

12-1-2007

Organic Farmers' Need for and Attitude Towards Extension

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Recommended Citation

Agunga, R., & Igodan, C. (2007). Organic Farmers' Need for and Attitude Towards Extension. *The Journal of Extension*, 45(6), Article 8. <https://tigerprints.clemson.edu/joe/vol45/iss6/8>

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Organic Farmers' Need for and Attitude Towards Extension

Abstract

The study reported here sought to determine sustainable agriculture farmers' perceived attitude towards Extension. A random sample of 99 sustainable agriculture farmers in Ohio showed a highly favorable attitude towards Extension and an expression of a great need for Extension information, particularly on environmental issues. However, the study also found that the vast majority of sustainable agriculture farmers do not feel that Extension educators neither understand the needs of sustainable agriculture farmers nor have the know-how to assist them. Thus, the researchers recommend an examination of Extension educators' need for sustainable agriculture training.

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Introduction

Agricultural Extension has been pivotal in transforming U.S. agriculture into the breadbasket of the world (Boone, 1985). However, the role of Extension in the sustainable agriculture movement is less clear. For example, Beus and Dunlap (1992) contended that proponents of the alternative farming movement accused land-grant university researchers, and by implication, their Extension systems, of being wedded to conventional farming.

Indeed, when sustainable agriculture emerged in the early 1980s, many Extension educators doubted its viability, branding it "Third World agriculture" that stood little chance of catching on (Agunga, 1995). Nearly two decades since the emergence of sustainable agriculture, the study reported here sought to determine if the apparent misapprehension between Extension educators and sustainable agriculture farmers persisted. The researchers sought to determine the perceived attitude of sustainable agriculture farmers towards Extension agents.

Background and Definition of Terms

This article reports the results of part of a larger study on the philosophy and practice of sustainable agriculture in Ohio that sought to understand why farmers enter the sustainable farming industry, the characteristics of these farmers, and why they think consumers are attracted to sustainable agriculture produce. The goal was to create a profile of Ohio sustainable agriculture farmers, including their need for and attitude towards Extension. This article focuses on this last research objective.

Sustainable or alternative agriculture is the overall effort to preserve and prolong the use of the earth's resources by reducing the human toll on the ecosystem, particularly, the use of agricultural chemicals (Diver, 2006; Conford, 2001). The term "certified organic" was introduced in 1995 by the United States Department of Agriculture (USDA) in response to complaints that the term "organic" was being abused by unqualified producers (*The Organic Foods Production Act, 1995*). "Grass-based" farming refers to organic or certified organic dairy or livestock production systems where cattle are fed exclusively on grass (Ekarius, 1999).

In general, the distinction between sustainable and organic is not as clear-cut, especially when one throws in terms like "ideal organic," "industrial organic," and "local" food sources. Therefore, we view sustainable and organic agriculture as interchangeable terms.

Purpose and Objectives

The main purpose of the study was to examine sustainable agriculture farmers' perceived attitude towards Extension. The specific research objectives were:

1. To identify the characteristics of sustainable agriculture farmers; and

2. To examine sustainable agriculture farmers' perceived attitude towards Extension.

Methodology

The population for the study comprised Ohio agriculture producers who were members of the Innovative Farmers of Ohio (IFO) and/or the Ohio Ecological Food and Farm Association (OEFFA), the two main sustainable agriculture organizations in Ohio. The IFO had a membership of 129 (*IFO Directory*, June 2005), and the questionnaire, after pilot testing, was inserted in the organization's December 2005 mailing to members. This yielded 66 responses, or a response rate of 51.2%.

Next, a random sample of 100 out of 250 OEFFA registered sustainable agriculture farmers was drawn and questionnaires mailed to them, which had a response rate of 33%. Thus, a total of 99 farmers responded to the study, with a 42% response rate. The results describe the survey respondents, that is, members of the IFO and OEFFA. It cannot be extended to represent the characteristics of all sustainable farmers in Ohio because the survey was not based on a random selection of sustainable farmers in Ohio.

Likert type questions on a six-point-scale were used to measure sustainable agriculture farmers' perceptions of Extension. A four-point Likert type scale was also used to determine constraints faced by sustainable agriculture farmers. The internal consistency of the instrument was measured using Cronbach's alpha, which yielded a reliability of .86 for sustainable agriculture farmers' perception of Extension (12 items) and .97 for constraints Ohio sustainable agriculture farmers face (23 items). These scores far exceeded the minimum of 0.50 suggested by Nunnally (1967), thus establishing the reliability of the instrument. Content validity was assessed using a panel of experts and data analysis was done using the *Statistical Package for the Social Sciences* (SPSS, 2005). Descriptive statistics, such as frequencies, percentages, means, and standard deviations were used to summarize the data.

Findings

The findings cover the two main objectives of the study, namely: a) to identify the characteristics of sustainable agriculture farmers; and b) to examine sustainable agriculture farmers' perceived attitude towards Extension.

Objective 1: Demographic Characteristics of Ohio Sustainable Agriculture Farmers

Five main demographic characteristics were investigated. They are: type of farming system, farm incomes, farm size, education, and diversity.

Types of Sustainable Agriculture Farmers

In a closed-ended question, we asked farmers to indicate the type of farming they were engaged in. Table 1 shows the results. Fifty-two respondents, or 52.5%, were certified organic, 35 were organic, 41 sustainable, 34 grass-based, and 9 transitional farmers. Only 14 were conventional farmers. Since these conventional farmers were members of the IFO or OEFFA or both, it implies that they were favorable to the sustainable agriculture concept or practiced aspect of it. The findings support our contention that the term "sustainable agriculture" covers a wide range of farmers, from those who practice strict, certified organic to conventional farmers who may be cutting back on their use of pesticides.

Table 1.

Types of Farming Systems Practiced by Ohio Sustainable Agriculture Farmers*

Type of Farming Practice	Number of Farmers	Percent
Certified organic	52	52.5%
Organic	35	35.4%
Sustainable	41	41.4%
Grass-based	34	34.3%
Conventional	14	14.1%
Transitional	9	9.1%
* Number exceeds 99 as respondents could check more than one category.		

Education

The Ohio sustainable agriculture farmers in the study were highly educated. Of the 99 respondents, 9 (9.1%) had doctorate degrees, 15 (15.2%) had master's degrees, 28 (28.3%) had bachelor's degrees, 20 (20.2%) had some college experience, 13 (13.1%) had high school education, and only 2 (2.0%) had no formal education. Twelve (12.1%) did not respond to this question. In essence, about 56% of the population had at least a bachelor's degree, compared to 16% of the general rural population (Gibbs, 2005).

Farm Incomes

The farm incomes of respondents varied widely, from \$15,000 or less per year to over \$200,000. About 45% of the respondents had farm incomes of \$15,000 or less; 15.2% had farm incomes between \$16,000 and \$30,000; another 15% had farm incomes ranging from \$31,000 to \$100,000; and 13% had farm incomes between \$101,000 and \$200,000. Only 7% had farm incomes more than \$200,000. Therefore, based on farm income alone, the sustainable agriculture farmers studied fall within the USDA's classification of small farmers, that is, those with annual gross farm incomes of \$250,000 or less.

Farm Size

In terms of farm size, the USDA definition of a small farm is one with 50 acres or less (*Sustainable Agriculture Network, 2004*). Sixteen percent of the sustainable agriculture farmers participating in the study had five acres or less. Twenty-one percent had 11 to 50 acres, and a commanding

majority, 55.6%, had farm sizes over 50 acres.

Diversity

How ethnically diverse is the sustainable agriculture population under study? Of those studied, the overwhelming majority, 88.9%, were White (non-Hispanic). Other ethnic members represented were: Native Americans, 3.2%, and African-Americans, 1.1%. The remaining 7.4% of the study population did not respond to this question. Based on ethnicity, Ohio's sustainable agriculture farmers are not diverse. The USDA notes that sustainable agriculture farmers tend to be more ethnically diverse, that is, comprised of American Indians/Alaska Natives, Asians, Blacks or African Americans, Ethnic Europeans, Hispanic or Latino Origin, and much more (Sustainable Agriculture Network (2004). Therefore, the group of Ohio sustainable agriculture farmers studied is somewhat atypical of the U.S. sustainable agriculture population.

Objective 2: Sustainable Agriculture Farmers' Perceived Attitude Toward Extension

As noted in the introduction, alternative agriculture proponents, in the 1980s and early 1990s, accused Extension of being wedded to conventional agriculture. Therefore, we sought to determine whether this animosity still existed a decade or more later. Table 2 shows that sustainable agriculture farmers have a strong interest in Extension. Of the 99 respondents, 72, or 72.8%, expressed interest in Extension information on production methods; almost 68% of respondents expressed interest in Extension information on the environment; and 57.6% of them expressed interest in participating in the planning of Extension programs.

However, the vast majority felt that Extension educators do not know enough about organic agriculture to help them or understand the needs of sustainable agriculture farmers. Only about 30% of respondents felt Extension educators know enough about sustainable agriculture to help them and understand what organic farmers need. This is in line with Thilmany (2006), who recommends increasing the training of Extension educators in this area.

Table 2.
Sustainable Agriculture Farmers' Attitude Towards Extension*

Perceptions of Extension	Response	
	No.	%
I want Extension information on production methods.	72	72.8%
Extension information on the environment is useful to me.	66	66.7%
I am willing to pay for Extension services that meet my needs.	61	61.6%
I like to be involved in planning Extension programs.	57	57.6%
I generally adopt Extension recommendations.	51	51.5%
Extension educators know enough about organic agriculture to help me.	29	29.2%
Extension educators understand what sustainable agriculture farmers need.	28	29.3%
*[Percentages do not add up to 100]		

A related objective was to determine how sustainable agriculture farmers obtain information on new farming practices. Table 3 shows that the main source of information for sustainable agriculture farmers was other farmers, mentioned by almost 87% of respondents; followed by the Ohio Ecological Food and Farm Association (OEFFA) organization, mentioned by almost 80 % of respondents. Farm tours, conferences, and the Innovative Farmers of Ohio (IFO) also featured prominently as sources of sustainable agriculture information. However, Extension educators, commercial seed, fertilizer and equipment dealers, and the Ohio Farm Bureau did not feature prominently as primary sources of information for sustainable agriculture farmers.

Table 3.
Sustainable Agriculture Farmers' Sources of Information

Source	No. Respondents	Percent
Other sustainable agriculture farmers.	86	86.9%
Ohio Ecological Food and Farm Association (OEFFA).	79	79.8%
Organic farming conferences.	73	73.7%
Organic farm tours	70	70.5%
Innovative Farmers of Ohio (IFO).	68	68.7%
Ohio Agricultural Research & Development Center (OARDC).	38	38.4%
Sustainable agricultural seed and equipment dealers.	35	35.4%
Organic Crop Improvement Association (OCIA).	28	28.3%
Farmers in other countries.	24	24.5%
The Ohio State University Faculty (Non-Extension faculty).	18	18.2%
County Extension Educators.	16	16.2%
Commercial seed, fertilizer, and equipment dealers.	8	8.1%
Ohio Farm Bureau.	3	3.0%

The study examined farm-related problems of sustainable agriculture farmers, as shown in Table 4. The main ones included navigating government bureaucracies, time, marketing, and management in the 1980s and early 1990s, skills, access to information, and media relations. These reveal opportunities for Extension educators to intervene.

Table 4.
Problems Sustainable Agriculture Farmers Face

Problem	No. Respondents	Percent
Paperwork/Bureaucratic red-tape.	73	73.8%
Time constraints.	68	68.7%
Marketing challenges/Low farm prices.	64	64.7%
Organic certification.	51	51.5%
Lack of farm management skills	45	45.5%
Access to information.	44	44.5%
Media relations.	42	42.4%
Access to Extension educators.	39	39.4%
Peer support.	39	39.4%
Low level of operator education	30	30.3%
Computer skills	30	30.3%
Customer relations.	29	29.3%

Correlations on Sustainable Agriculture Farmers' Perceived Attitude Towards Extension

Correlations were run between selected Extension variables (Table 5). Based on Davis' (1971) conventions for describing magnitude of relationships, a significant, positive, very strong relationship was found between sustainable agriculture farmers' use of Extension and their belief that Extension educators know enough about organic agriculture to help them (Pearson $r = .796$, $p = < .01$, $n=86$). Also, significant, positive, substantial associations were found between sustainable farmers' adoption of Extension messages and the statement that other farmers are a strong information source for them (Pearson $r = .641$, $p = < .01$, $n=94$); their feeling that Extension information on the environment is useful to me (Pearson $r = .556$, $p = < .01$, $n=85$); and the contention that they like to be involved in planning Extension programs for sustainable agriculture farmers (Pearson $r = .524$, $p = < .01$, $n=80$).

Table 5.
Correlations of Sustainable Agricultural Farmers' Attitude Towards and Need for Extension

	Extension educators understand what sustainable ag farmers need.	Extension information on the environment is useful to me.	I want Extension information on production methods.	I like to be involved in planning Extension programs for organic farmers.	I like to share my on-farm experience with other farmers.	Extension educators know enough about organic ag to help me.	I am willing to pay to pay for Extension services that meet my needs.	I like to learn from other farmers.	I am usually the first in this community to try new practices.	I usually wait to see the benefits of a new practice before trying it.	Other farmers are a strong information source to me.
1. Extension educators understand what sust. Ag farmers need	1.00	.556**	.333**	.084	-.107	.796**	.171	-.151	.059	.059	-.144
2. Extension information on the envi. is useful to me.		1.00	.485**	.289*	.022	.479**	.271*	.122	.067	.113	.107
3. I want Extension information on production methods.			1.00	.524**	.282*	.393**	.341**	.135	.187	.065	.006
4. I like to be involved in planning Extension programs for organic farmers.				1.00	.321*	.143	.264*	.155	.187	-.029	.200
5. I like to share my experience with other					1.00	-.029	-.033	.517**	.382**	-.153	.451**

farmers.												
6. Extension educators know enough about sustainable agriculture to help me.						1.00	.236*	-.165	-.001	-.051	-.049	
7. I am willing to pay for Extension services that meet my needs.							1.00	.035	-.046	.178	.061	
8. I like to learn from other farmers.								1.00	.363**	-.134	.641**	
9. I am usually first in my Comm. to try new practices.									1.00	-.432**	.091	
10. I usually wait to see the benefits before trying it										1.00	.039	
11. Other farmers are a strong information source to me.											1.00	
* p < 0.05 (two-tailed)												
** p < 0.001 (two-tailed)												

There was a significant, positive, moderate association between "I want Extension information on production methods" and "I generally adopt Extension recommendations" (Pearson $r = .415$, $p = < .01$, $n=85$) and significant, positive, moderate association between "I am willing to pay for Extension services that meet my needs" and "I generally adopt Extension recommendations" (Pearson $r = .398$, $p = < .01$, $n=85$). Finally, there was a significant, negative, moderate association between "I am usually the first in this community to try new practices" and "I usually wait to see the benefits of a new practice before trying it" (Pearson $r = .432$, $p = < .01$, $n=85$). This last finding shows that sustainable agriculture farmers are, indeed, innovators who often pride themselves of being the first in their communities to try new practices.

Discussion, Conclusions, and Recommendations

The study reported here set out to examine Ohio sustainable agriculture farmers' perceived need for and attitude towards Extension. Contrary to Beus and Dunlap's (1992) contention that land-grant university researchers, and by implication, their Extension systems, might be wedded to conventional farming, we found no animosity for Extension by sustainable agriculture farmers. Furthermore, the claim that Extension educators branded sustainable farming as "Third World agriculture," made in the late 1980s, does not seem true anymore.

Although, as shown in Table 2, only about a third of respondents indicated that Extension educators know enough about sustainable agriculture to help them, the correlation analysis showed a very strong to substantial associations between variables associated with farmers' attitude towards and need for Extension. For example, a significant, positive, very strong relationship, Pearson $r (.796, p = < .01)$ between "Extension educators know enough about sustainable agriculture to help me" and "Extension educators understand what sustainable agriculture farmers need."

In spite of the strong support for Extension, however, contention by about a third of respondents that Extension educators probably know little about organic agriculture to help them deserves attention. Thilmany (2006) recommends increased "training for Extension agents and specialists so that they can become recognized as useful sources of organic production information" (p. 7).

Perhaps, a key finding of the study is that sustainable agriculture farmers want to learn from each other or share their experiences with one another. This is surprising because many innovators often keep the secret of their success to themselves (Rogers, 1995). Their willingness to share the secrets of their success, perhaps, suggests the strength of sustainable agriculture farmers as a part of a movement wherein overall goal is to use farming as a way of drawing consumers to the importance of environmental sustainability.

The study also points to significant Extension needs expressed by sustainable agriculture farmers, such as how to overcome bureaucratic complexities, for example, those associated with organic certification, marketing strategies, access to information, and customer and media relations. It would seem that these problems are communicative in nature and may require Extensionists and their agricultural communication counterparts to work together to address these constraints (Bonk, Griggs, & Tynes, 1999).

However, the finding that sustainable agriculture farmers are willing to pay for Extension services that meet their needs should be welcome news for Extension Systems in budgetary crisis.

Finally, it would seem that the one thing that ties sustainable agriculture farmers together is their concern for the environment and their desire to use farming as a vehicle for helping consumers understand the conventional/alternative agriculture debate. These farmers indicated overwhelmingly their need for Extension messages that related to the environment. Thus, promoting environmental education may be an effective way for strengthening the relationship between Extension educators and sustainable agriculture farmers.

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