestock farmers give high value to MSUE programs, and they believe that educational programs are informative and timely and increase their skills. However, more than 50 percent of farmers offered "no opinion" on some of the important issues such as whether they are better served by Extension today than two years ago. General farm magazines, farm suppliers/dealers, family/friends, specialized farm magazines and Extension publications are important sources of information for livestock farmers. More than 75 percent of livestock farmers don't use DTN services.

Business management, general farm management, sustainable agriculture and environmental concerns, chemical science and the economics of farm operations are some of the areas that farmers want to be addressed by MSUE programs. The analysis of

demographic characteristics of respondents suggested that older farmers tend to have more educational needs. Most livestock farmers fall between 35 and 54 years of age, and the majority of them who expressed these needs have less than a college education. Findings from this study also show that needs identified in the 1996 survey were still needs in 1999. Needs for marketing and land management were expressed more frequently in 1999 than in 1996. Livestock management, new technology research, manure handling and economics of farm operations were mentioned less frequently in 1999.

The study utilized open-ended questions to find out the educational needs of farmers (farmers were asked to list their needs and suggestions). We should be careful in interpreting results from such open-ended response. Sometimes, for instance respondents do not remember to list certain needs even though these are important in their farm business. Needs identified in this study should be validated by other means or should be included in future survey instruments for further analysis.

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Appendix 1. Annual gross sales of farm products, 1996 and 1999.

Annual gross sale (\$)	Livestock farmers (%)	
	1996 (N=357)	1999 (N=340)
Less than 2,500	7.2	14
2,500-4,999	6.3	7.1
5,000-9,999	9	11
10,000-24,999	15.4	14.6
25,000-49,999	13.3	11.7
50,000-99,999	13.9	11.7
100,000-249,999	20.5	15.3
250,000-499,999	9.3	7.8
500,000 or more	5.1	6.8

Appendix 2. Highest level of education of respondents.

Level of education	Livestock farmers (%)	
	1996 (N=357)	1999 (N=340)
Less than high school	-	3
Some high school	11	6.9
High school diploma	44.4	44.2
Some college	18.2	16.1
Trade school certification	7.5	6
Two year college degree	7.5	8.4
Four year college degree	4.6	6.9
Some graduate work	3.7	2.7
Graduate degree	3.2	6

Appendix 3. Respondents by age.

Age group	Livestock farmers (%)	
	1996 (N=357)	1999 (N=340)
25 years and younger	0.6	0.3
26-34 years	8.7	6.0
35-44 years	22.3	20.2
45-54 years	26.8	31.5
55-64 years	24.8	25.6
65 years or older	16.9	16.4

Appendix 4. Participation in MSU Extension programs by respondents.

Participation in Extension programs	Livestock farmers (%)	
	1996 (N=357)	1999 (N=340)
Heard of MSU Extension	90.7	93.3
Received county Ext. newsletters	92.5	88.0
Gained info from the mass media	70	64.1
Had contact with an MSUE specialist	56.8	53.7
Participated in Ag. Exp. or ANR Week	50.6	44.2
Participated in field days	37.1	33.6
Received electronic mail information	9	9.3
Received information from Web	1.0	7.9
Used Extension-developed software	7.7	6.6
Used Extension-produced videotape	10.3	6.3