



ND Rural Life Poll Results, Spring 2006

Introduction

The Rural Life Poll is a project of the Center for Rural Studies at the University of North Dakota. The purpose of the Center is to enhance the quality of life of rural residents of the Northern Plains through coordinated research and information dissemination efforts. A public scholarship grant from the UND Center for Community Engagement provided the financing to conduct this poll. The poll was conducted in collaboration with FAR^{RMS} – the Foundation for Agricultural and Rural Resources Management and Sustainability. The mission of FAR^{RMS} is to serve the region, the state and the world in discovering, exploring and implementing practices and methods to further the sustainability of farms and rural communities.

Purpose

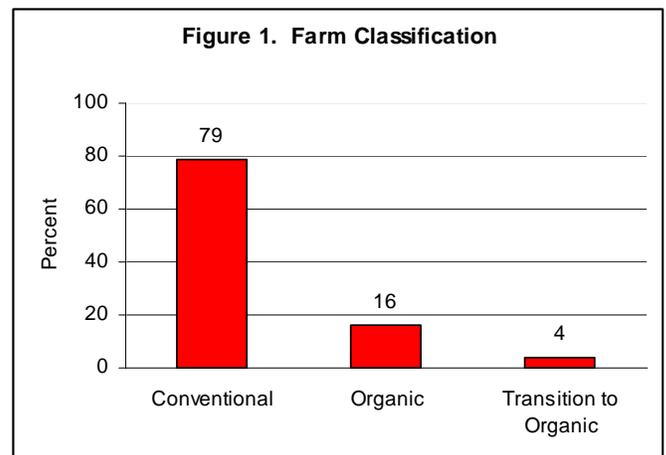
This poll was designed to identify the obstacles prohibiting conventional farmers from transitioning to organic production and to try to identify the characteristics that predispose farmers to adopt organic farming techniques.

Methodology

The results of this study are based on telephone interviews of two populations: conventional and organic farmers. The sampling frame of conventional farmers consists of the subscribers of *Farm and Ranch Guide*, which track very closely with the characteristics of North Dakota farmers and ranchers as described in the Censuses of Agriculture. The sampling frame for organic farmers was compiled from lists of producer members provided by the Northern Plains Sustainable Agriculture Society and the International Certification Services together with the North Dakota Department of Agriculture list of organic growers. Telephone interviews of 113 organic producers and 378 conventional producers were conducted by the Social Science Research Institute at UND from February 20 through March 24, 2006. The overall response rate was 69%.

Classification of Farms

The farmers interviewed were asked to describe their farm operation in accordance with the following definitions: 1) A conventional farming production system refers to a production system which employs a full range of pre- and post-plant tillage options (e.g., plow, disk, plant, cultivate), synthetic fertilizers, herbicides and pesticides. 2) An organic agriculture production system refers to particular farming practices that have been followed and certified by a third party inspector. Organic guidelines require that crop rotation and soil-building practices be used; that pest control rely primarily on cultural, mechanical and biological controls; and that pesticides are from plants, are short-lived in the environment, and are used only as a last resort. Soil amendments should come from renewable resources as much as possible and only non-refined mined products, when manure, composts or other sources of nutrients are not available. Based on these definitions, 79% of farmers contacted classified their operations as conventional, 16% as organic and 4% as transitioning to organic (Figure 1). However, 14% of conventional farmers had considered organic production.



Transitioning to Organic Production

Three hundred eighty-nine of the farmers interviewed classified their operation as conventional. Eighty-two percent of these farmers (318 individuals) have never considered transitioning to organic production. Eighteen percent (68 individuals) have considered making the transition to organic production. The sixty-eight farm producers who have considered transitioning to organic production were asked to identify the activities they have pursued in considering transitioning to organic production.

Table 1. Activities Pursued

Activity	Number	Percent
Discussed it with organic farmers	38	56
Sought info from organic farmers	33	49
Attended seminars/workshops	17	25
Looked for information on internet	16	24
Attend organic agric field days	12	18
Sought info from gov't agencies	8	12

Organic farmers were the most common source of information both in supplying information to farmers considering a transition to organic production and in discussing organic production with them. Farmers also attended seminars or workshops and searched the internet for information on organic production. Fewer farmers sought this information from government agencies.

Greatest Barrier To Transitioning to Organic

Concerns about marketing, production yields, income and expenses involved in changing to organic production, management difficulties and compliance procedures were some of the barriers to transitioning to organic production mentioned by those interviewed.

Table 2. Barriers to Transitioning to Organic Production

Barrier	Number
Weed control	15
Marketing	6
Market availability	4
Production yield uncertainty	4
Cost of change	4
Income reduction	3
Finding markets	2
Loss of income during transition	2
Lack of information	2
Amount of paperwork	2
Lack of time	2
Getting decent price for products	1
Distribution of products	1
Price difference vs. sacrifice & years to be certified	1
Rent	1
Too much debt to change to organic	1
Pest control	1
Chemical usage	1
Wheat hard to grow organically	1
Management difficulty	1
Too many acres, too far away	1
Size of operation	1
Amount of labor required	1
Compliance with certification requirements	1
Organic inspectors	1

Table 2. Continued

Barrier	Number
Organizations	1
Weather	1
Not able to make physical change	1
Change	1
Not worthwhile	1
Never got serious about it	1
Most farm conventionally	1

Weed control was mentioned most often, with 15 farmers expressing concerns about controlling weeds under organic production. Other barriers mentioned most often include marketing issues, market availability, production yield uncertainty and the cost of the transition to organic production.

Constraints in Transitioning to Organic Production

The 81 farmers who are currently farming organically, the 21 who are in the process of transitioning to organic production and the 68 conventional farmers who are considering a change to organic production (a total of 170 farmers) were asked to what degree a series of circumstances serve as a constraint or problem specific to their transitioning to organic production. A scale of responses was provided, with responses ranging from 1 (not a constraint or problem) to 5 (serious constraint or problem). The responses given for these circumstances are summarized in Table 3. The column "serious constraint percentage" indicates the percentage of farmers who feel that that particular circumstance is a serious constraint.

Table 3. Degree of Serious Constraint in Transition to Organic

Circumstance	Serious Constraint	
	Mean	Percent
Finding organic markets	3.21	25
Distance to transport organic inputs	3.17	23
Lack of organic marketing networks	3.13	15
Obtaining access to existing markets	2.99	19
Lack of consumer understanding	2.85	15
Achieving desired production/yields	2.79	15
Sourcing organic allowable inputs	2.68	11
Cost of organically allowable inputs	2.68	10
Effectiveness of organic inputs/methods	2.63	6
Organic practice information hard to find	2.51	10
Uncooperative/uninformed extension agents	2.50	16
Lack of knowledge about organic production	2.41	11
Social pressure to farm conventionally	2.34	12
Lenders' pressure to farm conventionally	1.83	6

Finding organic markets is the most serious constraint or problem in the transition to organic production, followed by distance or transport of organically allowable inputs, lack of organic marketing networks, obtaining access to existing organic markets and lack of consumer understanding about organic food. Pressure from lenders to farm conventionally, social pressures from other farmers or community to farm conventionally, personal lack of knowledge about organic practices, uncooperative or uninformed extension agents and information on organic practices unavailable or hard to find were felt to be the least serious constraints or problems. The percentage of

farmers feeling that a specific circumstance was a serious constraint or problem was highest for finding organic markets, distance or transport of organically allowable inputs, obtaining access to existing organic markets, and uncooperative or uninformed extension agents.

Reasons to Farm Organically

All of the farm producers interviewed were asked whether or not a series of reasons to choose to farm organically was important for them in choosing to farm organically. A range of responses was provided, ranging from 1 (not important) to 3 (moderately important) to 5 (very important). Table 4 summarizes these responses. The column "very important percentage" indicates the percentage of farmers who feel that each specific reason is very important.

Table 4. Reasons to Farm Organically

Reason	Mean	Very Important
		Percent
Maintain economic sustainability of the farm	3.96	55
Chemical avoidance for family/worker health	3.84	51
Land stewardship/ecological sustainability	3.68	42
Chemical avoidance for environmental health	3.66	44
Organic represents good farming practices	3.55	38
Quality of organically grown produce	3.52	38
Community values, tradition, quality of life	3.51	36
Reduced input costs	3.49	35
Provide economic support on fewer acres	3.48	35
View farm as an ecological system	3.44	31
Organic price premiums	3.35	36
Growing consumer demand for organic	3.25	28
Changing practices because of chemical reg.	3.24	28
Required by customer or buyer	3.12	26
Challenging/interesting/intellectually appealing	2.94	17
Required by land owner	2.80	26
Philosophical, spiritual, or ethical reasons	2.67	19

Maintaining economic sustainability of farm is felt to be the most important reason to farm organically, followed by chemical avoidance for health of family and farm workers, land stewardship/ecological sustainability and chemical avoidance for environmental health. Reasons felt to be least important include philosophical, spiritual or ethical reasons, required by owner of land, challenging, interesting, intellectually appealing and required by customer or buyer. The percentage of farmers feeling that a specific reason was very important was highest for maintaining economic sustainability of farm, chemical avoidance for health of family and farm workers, chemical avoidance for environmental health, land stewardship/ecological sustainability, quality of organically grown products, and organic represents good farming practices.

Differences in percentages by type of operation were statistically significant for thirteen of the seventeen reasons to farm organically. These reasons are summarized in Table 5.

Table 5. Importance of Reasons to Farm Organically

Reason	Mean	Mean	Difference
	Conventional	Organic	
Maintain economic sustainability of farm	3.85	4.31	.46
Quality of organically grown products	3.28	4.25	.97
Organic represents good farming practices	3.27	4.37	1.10
Land stewardship/ecological sustainability	3.44	4.44	1.00
Chemical avoidance for environmental health	3.39	4.51	1.12
Chemical avoidance for family/farm worker health	3.60	4.60	1.00
Changing practices because of chemical reg	3.22	3.31	Not Sig.
Philosophical, spiritual, or ethical reasons	2.42	3.43	1.01
View farm as ecological system	3.25	4.04	.79
Community values, tradition, quality of life	3.32	4.10	.78
Required by land owner	2.92	2.43	Not Sig.
Required by customer or buyer	3.07	3.27	Not Sig.
Provide economic support on fewer acres	3.34	2.71	.63
Challenging, interesting, Intellectually appealing	2.74	3.52	.78
Growing consumer demand for organic	3.12	3.66	.54
Organic price premiums	3.31	3.47	Not Sig.

The only reason felt to be more important by conventional growers was that organic farming was required by owner of land. For all other reasons, organic farmers rated these reasons as more important than did conventional farmers. The largest difference in means was for chemical avoidance for environmental health, followed by organic represents good farming practices, philosophical, spiritual or ethical reasons, land stewardship/ecological sustainability and chemical avoidance for family/farm workers health. Conventional and organic growers were most in agreement with that it maintained economic sustainability of farm, it was required by owner of land, growing consumer demand for organic, and it provided economic support on fewer acres than conventionally. Other reasons are summarized in Table 6.

Table 6. Other Reasons to Farm Organically

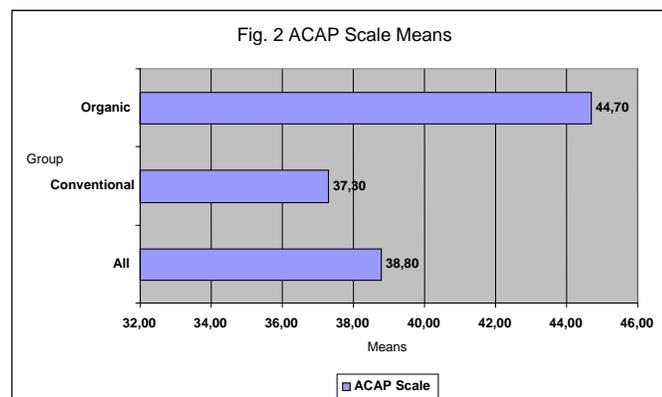
Reason	Number
Environmental health – better for land/water	12
Health and safety issues	19
Problems with chemical use	9
Weed control problems	2
Use of non-GMO products	3
Safer food supply	3
Sustainability	2
Economic issues	12
Utilization of livestock	1
Smaller acreages	1
Regulatory enforcement	1
Rental land requiring organic production	1
Curiosity	2
Challenge	2
Spiritual/religious reasons	2

Health and safety issues, economic issues, environmental health issues and chemical use were mentioned most often by the farmers interviewed.

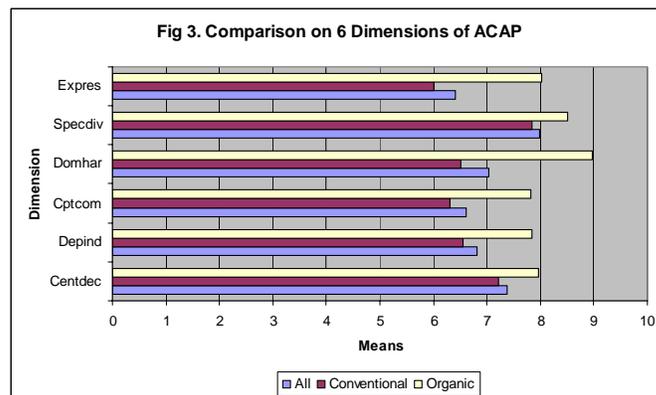
Comparisons on Alternative-Conventional Agricultural Paradigm (ACAP) Scale

We were interested in knowing whether farmers who were conventional, organic and transitioning to organic production differed in their responses to a scale measuring their support for alternative or conventional farming. The scale was developed by Beus and Dunlap (1990, 1991), and it is based on items designed to measure the various contrasting dimensions of conventional vs. alternative agriculture: Centralization vs. decentralization (cendec), dependence vs. independence (depend), competition vs. community (cptcom), domination of nature vs. harmony with nature (domhar); specialization vs. diversity (specdiv); and exploitation vs. restraint (expre).

We chose two items from each dimension and combined them into one scale. The range of the entire scale is twelve to 60 with a midpoint of 36. The scale is reliable with reliability of .6699 for all respondents, .5910 for conventional producers, and .6865 for organic-transitioning producers. An analysis of variance determined that the means on ACAP for organic/transitioning and conventional producers are significantly different from each other.

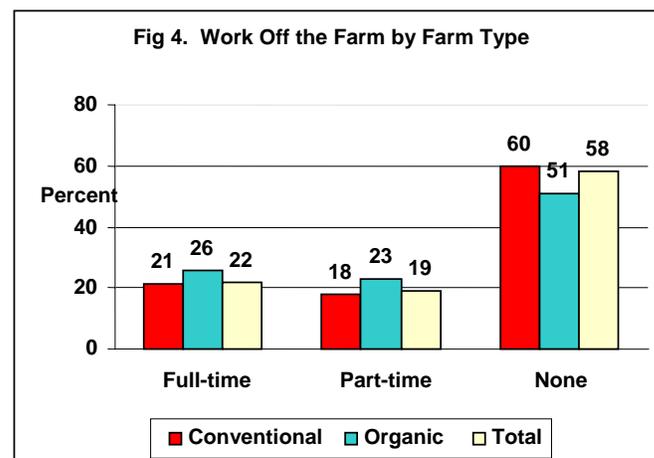


The range for each of the six dimensions is two to ten with a midpoint of six. An analysis of mean responses to the six components of the ACAP scale revealed that the means were significantly different for the two groups on all six dimensions. As with overall ACAP scale, both the organic/transitioning and conventional producers scored above the midpoint. An analysis of variance determined that the means for the organic/transitioning and conventional farmers are significantly different for each of the six dimensions.



Farm Characteristics

Off-Farm Work. Twenty-two percent of the farmers interviewed worked off the farm full-time in 2005; 19% worked off the farm part-time (Figure 4). Sixty percent of conventional producers did not work off the farm in 2005, compared to 51% of organic producers. These differences, however, are not statistically significant.



Those who did work off the farm in 2005 were asked why they did so. These reasons are summarized in Table 7.

Table 7. Reasons for Off Farm Work by Farm Type

Reason	Conventional	Organic	Total
For personal interest	77	60	73
As a secondary income Source	51	60	53
For health insurance Or other benefits	29	44	33
To subsidize farm and Capital investments	26	26	26
As a primary income Source	26	6	21
As a primary career	21	10	19
Don't work off farm	5	10	6

Overall, the reasons mentioned most often for working off the farm are for personal interest, as a secondary income source and for health insurance or other benefits. The difference by type of operation for two of the reasons listed in Table 7 are statistically significant:

conventional producers are more likely to work as a primary source of income; and conventional growers are more likely to work for personal interest. Chi-square tests indicate that the responses in one variable are dependent on the responses in the other variable.

Number of Employees by Type of Operation. The number of persons employed on a full-time or part-time basis ranges from 1 to 30. Table 8 presents the average number of persons employed by the farmers interviewed by the type of farm operation.

Table 8. Mean Number of Employees by Farm Type

Full-time	Part-time		Part-time	Seasonal
	Year	Seasonal		
Round	Round	Round	Round	Round
Conventional	2.07	2.97	2.46	2.53
Organic	2.89	2.30	1.89	2.50
Total	2.16	2.88	2.35	2.50

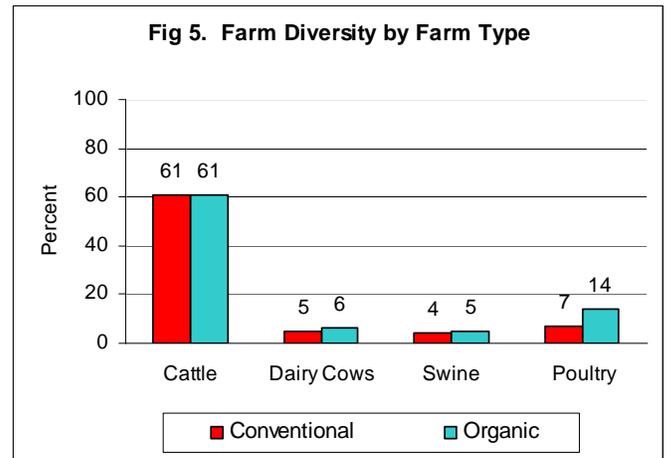
Organic farmers employ more full-time, year round employees. Conventional farms employ more full-time, seasonal and part-time employees, both year round and seasonal. The analysis of variance determined that there was no significant difference by type of operation on the mean number of employees employed.

Farm Size. The largest acreage farmed is 10,000 acres, the largest acreage leased is 6,000 acres, the largest acreage owned is 10,000 acres and the largest acreage farmed organically is 5,000 acres. In terms of acres farmed, acres leased and acres owned, the conventional farms tend to be larger (Table 9). Organic farms, on the average, are smaller, although they farm larger acreages organically. An analysis of variance of the differences between sample means indicate the average acres farmed, acres leased, and acres owned are significantly different by type of operation.

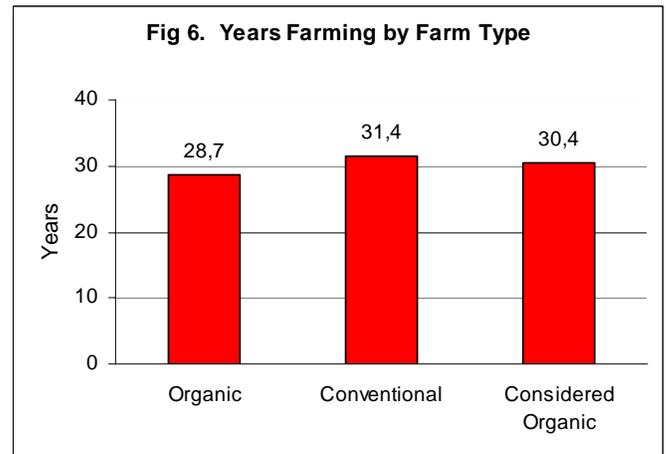
Table 9. Average Size of Farms by Farm Type

Operation	Farmed	Organically	Leased	Owned
Conventional	2021	579	1248	1351
Organic	1300	1034	725	1033
Total	1872	965	1152	1284

Farm Diversification. Sixty-one percent of farmers interviewed raise cattle, 5% have dairy cows, 4% raise swine and 8% raise poultry. Larger percentages of organic farmers raise cattle, dairy cows and swine; lower percentages of conventional farmers raise poultry (Fig. 5). These differences are significant only for the percentage of farmers raising poultry. Organic producers are significantly more likely to have poultry. The chi-square value indicates that only the responses for raising poultry are dependent upon the responses for type of operation.



Number of Years Spent Farming. The average farmer has spent 30.7 years in the business. Conventional farmers have farmed an average of 31.3 years, compared to 28.7 years for organic farmers (Fig. 6). The analysis of variance test indicates that these mean differences by farming type are not significantly different.



Gross Farm Income. Two hundred eighty-one of the individuals interviewed (58%) provided information on gross farm income in 2005. The incomes reported ranged from no income or loss to \$500,000 or more (Table 10). Twenty one percent of conventional, organic and all farmers reported incomes less than \$25,000; eleven, fifteen and twelve percent of conventional, organic and all farmers, respectively, reported incomes between \$25,000 and less than \$50,000. In the \$50,000 to less than \$99,999 income category, thirteen, seventeen and fourteen percent of conventional, organic and all farmers, respectively reported incomes; and fifty six, forty three and fifty three percent of conventional, organic and all farmers, respectively, in the \$100,000 and greater income category reported incomes. The chi square test indicated that the responses for gross farm income are independent of the responses for farm type categories.

Table 10. Gross Farm Income, 2005 by Farm Type

Income	Conventional	Organic	Total
No income,loss	4		3
Less than \$5000	3	8	4
\$5000-\$9999	4	7	4
\$10000-\$19999	6	7	6
\$20000-\$24999	4	2	4
\$25000-\$39999	7	8	7
\$40000-\$49999	4	7	5
\$50000-\$99999	13	17	14
\$100000-\$249999	27	32	28
\$250000-\$499999	16	8	14
\$500000 or more	13	3	11

Demographic Information

Total Household Income. Two hundred and fifty-four of the farm producers interviewed provided information on total household income in 2005. The levels of household income by producer type are listed in Table 11. There were 2% more organic than conventional farmers in the less than \$24999 categories, but there were 11% more conventional farmers in the \$25,000--\$49999 income categories, 1% more organic farmers in the \$50000--\$99999 categories, and 7% more organic farmers in the \$100000 and greater income categories. The chi-square analysis indicated that the responses for household income are dependent on the responses for farm type categories.

Table 11. Household Income, 2005 by Farm Type

Income	Conventional	Organic	Total
Less than \$10000	5.0		3.9
\$10000-\$14999	4.5	5.7	4.7
\$15000-\$24999	9.0	15.1	10.2
\$25000-\$34999	11.4	7.5	10.6
\$35000-\$49999	16.4	9.4	15.0
\$50000-\$74999	18.9	17.0	18.5
\$75000-\$99999	10.0	13.2	10.6
\$100000-\$149999	9.0	26.4	12.6
\$150000-\$199,999	5.0	1.9	4.3
\$200,000 and more	10.9	3.8	9.4

Education. More conventional farmers have less than a high school education, more organic farmers have completed high school, have some college, or completed junior college or trade school, but more conventional farmers have some graduate study or a graduate degree (Table 12). The chi-square statistic indicates that the responses for education are dependent on the responses for education.

Table 12. Education by Farm Type

Educational level	Conventional	Organic	Total
No formal education	5.8	5.1	5.7
Some high school	32.9	19.2	30.0
Completed high school	21.2	28.3	22.7
Some college	10.3	19.2	12.2
Completed junior college/trade school	20.7	24.2	21.4
Completed bachelor's degree	2.1	2.0	2.1
Some graduate study	6.6	2.0	5.7
Graduate degree	.3		.2

Age. The average age of the farm producers interviewed is 54 (Fig 7). The average age of conventional farmers is 54, compared to 51 for organic farmers. The largest age group is age 45 to 54 (34%), and most (63%) are between the ages of 44 and 65 (Table 13). An analysis of variance of the differences between means indicate the average age is significantly different by type of operation.

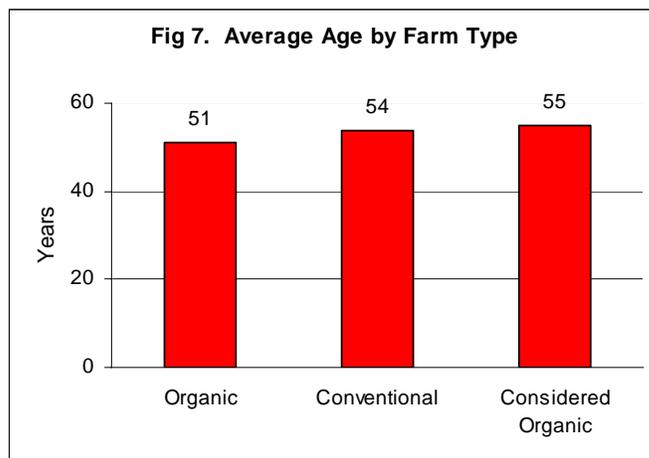


Table 13. Age by Farm Type

Age	Conventional	Organic	Total
18—24	1.3	1.0	1.3
25—34	4.5	3.0	4.2
35-44	14.6	14.1	14.5
45—54	30.0	48.5	33.8
55—64	29.7	25.3	28.8
65 & older	19.9	8.1	17.4

Relationship to Farm. Ninety-four percent of the farmers interviewed are owners or co-owners, 3% are hired managers and 3% hold other positions. These percentages are similar for all types of farm operations.

For More Information about the ND Rural Life Poll:

Dr. Curtis W. Stofferahn, Professor and Director
Center for Rural Studies, Department of Sociology
Gillette Hall Room 202, 225 Centennial Drive Stop 7136
Grand Forks, ND 58202-7136
Phone: 701-777-4418; Fax: 701-777-2468
<http://www.und.nodak.edu/misc/ndrural/>

For information about FAR^{MS} Contact:

Foundation for Agricultural & Rural Resources Management & Sustainability
301 5th Ave SE, Medina, ND 58467
Phone: 701-486-3569; Fax: 701-486-3580
<http://www.farrrms.org/index.shtml>

References

- Curtis E. Beus and Riley E. Dunlap 1990. Conventional Vs. Alternative Agriculture: The Paradigmatic Roots of the Debate. *Rural Sociology* 55(4): 590-616.
- Curtis E. Beus and Riley E. Dunlap. 1991. Measuring Adherence to Alternative Vs. Conventional Agriculture Paradigms: A Proposed Scale. *Rural Sociology* 56(3): 432-460.