

Readership Assessment of North Dakota Farm Research

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North Dakota Farm Research is a journal published by the Agricultural Experiment Station at North Dakota State University. It has been published since 1942 on a bimonthly basis, initially under the name **Bimonthly Bulletin**. In March of 1958, the name was changed to **Farm Research/Bimonthly Bulletin** and to the present **North Dakota Farm Research** in September of 1967.

Frank L. Eversull, former president of the North Dakota Agricultural College, commented when he commissioned the new publication, "As the sum total of human knowledge increases, as life becomes more complex, and as the struggle against the elements becomes more fierce, the consuming problem of education is to make the results of research readily accessible to those who can best profit by its findings" (Humphrey, 1982). Eversull went on to say that new experiments in government, new weather conditions, increasing hoards of insects and pests, the spread of fungi, marketing, food preparation and preservation, textiles and fabrics, and clothing all present a bewildering picture to the average citizen (Humphrey, 1982). These topics are still of major concern for the citizens of North Dakota.

Most articles are written by the scientists who do the research and are edited by the staff of the Agricultural Communications Department. By September of 1987, approximately 4,000 articles had been written covering the following main topics: economics and sociology, field crops, forages, garden crops and fruits, soil and water, weeds, livestock, farm equipment and buildings, community problems and developments, family living, and miscellaneous subjects (Humphrey, 1987).

This study was undertaken at the request of the director of the Agricultural Experiment Station and the office of Agricultural Communication of the NDSU Extension Service. A study of this nature will be used to assist the editorial staff in making decisions relating to possible changes in format, style, and subject matter. Held (1983) stated that people who use the different forms of media to relay information must now select the form of delivery based on creative consideration, timing, and shelf life. One must know, therefore, if the present form being used is acceptable to the readers and if it meets their needs for providing useful information.

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PROFILE OF READERS

Respondents were asked to report their major occupation, which formed the basis for assigning them into one of two categories: farm readers or non-farm readers. Farm readers were those who indicated they were farm/ranch operators with or without off-farm employment. Other occupational categories excluded farming as a major source of income and these were considered non-farm readers.

PURPOSE AND OBJECTIVES

The purpose of this study was to determine the readership of the **North Dakota Farm Research** and to obtain the readers' reactions and assessments of the publication.

Specific objectives of the study were:

1. To determine the extent to which recipients read **North Dakota Farm Research** and what types of articles they preferred to read.
2. To determine how often readers made use of the information contained in the publication.
3. To identify numbers of others who read **North Dakota Farm Research**, but whose names do not appear on the mailing list.
4. To assess the readers' perceptions of present content and/or format of **North Dakota Farm Research**.
5. To determine the readers' perceptions of the reading difficulty of **North Dakota Farm Research**.
6. To determine the readers' perceptions of the number and quality of pictures and illustrations used in **North Dakota Farm Research**.

PROCEDURES

The mailing list included 9,833 names as of February 1, 1987. Krejcie and Morgan (1970) indicated that a sample size of 370 would be representative of a population of this size. To increase the likelihood of obtaining a representative sample of this population, a 5 percent random sample was used. This yielded a sample size of 492. A 1 percent replacement sample for those questionnaires which were returned as undeliverable was selected. To get this 1 percent sample, every 100th name from the mailing list was selected.

A survey questionnaire was developed, pilot tested, and sent out in March of 1987. A follow-up postcard to all respondents was sent in early April. In late April, another

questionnaire was sent to people in the sample who had not yet responded. The final usable responses totaled 284 for a rate of 57.7 percent.

The early and late returns were analyzed and revealed no noticeable differences in responses, so results were generalized to the entire population.

A total of 271 respondents (95.4 percent) were males, and 13 (4.6 percent) were females. Due to this small percentage of females, no comparison of farm and non-farm respondents was made with respect to gender. Table 1 indicates the age ranges and formal education completed by respondents categorized as farm or non-farm readers. Most farm respondents (73.6 percent) were between the ages of 31 and 60, and 63.5 percent of the non-farm residents were in this category. None of the respondents were under 21 years of age, but 5.7 percent of the farm readers and 6.6 percent of the non-farm readers were between the ages of 21 and 30.

The level of formal education completed by respondents is also reported in Table 1. A total of 41.5 percent of the farm respondents did not go beyond high school; another 26.3 percent completed some college; 19.1 percent completed a college degree. Approximately two-thirds of the non-farm respondents completed a college education with almost one-third having a doctorate degree. This can be explained in that most occupations listed by the non-farm respondents required at least a bachelor's degree. Many on the mailing list are lawyers, veterinarians, or professors at universities. Less than one-fourth of the non-farm respondents had a high school education or less.

EXTENT OF READERSHIP

Respondents were asked to provide information concerning the extent to which **North Dakota Farm Research** is read, the types of articles and subject matter preferred, and what was done with the journal after reading. Table 2 reveals that 68.9 percent read some articles in each issue, whereas 24 percent read some articles in some issues. Only 1.4 percent reported they never read any articles. A total of

Table 2. Extent to Which Publication is Read, Types of Articles Preferred, and What is Done With the Journal After Reading

Category	Frequency	Percent
Extent to which publication is read:		
All articles	16	5.7
Some articles in each issue	195	68.9
Some articles in some issues	68	24.0
Never read any articles	4	1.4
Total	283	100.0
Types of articles preferred:		
Research in progress	182	64.1*
Research results	254	89.4*
Interviews with Experiment Station staff	114	40.1*
Information concerning the Cooperative Extension Service	94	33.1*
What is done with the journal after reading:		
Discard it	62	22.0
Save it a few months	105	37.2
Save it a year	36	12.8
Save it two years	46	16.3
Give it to someone else	33	11.7
Total	282	100.00

* Percentages are based on 284 total respondents. Totals are not calculated because respondents could check more than one category.

89.4 percent indicated they preferred to read the results of research, and 64.1 percent preferred to read about research in progress. Readers in this case were allowed to indicate more than one preference.

Respondents were also asked to report subject matter areas they liked to read. A total of 76.4 percent indicated they were interested in crop production. Weed control was an area of interest for 62 percent, whereas soils and fertilizers was of interest to 64.8 percent of the respondents. Information about livestock concerned 35.9 percent of the respondents, and 26.4 percent were concerned about horticultural information. The areas of lowest concern were

Table 1. Ages of and Formal Education Completed by Respondents.

Characteristic	Farm Readers	Non-Farm Readers	Total
Age Groups:			
Under 21	0 (0.0%)	0 (00.0%)	0 (0.0%)
21 to 30	8 (5.7%)	9 (6.6%)	17 (6.2%)
31 to 45	52 (37.2%)	49 (36.0%)	101 (36.6%)
46 to 60	51 (36.4%)	37 (27.2%)	88 (31.9%)
Over 60	29 (20.7%)	41 (30.2%)	70 (25.4%)
Total	140 (100.0%)	136 (100.0%)	276 (100.0%)
Education Completed:			
Grades 1-8	15 (10.9%)	8 (5.9%)	23 (8.4%)
Grades 9-11	7 (5.1%)	5 (3.7%)	12 (4.3%)
Grade 12	35 (25.5%)	17 (12.6%)	52 (19.1%)
Some College	36 (26.3%)	15 (11.1%)	51 (18.8%)
College	26 (19.1%)	31 (23.0%)	57 (21.0%)
Master's	8 (5.8%)	15 (11.1%)	23 (8.5%)
Doctorate	10 (7.3%)	44 (32.6%)	54 (19.9%)
Total	137 (100.0%)	135 (100.0%)	272 (100.0%)

youth development and family living (10.9 percent) and community development (12.7 percent).

Table 2 also indicates what was done with the publication after it was read. A total of 37.2 percent save the journal for several months; 22 percent discarded it after reading. Those who saved it for at least a year totaled 12.8 percent, whereas 11.7 percent gave it to someone else.

Data concerning how often the information is used by readers and how useful the information is to the readers' occupations has been summarized in Table 3. A total of 57.2 percent of the respondents indicated that they used information from a few articles each year. Only 2.2 percent did not use any information from the journal, and just 1.5 percent of the respondents reported that they did not find the information useful in their occupations. A total of 51.1 percent reported the information was moderately useful in their occupations.

Readers were asked to indicate why they read **North Dakota Farm Research**. The percentages indicated are based on a total of 284 respondents because they were again allowed to select more than one response. A total of 71.5 percent indicated they read the journal because the information is useful to their occupations. Over half (58.8 percent) want to keep up on research which is being conducted through North Dakota State University. A total of 33.5 percent indicated they read the publication because it contains honest, unbiased information.

The extent of passalong readership greatly affects the total number of readers of a journal, as summarized in Table 4. Of the total respondents, 31.8 percent indicated there were no other readers, and 30.3 percent reported at least one other person who read their journal copy. Another 21.5 percent indicated at least two more persons read the journal. The total number of additional readers is 375 for an average passalong readership of 1.37 people. An effective passalong circulation of 13,471 in addition to the actual circulation of 9,833 increases total readership to about 23,000 per issue.

ASSESSMENT OF PUBLICATION'S QUALITY

In determining the readers' opinions of the quality of **North Dakota Farm Research**, they were asked questions regarding format, article length, degree of reading difficulty, and the number and quality of pictures and illustrations. Table 5 reveals that readers were well satisfied with the format. A total of 23.9 percent rated the format as excellent, and 63 percent rated it as good. Only 1.1 percent rated it as poor. The article length was rated by 82.2 percent as "about right." Only 17.8 percent rated the length as somewhat or much too long. Table 5 also reveals that 67.5 percent of the respondents felt that the articles were clear and easy to understand. Only 2.5 percent responded that the journal was very difficult to understand, whereas 0.7 percent felt that the articles were too simple.

A total of 79 percent of the readers felt the number of pictures included in the publication was "about right," and 83 percent felt the number of illustrations was "about right" as reported in Table 6. Less than 2 percent felt more pictures than needed appeared in the journal, whereas 19.2 percent reported the publication contained "too few" pictures.

Table 3. Respondents' Indications of How Often They Use the Information and How Useful the Information Is to Their Occupations

Information	Frequency	Percent
Frequency of use:		
From every article	7	2.5
Selected articles from each issue	106	38.1
A few articles	159	57.2
Do not use any	6	2.2
Total	278	100.0
Usefulness:		
Very useful	67	24.5
Moderately useful	140	51.1
Slightly useful	63	23.0
Not useful	4	1.5
Total	274	100.0

Table 4. Number of Additional Readers

Number	Frequency	Percent
One person	83	30.3
Two people	59	21.5
Three people	23	8.4
Four people	5	1.8
Five people	17	6.2
No one else	87	31.8
Total	274	100.0

Table 5. Assessment of Format, Length of Articles, and Reading Difficulty

Assessment Factors	Frequency	Percent
Format:		
Excellent	66	23.9
Good	174	63.0
Fair	33	12.0
Poor	3	1.1
Total	276	100.0
Length:		
Much too long	1	0.4
Somewhat too long	47	17.4
About right	222	82.2
Too short	0	0.0
Total	270	100.0
Reading Difficulty:		
Very difficult	7	2.5
Somewhat difficult	81	29.3
Clear and easy	186	67.5
Too simple	2	0.7
Total	276	100.0

Slightly less than 5 percent felt "too few" illustrations appeared, and 12.2 percent indicated more illustrations than needed were included in the journal.

A summary of the readers' responses to the quality of the pictures and illustrations used in the journal is found in Table 7. A total of 68.1 percent felt that the quality was good; another 13.9 percent rated it excellent. Only three respondents (1.1 percent) felt the quality of pictures/illustrations was poor.

Table 6. Number of Pictures and Illustrations

Number	Pictures		Illustrations	
	Frequency	Percent	Frequency	Percent
More than needed	5	1.8	33	12.2
About right	218	79.0	225	83.0
Too few	53	19.2	13	4.8
Total	276	100.0	271	100.0

Table 7. Reader Assessment of the Quality of Pictures and Illustrations

Quality	Frequency	Percent
Excellent	38	13.9
Good	186	68.1
Fair	46	16.9
Poor	3	1.1
Total	273	100.0

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major pests, and private firms must determine ways of mass producing and marketing the new biological agents. This is just one of many examples of the road to success for future ecologically sound agricultural systems.

Another area that demands considerable long-term attention relates to gaining further technical knowledge about plant interactions. This area of research will require considerable commitment from the public research community. It seems clear that as farm programs have moved U.S. agriculture more and more toward monoculture systems that pest management problems have been magnified. There is a need to evaluate a wide range of cropping systems which include alternative crop rotations and a wide range of tillage systems.

In-depth research on soil and plant interactions under alternative tillage, crop rotation and pest management systems present scientists with complex research questions. In addition to these and other biological systems research programs that need to move forward if American agriculture is to become more regenerative and sustainable, there is a need for economic and ecological evaluations of alternative production systems. If the new technology doesn't improve economic efficiency and/or improve ecological systems, the biological findings have little or no potential of being adopted. We also must begin to develop more economic analysis on the impacts of U.S. agricultural policy on the incentives for farm producers to adopt new production

CONCLUSION

The results of this survey indicate that readers are generally pleased with **North Dakota Farm Research** in terms of its format, content, difficulty of the reading level, and quality of pictures and illustrations. Most readers take time to read some articles in each issue, then pass the publication on to someone else to read. Most readers also found the publication to be useful to them in their respective occupations.

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technologies that will enhance the long-term sustainability of American agriculture. New policy initiatives will likely address these issues in the next decade. If the agricultural research community is going to have a significant impact on the rationalization of agricultural policy, now is the time to make the technical research inputs.

We must all recognize in this transition that farmers don't intentionally want to lose soil or contaminate the environment or spray toxic chemicals on wildlife or adopt any other practice that will make agriculture environmentally unacceptable. The scientific community must provide the research basis to help farmers move from unacceptable practices to new production practices that are economically profitable and ecologically acceptable. The ultimate solutions may well need to be incorporated into a national agricultural policy that will provide farmers with financial incentives to help them make the transition in production systems.

We often speak of America as being the richest country in the world. It would seem that it is high time to invest some of that wealth in public research programs that will advance new economically and environmentally sound agricultural production systems. That concept must become the guideline for "Low-Input Sustainable Agriculture" research programs.