SOURCES OF INFORMATION AND ASSISTANCE UTILIZED BY A SELECTED GROUP OF DAIRY PRODUCERS FROM OKLAHOMA

By

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CHAPTER I

INTRODUCTION

The dramatic change in agriculture is a major challenge facing the Cooperative Extension Service today. The change has been occurring since World War II. There appears to be general agreement that agricultural research and extension have been major contributors to the increase in the productivity of American agriculture (Brown, 1972, p. 19).

Due to the tremendous changes in agriculture, the Cooperative Extension Service is being pressured to develop more efficient methods of information delivery. The goal is to make information available faster, to more people, and at less cost to the institution. An example of keeping up with the accelerated changes is the Florida Cooperative Extension Service (FCES). With the rising costs of traditional printed publications, the FCES is adapting electronic delivery methods at a fast pace (Watson et al., 1992). The use of new hardware technology such as CD-ROM and software retrieval methods such as full-text search and hypertext have proven successful in delivery information for FCES. It is being used in Florida's 67 county extension offices.

There are many questions about how effective Extension will be in the future. The National Agricultural Research and Extension

Users Advisory Board said in the March 1980 report to the President and Congress:

> We have concern that improved knowledge and technology transfer systems need to be developed by extension. In this interest, we recommend continuing review of extension methods with an eye toward use of the most effective means of transferring knowledge and technology (Brown, 1972, p. 10).

The concern about Extension's capacity to continue to be effective in the future is related to two factors: (a) the audiences they program to reach; and (b) the technical level of competency of the extension staff (Brown, 1972).

Along with the tremendous changes in agriculture, electronic information is being effectively utilized to reach a larger and more diversified audience. Teletext and videotext are becoming a major source for upscale and younger farmers. These highly volatile information sources seem to complement rather than replace existing sources of more stable information (Abbot, 1989). New teletext and videotext information technologies have the advantage of disseminating large amounts of information to very isolated and diverse rural farm families.

These systems can transmit electronic signals to farmers by telephone line, satellite, FM sideband, or television. The videotext systems, which are more interactive, provides specific information to the farmers. The teletext systems, which consist of continuously scrolling information, allow farmers to select a particular page from a menu. An example of a teletext system is AgriView. AgriView provides farmers with futures information, USDA

reports, cash prices, and weather information. The system is operated by Iowa State University.

New electronic information systems are likely to be most successful when they supply relatively perishable information that cannot be easily obtained from other sources, when users have flexibility in making use of the information for marketing or other purposes, and when the information is somewhat volatile, as in a rapidly changing market (Abbott, 1989).

In order for Extension personnel to increase their skills of helping clientele, they need to have an awareness of which communication channels are the most effective. With this information, agricultural leaders can improve the quality of resources as well as provide information that the producer needs.

Cooperative Extension has been recognized as the link between farmers and researchers. According to the Smith-Lever Act of 1914, Cooperative Extension work consists of "diffusing among the people useful and practical information on subjects relating to agriculture and home economics," and to encourage applying such information in individual and societal needs (Awa & Crowder, 1978). Producers want information that is reliable. They seek information that is based upon proven research, not educated guesses.

Sources other than extension have also helped to increase productivity in agriculture. An example is the Iowa's Livestock Initiatives's Technical Assistance Service.

Thanks to this service and its 35 technicians, over 600 livestock farmers in Iowa have a new tool to help them achieve the goal of a cost-competitive production system (Watkins, 1991). The technicians help producers analyze strengths and weaknesses of their farms as well as setting economical goals. The new program, essentially, helps individuals raise cattle more efficiently.

Scientific laboratories, such as those found in industrial and agricultural research parks, agribusiness and agrichemical corporations, and biotechnology agencies have become purveyors of the types of technology, services, and information that, until recently, had been almost exclusively within Extension's domain (Rollins, 1993).

The dairy industry is a segment of agriculture that has experienced recent introduction of a large number of innovative practices. The introduction of innovative practices can be attributed to the fact that dairy cattle require more labor per animal and are influenced to a greater degree by the level of management they receive than any other class of farm animals.

The dairy producer makes daily decisions regarding the selection, breeding, feeding, managing, housing, and care of his dairy herd (Bath et al., 1985). Effective dissemination of information relating to the major competency areas can enhance the productivity on a dairy operation.

Statement of the Problem

Due to the dynamic, highly competitive dairy industry, a need exists to economically help dairy producers by identifying the sources of information being utilized by them. By establishing the sources of information, effective educational programming can be developed to reach the target audience. Farmers' preferences to seek information from particular sources are based on their perceived importance and confidence in the accuracy of the information received (Kramic, 1987). Essentially, the use of sources of information that are perceived to be important as channels to reach the target audience may enhance the effectiveness of the educational programs (Baggett et al., 1993).

Purpose of the Study

The purpose of this study was to determine the value and manner of use of selected information resources by a group of successful Oklahoma dairy producers.

Objectives

To attain the above purpose, the following objectives, were established to (1) determine selected demographic data about the respondents; (2) determine sources of information, advice, or assistance the selected dairymen utilize; (3) determine the frequency of use and perceptions of the value of the sources.

CHAPTER II

REVIEW OF LITERATURE

The review of literature for this study was divided into three sections as follows: Diffusion of Innovations, Types of Information Sources, and Related Research.

Diffusion of Innovations

Diffusion is considered to bring about social change. Inventions of new ideas can cause changes in the structure and changes of a social system. Rogers (1983) defined diffusion as:

> The process by which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of communication, in which the messages are concerned with a new idea. It is this newness of the idea in the message content of communication that gives diffusion its special character. The newness means that some degree of uncertainty is involved (pp. 5-6).

Communication is vital if diffusion of information is to take place. Communication channels are used to get information from one person to another. The nature of the information-exchange relationship between individuals determines the conditions under which a source will or will not transmit the innovation to the receiver, and the effect of the transfer (Rogers, 1983).

Individuals can have a big effect in the process of diffusion. Opinion leaders and change agents are examples of roles in the

social system. Rogers (1983) defined opinion leadership as the degree to which an individual is able to influence other individuals attitudes or overt behavior informally in a desired way with relative frequency. Opinion leaders earn their role by maintaining their technical competence and establishing compliance with the system's norms.

Rogers (1983) defined a change agent as an individual who influences clients' innovation decisions in a direction deemed desirable by a change agency. Change agents are usually individuals who have degrees from a university. Change agents use opinion leaders to help diffuse the information in a social system. Philpot (1991) stated that:

> Change agents are often more effective if they concentrate on improving competence of the farmer in evaluating new ideas than promoting the idea directly. For example, if the dairy farmer is convinced that mastitis control will return a profit, he is more likely to be interested in details of how to control the disease. In the early stages of introducing an innovation, maximum effort should be focused as opinions leaders, because they will help diffuse information and enhance adoption (p. 76).

Adoption

Rogers (1983) defined adoption as "the decision to make full use of an innovation as the best course of action available" (p. 172). It is known that individuals do not readily adopt a new idea after becoming aware of its existence. Rogers (1963, Part I) indicated that there are five stages in the adoption process:

awareness stage, interest stage, evaluation stage, trial stage, and adoption stage. In the awareness stage the farmer learns about the new idea, but lacks complete information about it. The interest stage promotes interest about the innovation and the individual seeks further knowledge about it. The evaluation stage allows the individual to weigh the pros and cons of the new idea and decides whether or not to try it. After evaluation, the individual tries the new idea or practice to determine its utility. During this stage, farmers want to know what others think about the new idea or practice. Finally, at the adoption stage, the individual decides to accept or reject the idea or practice. He or she makes a decision to continue full use of the practice.

The length of time it takes for individuals to adopt an innovation can vary substantially. Rogers (1983) defined the rate of adoption as "the relative speed with which an innovation is adopted by members of a social system" (p. 23). All people do not adopt at the same time.

Lionberger (1961) indicated that the rate of adoption in a community or area is usually slow when a practice is first introduced with a much more rapid rate of acceptance later on. In the dairy industry, the rate of adoption can have a huge economical impact upon the dairy farmers. Philpot (1991) indicated that if higher adoption rates are to be achieved the procedures by which the technology such as mastitis control are communicated to dairy farmers, and the social attitudes that affect the adoption process

need to be understood by both field specialists and dairy farmers alike (p. 73).

A classification of individuals is established to determine an individual's time position in the adoption pattern. This classification is directly related to innovativeness, which is the degree to which an individual adopts an idea early in the adoption pattern as compared to others. Rogers (1963, Part I) classified individuals into five adopter categories which are innovators, early adopters, early majority, late majority, and laggards.

The innovators are the first to adopt. They take the risks by trying new ideas and practices. Early adopters use many new farm practices. They participate in organizations related directly to farming operations - as for example, Dairy Herd Improvement Association (Lionberger, 1960). The early majority adopt new ideas just before the average individual. They do not hold leadership positions and need more incentive to adopt new ideas. The late majority is considered to be incredulous. They require more motivation to adopt. Finally, the laggards are the last to adopt an idea. They are suspicious of change agents and often may be reached through the "trickle-down" process (Rogers, 1963, Part II).

Types of Information Sources Used by Farmers

Many producers use a variety of information sources on their farms. Lionberger (1961) indicates that the term "source" here is used to apply to people and agencies sought as sources of farm

information and include: mass media, including newspapers, magazines, radio, and television; agricultural agencies, such as the agricultural extension service and vocational agriculture departments; and commercial sources which primarily include local dealers, consultants, and salesman.

Mass media are considered the most useful source of initial information. Mass media are used to present new ideas and stimulate interest among many farmers. Mass media are often the most rapid and efficient channels which is very important in the first phase of adoption.

To effectively change the attitudes of individuals, interpersonal channels are used. Rogers and Shoemaker (1971) describe interpersonal channels as:

> Those that involve a face to face exchange between two or more individuals. These channels have greater effectiveness in the face of resistance or apathy on the part of the communicated. What can interpersonal channels do?
>
> 1. Allow a two-way exchange of ideas. The receiver may secure clarifications or additional information about the innovation from the source of the individual. This characteristic of interpersonal channels sometimes allows them to overcome the social and psychological barriers of selective exposure, perception and retention.
>
> 2. Persuade receiving individuals to form or change strongly held attitudes (pp. 252-253).

Essentially, mass media channels are primarily knowledge creators, whereas interpersonal networks are more important at persuading individuals to reject or adopt (Rogers, 1983).

For late adopters, other farmers are listed as the major source of information. Early adopters typically use agricultural agencies

as sources of information such as veterinarians, A.I. technicians, dairy equipment dealers, sanitarians, and bankers as sources of information (Herrick, 1983).

Related Research

Purswell (1991) conducted a study concerning factors associated with the continuation of alternative enterprises as perceived by Oklahoma farmers and ranchers. The study found that state and area Extension Specialists, County Extension Agents, and new publications were the top sources of information. USDA, seminars, farm management programs, and radio were the least used information sources. Purswell (1991) found that grower organizations, television, county extension agents, other farmers, agricultural education instructors, and professional consultants were information sources perceived as highly effective.

Awa & Crowder (1978) conducted a study concerning the principal communication channels used by Lewis County dairy farmers in the North County region of New York State. The study found that special interest magazines (such as American Agriculturalist, Hoards Dairyman, and Successful Farmer) tended to provide the most up-to-date agricultural information and technical developments. It is also noted that Extension was frequently mentioned for these types of information as well.

Awa & Crowder (1978) found that magazines were chosen by 56.6% of the farmers as the most important source of information. Other sources of primary information were newspapers, 28.3% and radio,

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13.2%. Magazines were chosen as the most convenient source by 52.8% of the farmers, while radio and newspapers were chosen by 26.4% and 17.0%, respectively (Awa & Crowder, 1978).

The study attributed factors concerning print media and magazines as the major source of communication channels. Awa & Crowder's study addressed the factors:

> Magazines, such as the special interest type, contained articles relevant to their own farming situations. Most said that the feature articles in these magazines focused on indepth analyses of specific farming problems and current developments. This is consistent with Lionberger's finding that farmers "have come quickly to rely on newspapers and magazines to get ideas about new developments quickly (Awa & Crowder, 1978, pp. 21-22).

Morris (1954) indicated that forty-four of fifty farmers surveyed, applied the information from magazines to practices on their farms. The respondents in another study had a desire to talk with another farmer (usually a friend or relative) who had tried a new practice before venturing to invest in it (Awa & Crowder, 1978).

The implication of the 1978 Awa & Crowder study was that Extension agent's main focus should be identifying and providing information to primary sources. Extension agents need to develop and utilize communication skills in providing understandable information to the farmers.

The National Animal Health Monitoring System (1992) asked dairy producers participating in the National Dairy Heifer Evaluation Project (NDHEP) about outside information sources. The National Animal Health Monitoring System (1992) found veternarians to be the most common source of off-farm information sources tapped by dairy producers to make health care decisions. Dairy magazines and

journals were also mentioned, along with the extension service and medical supply sales people. The system (1992) found that producers viewed the veternarian as the single most important source of information (83%). On the other hand, a few relied most heavily on the extension service and dairy magazines or journals (4% each).

In a study conducted by Baggett et al. (1993) concerning information sources used in dairy reproductive management, they reported that farm or dairy magazines were the most frequent information sources received by dairy farmers, followed by farm newspapers, veternarians, and A.I. organizations. Dairy farmers indicated that they occasionally received information about reproductive management from other farmers, county extension agents, feed company representatives, and DHIA. However, veternarians were perceived as the most important source of information, followed by farm or dairy magazines and A.I. organizations as the next important source of information (Baggett et al., 1993).

Bracewell et al. (1993) reported the adoption and non-adoption of approved practices by Minnesota dairy farm operators. From a list of 14 possible information sources, for changes in dairy farm practices, farmers indicated they more frequently use information from veternarians than from any other single source (Bracewell et al., 1993). Agricultural suppliers were also indicated as a source of frequently used information (Bracewell et al., 1993). In the study, the County Extension Agent and the University Specialist ranked seventh and eighth respectively.

Further, Bracewell et al. (1993) indicated the following relationships as respondents were asked to reconstruct the sources first and secondary knowledge, and most compelling reason to adopt and not to adopt specific practices:

1. Mass media was found to be the most important source of first knowledge both for practices that have been adopted as well as practices that farmers do not plan to adopt.

2. Self (little or no recognizable or identifiable outside source) was found to be the most important source of secondary knowledge both for practices that farmers do not plan to adopt.

3. Economics and time were found to be the two most compelling reasons given for adopting specific practices (Bracewell et al., 1993).

Summary

Communication is considered very important in the diffusion process. In order to communicate effectively, the appropriate channels of communication need to be fully exercised. To encourage the rate of adoption, sources of farm information such as newspapers, magazines, radio, agricultural agencies, and commercial sources are utilized. Studies have found that magazines, County Extension Agents, other farmers, and veterinarians to be very effective in disseminating information to agricultural producers.

CHAPTER III

METHODOLOGY

Introduction

The purpose of this chapter is to describe the methods and procedures used in conducting this research study. In order to meet the purpose and objectives of this study, a sample was determined and a telephone questionnaire instrument was developed for data collection.

Population

The population for this study was the top 17% of Holstein producers in terms of rolling herd average from the Oklahoma Dairy Herd Improvement Association list of producers for 1993-94. The reason the top 17% Holstein producers were used was because of their success in terms of milk production. They had achieved a Rolling Herd Average of at least 18,000 pounds and had a minimum of 15 cows in the herd. The successful group was utilized to promote an awareness of the sources of information to other producers in the state. Other reasons for establishing the top 17% dairy producers were to limit the scope in order to better deal with factors such as time and cost.

Preparation of the Instrument

It was decided that a structured questionnaire would provide the highest response rate and provide the most accurate and usable information. Dillman (1978) indicated that the telephone questionnaire attributed to high success in open-ended questions and high success in controlling the sequence of questions.

Key (1974) pointed out the advantages of a questionnaire which include (1) the economy of expense and time in collecting information over varied locations; and (2) uniformity of questions presented to the individual.

A combination open form/closed form questionnaire was developed to elicit information about respondents (demographic data); information sources, advice, and assistance they utilize and frequency of use and perceptions of the value of the resources.

Collection of Data

In order to collect the information, an assistant was trained in conducting the telephone interviews. Time was spent reviewing the purpose of the study and providing information necessary about the technical aspects of sources of information utilized on the dairy. Time was also spent in discussing the most effective ways of inquiring the information. A review of the instrument was conducted with emphasis placed on understanding its parts and its purpose. Finally, the researcher listened as the assistant made the call. The assistant was scheduled to call after the researcher was satisfied that they were adequately prepared.

The questions were asked in sequence and any additional comments were recorded. For all dairy producers who could not be reached after three calls no further effort was made to contact them. Other reasons for no contact were disconnected numbers, complete dispersal of herd, and reluctance to participate in the study. All numbers, time of call, number called from, and person making the call were recorded. Data for the study were collected from March 25, 1994 to April 2, 1994. Most calls were placed from 7:00 p.m. to 10:30 p.m. Monday, Tuesday, Wednesday, and Thursday.

Analysis of the Data

The frequency effectiveness ratings of the Magazines, Scientific/Extension Materials, Mass Media, and Individuals used a Likert-type scale. The frequency rating consisted of a continuum from "Never" through "Daily". Numerical values were assigned for ease of tabulation to each of the response categories in the following pattern:

Response Categories	Numerical Value	Range of Actual Limits for Categories
Never	0	0.00-0.49
Occasionally	1	0.50-1.49
Monthly	2	1.50-2.49
Weekly	3	2.50-3.49
Daily	4	3.50-4.00

Mean frequency of use scores of those using an information source, percent of respondents using an information source, and the distribution of the various categories are presented in tables

designed for that purpose. Calculations were achieved by using a computer program, Lotus 1, 2, 3.

The effectiveness rating consisted of a continuum from "Not Effective" through "Very Effective." Numerical values were assigned for ease of tabulation to each of the response categories in the following pattern:

Response Categories	Numerical Value	Range of Actual Limits for Categories
Not Effective	1	0.00-1.49
Effective	2	1.50-2.49
Very Effective	3	2.50-3.00

Mean effectiveness scores of those using an information source, percent of respondents using an information source, and the distribution of the responses by the various categories are presented in tables designed for that purpose.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

The purpose of this chapter is to present findings associated with information sources utilized by a selected group of Oklahoma dairymen in making management decisions.

Data are presented which describe the survey population by identifying selected demographic characteristics and their ratings of effectiveness and frequency of magazines, scientific/extension material, mass media, and individuals utilized as sources of information or assistance. The data were collected by means of telephone interviews conducted by the researcher or an assistant.

Population

The population for the study consisted of the top 17 percent, 44, of dairy producers who were participating in the Oklahoma Dairy Herd Improvement Association program as of Fall, 1993. Of this group, a total of 33 dairy producers provided information to the researcher via the telephone survey, representing a 75% response rate. Data were collected by an instrument that contained Likert-type scales of effectiveness and frequency of use of the information sources/assistance. Ranges for response categorization are described in the previous chapter.

Demographic Characteristics of Respondents

Table I was constructed to present a summary of selected demographic characteristics of those participating in the study. The average age of the dairymen was 47.45 years. The largest percentage of respondents, 42.42, was in the age range of 36 to 50 years. The next largest percentage, 33.33, was in the 51 to 65 age range. Six producers (18.18 percent) were 35 years old or younger, while two (6.06 percent) were over 65 years old. The range of ages was from 31 to 74.

When questioned about their future plans, 23 (69.70 percent) of the respondents indicated that they planned to continue in the dairy business for 11 years or more. Seven of the group (21.21 percent) expressed the intent to continue for less than five years, while three (9.09 percent) planned to continue in their operation from six to ten years.

In terms of educational level attained, 15 of those interviewed (45.45 percent) had earned a high school diploma, while 4 others (12.12 percent) had earned at least some college credit beyond high school. Eleven of them (33.33 percent) held a B.S. Degree, with one (3.03 percent) having earned hours beyond the B.S. Two (6.06 percent) had participated in Post-secondary Vo-Tech programs.

Of the 33 respondents, almost one-half, 14 (42.42 percent) reported that they had access to a computer for their dairy operation. Eight (24.24 percent) had access to a satellite dish.

When quizzed about the source of labor for their enterprise almost two-thirds of those surveyed, 21 (63.64 percent), indicated

TABLE I

DISTRIBUTION OF RESPONDENTS BY SELECTED DEMOGRAPHIC CHARACTERISTICS

Variable	Number	Percent	Average
Age			47.45
< 35 years years	6	18.18	
36 to 50 years old	14	42.42	
51 to 65 years old	11	33.33	
> 65 years old	2	6.06	
Years Plan to Continue Dairying			
< 5	7	21.21	
6 to 10 years	3	9.09	
> 11 years	23	69.70	
Education			13.87
High School	15	45.45	
High School Plus	4	12.12	
Post Secondary Vo-Tech	2	6.06	
B.S. Degree	11	33.33	
B.S. Degree Plus	1	3.03	
Special Technology Available			
Computer	14	42.42	
Satelite Dish	8	24.24	
Labor Source			
Herd Owner	1	3.03	
Herd Owner & Family	8	24.24	
Family and Hired	21	63.64	
Mostly Hired	2	6.06	
All Hired	1	3.03	

that it was a combination of family members and hired workers. The herd owner and family provided the labor in eight (24.24 percent) of the cases. In two situations, (6.06 percent) the labor was mostly hired and in one each (3.03 percent), the labor source was herd owner only and all hired.

Magazines as Sources of Information and Assistance

Frequency Utilized

Respondents were asked to rate the frequency with which they utilized magazines as sources of information. Table II was developed to summarize these ratings which were on a frequency of use scale of 1 to 4, with 4 being Daily and 1 being Occasionally. It was found that none of the respondents used any magazine listed on a Daily basis.

The Hoard's Dairyman was the most used by respondents. Of the 33 respondents, 10 (30.30 percent) indicated they used it Weekly, while 18 (54.55 percent) utilized it on a Monthly basis. The remaining 15.15 percent said they used this publication Occasionally. The mean frequency of use rating for those who consulted this magazine was 2.15-Monthly.

The second most used magazine was Dairy Today. This was used by 18 (54.55 percent) of the producers. Of these 18 respondents, 11 (61.11 percent) utilized it on a Monthly basis, with 4 (22.22 percent) saying they used it Weekly. The remaining respondents, 3 (16.67 percent), indicated they used this particular magazine

TABLE II

RATINGS OF FREQUENCY OF USE OF MAGAZINES
AS SOURCES OF INFORMATION OR ASSISTANCE

Magazines Used	Distribution by Frequency of Use								Mean Frequency of use Rating for Users
	Weekly		Monthly		Occasionally		Total		
	#	%	#	%	#	%	#	%	
Holstein World	2	16.67	8	66.67	2	16.67	12	36.36	2.00 - Monthly
Dairy Herd Management	2	14.29	12	85.71	0	0.00	14	42.42	2.14 - Monthly
Dairy Illustrated	0	0.00	1	100.00	0	0.00	1	3.03	2.00 - Monthly
The Dairyman	1	16.67	5	83.33	0	0.00	6	18.18	2.17 - Monthly
Dairyman's Digest	3	23.08	8	61.54	2	15.38	13	39.39	2.08 - Monthly
Farm Future	0	0.00	1	100.00	0	0.00	1	3.03	2.00 - Monthly
Hoard's Dairyman	10	30.30	18	54.55	5	15.15	33	100.00	2.13 - Monthly
Oklahoma Farmer's Stockman	1	25.00	2	50.00	1	25.00	4	12.12	2.00 - Monthly
Progressive Farmer	0	0.00	4	100.00	0	0.00	4	12.12	2.00 - Monthly
Dairy Today	4	22.22	11	61.11	3	16.67	18	54.55	2.06 - Monthly
Western Dairyman	1	50.00	1	50.00	0	0.00	2	6.06	2.50 - Weekly
High Plains Journal	2	66.67	1	33.33	0	0.00	3	9.09	2.67 - Weekly
Top Producer	0	0.00	2	66.67	1	33.33	3	9.09	1.67 - Monthly
Farm Journal	0	0.00	5	83.33	1	16.67	6	18.18	1.83 - Monthly
Dairy Edition Farmer	0	0.00	0	0.00	1	100.00	1	3.03	1.00 - Occasionally

Occasionally. For those who did use Dairy Today, the mean frequency of use rating was 2.06-Monthly.

The third most frequently consulted periodical was Dairy Herd Management. This was used by 14 (42.42 percent) of those surveyed. Of these 14 respondents, 2 (14.29 percent) said they referred to it on a Weekly basis, while the remaining 12 (85.71 percent) reported using it Monthly. For this group of users, the mean frequency of use rating for this publication was calculated to be 2.14-Monthly.

Dairyman's Digest was utilized by 13, or 39.39 percent, of the participants in the study. Eight of these (61.54 percent) said they used this magazine Monthly, with 3 (23.08 percent) of the users, referring to it on a Weekly basis. The remaining 2 (15.38 percent) sought information from this source Occasionally. The mean frequency of use rating was found to be 2.08-Monthly.

A total of 12 of those surveyed (36.36 percent) indicated they used the Holstein World. Eight of these (66.67 percent) read it on a Monthly basis, with two each (16.67 percent) saying this was their source of information or assistance Weekly or Occasionally. The combination of these responses revealed that those who utilized this publication averaged doing so Monthly as determined by the 2.00 mean rating.

Farm Journal and The Dairyman were cited as references used by six producers (18.18 percent) each. The latter received a mean frequency of use rating of 2.17-Monthly, while the former's rating was 1.83-Monthly from the six who reported using them.

Four of the dairy producers (12.12 percent) from whom data were collected indicated that they consulted The Oklahoma Farmer Stockman and Progressive Farmer. In the case of the former, one-half of those using it did so Monthly, with one producer saying it was used Weekly and the other reporting using it Occasionally. For the latter, all four users referred to it Monthly. The mean frequency of use scores for both of these publications were 2.00-Monthly.

Magazines that were utilized by 3 respondents or less, arranged in order by the number of producers using, along with their mean frequency of use ratings from these dairymen included: High Plains Journal, 2.67-Monthly; Western Dairyman, 2.50-Monthly; Farm Talk, 2.00-Monthly; Dairy Illustrated, 2.00-Monthly; Farm Future, 2.00-Monthly; Top Producer, 1.67-Monthly; and Dairy Edition Farmer, 1.00-Ocasionally.

Effectiveness

After describing the frequency with which they consulted the list of magazines, the producers were asked to assign a rating to each as to its effectiveness as a source of information or assistance. The results of that effort are reported in Table III. Effectiveness ratings were assigned using a three category scale consisting of Very Effective, Effective, and Not Effective. For purposes of calculating mean responses, values of 3, 2 and 1 were assigned to these categories respectively.

Four of the dairy producers (12.12 percent) from whom data were collected indicated that they consulted The Oklahoma Farmer Stockman and Progressive Farmer. In the case of the former, one-half of those using it did so Monthly, with one producer saying it was used Weekly and the other reporting using it Occasionally. For the latter, all four users referred to it Monthly. The mean frequency of use scores for both of these publications were 2.00-Monthly.

Magazines that were utilized by 3 respondents or less, arranged in order by the number of producers using, along with their mean frequency of use ratings from these dairymen included: High Plains Journal, 2.67-Monthly; Western Dairyman, 2.50-Monthly; Farm Talk, 2.00-Monthly; Dairy Illustrated, 2.00-Monthly; Farm Future, 2.00-Monthly; Top Producer, 1.67-Monthly; and Dairy Edition Farmer, 1.00-Ocasionally.

Effectiveness

After describing the frequency with which they consulted the list of magazines, the producers were asked to assign a rating to each as to its effectiveness as a source of information or assistance. The results of that effort are reported in Table III. Effectiveness ratings were assigned using a three category scale consisting of Very Effective, Effective, and Not Effective. For purposes of calculating mean responses, values of 3, 2 and 1 were assigned to these categories respectively.

TABLE III

RATINGS OF EFFECTIVENESS OF MAGAZINES AS SOURCES OF INFORMATION OR ASSISTANCE

Magazines Used	Distribution by Level of Effectiveness								Mean Effectiveness Rating for Users
	Not Effective		Effective		Very Effective		Total		
	#	%	#	%	#	%	#	%	
Holstein World	0	00.00	8	66.67	4	33.33	12	36.36	2.33 - Effective
Dairy Herd Management	0	00.00	6	42.86	8	57.14	14	42.42	2.57 - Very Effective
Dairy Illustrated	0	00.00	1	100.00	0	0.00	1	3.03	2.00 - Effective
The Dairyman	0	00.00	3	50.00	3	50.00	6	18.18	2.50 - Very Effective
Dairyman's Digest	3	23.08	7	53.85	3	23.08	13	39.39	1.92 - Effective
Farm Future	0	00.00	1	100.00	0	00.00	1	3.03	2.00 - Effective
Farm Talk	0	00.00	2	100.00	0	00.00	2	6.06	2.00 - Effective
Hoard's Dairyman	1	3.03	15	45.45	17	51.52	33	100.00	2.48 - Effective
Oklahoma Farmer Stockman	0	00.00	3	75.00	1	25.00	4	12.12	2.25 - Effective
Progressive Farmer	0	00.00	3	75.00	1	25.00	4	12.12	2.25 - Effective
Dairy Today	1	5.56	8	44.44	9	50.00	18	54.55	2.44 - Effective
Western Dairyman	1	50.00	0	00.00	1	50.00	2	6.06	2.00 - Effective
High Plains Journal	0	00.00	2	66.67	1	33.33	3	9.09	2.33 - Effective
Top Producer	0	00.00	2	66.67	1	33.33	3	9.09	2.33 - Effective
Farm Journal	0	00.00	5	83.33	1	16.67	6	18.18	2.17 - Effective
Dairy Edition Farmer	0	00.00	1	100.00	0	00.00	1	3.03	2.00 - Effective

Dairy Herd Management was rated as the most effective magazine by respondents who used this publication. Of the 14 users, 8 (57.14 percent) rated this magazine as Very Effective. The other six respondents (42.86 percent) rated it Effective. The mean effectiveness rating was 2.57 or Very Effective.

The Dairyman ranked second in effectiveness by users. Of the 6 users, one-half rated it Very Effective and the other half assigned a rating of Effective. The mean effectiveness rating by those six respondents for this publication was 2.50 or Very Effective.

Hoard's Dairyman received the third highest rating for effectiveness by 33 users. Of those users, 3.03 percent indicated it was Not Effective, while 45.45 percent said it was Effective. The remaining 51.52 percent perceived it as Very Effective. This magazine had a mean effectiveness rating of 2.48 or Effective.

Dairy Illusrtated, Farm Future, Farm Talk, Western Dairyman, and Dairy Edition Farmer each received a mean effectiveness rating of 2.00 or Effective. Dairyman's Digest was found to have the lowest mean effectiveness rating, 1.92, but this was still at the Effective level.

Scientific/Extension Materials as Sources of Information and Assistance

Frequency Utilized

Another phase of the study was to determine how respondents rated the frequency with which they used Scientific/Extension

materials as sources of information and assistance. Table IV contains a summary of those ratings which were made on a scale of 0 to 4, with 0 being Never and 4 being Daily.

DHIA reports were the most utilized by the producers. Of the 33 users, 10 (30.30 percent) said they used them on a Daily basis, while 16 (48.48 percent) indicated they used them Weekly. The remaining 21.21 percent said they used the reports Monthly. DHIA Reports received a mean frequency of use rating of 3.09, or Weekly.

Extension Fact Sheets were the second most utilized source. Of the 27 users, 3 (9.09 percent) indicated they use them Weekly, 9 (27.27 percent) said they used them Monthly, while 15 (45.45 percent) used them Occasionally. The remaining 18.18 percent reported they never use Extension Fact Sheets as sources of information. This particular source had a mean frequency of use rating of 1.56 or Monthly.

Only one respondent used Mastitis Council as a source of information. The respondent indicated that he used this source Weekly. In a conversation with the Dairy Extension Specialist, Dr. Jack Stout, he stated that Mastitis Council is used by Extension to be the basis for a lot of fact sheets and education articles.

Effectiveness

For the purpose of the study, Table V was constructed to present the Effectiveness ratings of Scientific/Extension Materials.

TABLE IV

RATINGS OF FREQUENCY OF USE OF SCIENTIFIC/EXTENSION MATERIALS AS SOURCES OF INFORMATION OR ASSISTANCE

Media Source	Distribution by Frequency of Use												
	Daily		Weekly		Monthly		Occasionally		Never		Total		Mean Frequency of Use Ratings for Users
	#	%	#	%	#	%	#	%	#	%	#	%	
Mastitis Council	0	00.00	1	3.03	0	00.00	0	00.00	32	96.97	1	3.03	3.00 - Weekly
DHIA Reports	10	30.30	16	48.48	7	21.21	0	00.00	0	00.00	33	100.00	3.09 - Weekly
Extension Fact Sheets	0	00.00	3	9.09	9	27.27	15	45.45	6	18.18	27	81.82	1.56 - Monthly

TABLE V

RATINGS OF EFFECTIVENESS OF SCIENTIFIC/EXTENSION MATERIALS AS SOURCES OF INFORMATION OR ASSISTANCE

Media Source	Distribution by Level of Effectiveness								Mean Frequency of Use Ratings for Users
	Not Effective		Effective		Very Effective		Total		
	#	%	#	%	#	%	#	%	
Mastitis Council	0	00.00	0	00.00	1	3.03	1	3.03	3.00 - Very Effective
DHIA Reports	0	00.00	4	12.12	29	87.88	33	100.00	2.88 - Very Effective
Extension Fact Sheets	3	9.09	18	54.55	6	18.18	27	81.82	2.11 - Effective

DHIA reports received a mean effectiveness rating of 2.88 or Very Effective. Of the 33 users, 4 (12.12 percent) said they were Effective and 29 (87.88 percent) indicated they were Very Effective.

Extension Fact Sheets were determined to have a mean effectiveness rating of 2.11 or Effective. Of the 27 respondents, 3 (9.09 percent) said they were Not Effective, 18 (54.55 percent) indicated they were Effective, while 6 (18.18 percent) said the Extension Fact Sheets were Very Effective.

Only 1 respondent, the one who used this source, said that Mastitis Council was Very Effective.

Mass Media as Sources of Information and Assistance

The respondents were asked to rate the frequency with which they utilized mass media as sources of information and assistance and this is reported in Table VI. The mass media consisted of the newspaper, television, and radio, which had mean frequency of use ratings of 3.00 (Weekly), 2.77 (Weekly), and 2.67 (Weekly) respectively.

For the purpose of the study, newspapers were categorized as local and state. The local newspaper referred to the surrounding area and the state newspaper referred to statewide circulation. Newspapers were the most utilized by the respondents. Of the 14 respondents, 4 (12.12 percent) used it Daily, 7 (21.21 percent) used it Weekly, 2 (6.06 percent) used it Monthly, while

TABLE VI

RATINGS OF FREQUENCY OF USE OF MASS MEDIA
AS SOURCES OF INFORMATION OR ASSISTANCE

Media Source	Distribution by Frequency of Use												
	Daily		Weekly		Monthly		Occasionally		Never		Total		
	#	%	#	%	#	%	#	%	#	%	#	%	Mean Frequency of Use Ratings for Users
Local & State Newspaper	4	12.12	7	21.21	2	6.06	1	3.03	19	57.58	14	42.42	3.00 - Weekly
Radio	1	3.03	1	3.03	0	0.00	1	3.03	30	90.91	3	9.09	2.67 - Weekly
Television	5	15.15	4	12.12	0	0.00	4	12.12	20	60.61	13	39.39	2.77 - Weekly

only one (3.03 percent) utilized it Occasionally. The remaining 42.42 percent indicated they never used newspapers as sources of information.

The second most used type of mass media was television. Of these 13 respondents reporting, 5 (15.15 percent) used it daily, 4 (12.12 percent) utilized it Weekly, while 4 (12.12 percent) used television Occasionally. However, 39.39 percent said they Never used it.

Radio, according to the 3 respondents, was used for various weather reports and marketing information. The distribution by frequency of use was 3.03 percent for each response category of Daily, Weekly, and Occasionally.

Effectiveness

After describing the frequency with which they consulted the types of mass media, the producers were asked to assign a rating to each as to its effectiveness as a source of information or assistance. The results of that effort are reported in Table VII.

The highest rated of any of the media sources was radio, with a mean effectiveness rating of 2.33, or Effective. Of those three respondents who reported using this medium, two (6.06 percent) rated it Effective and one (3.03 percent) rated it Very Effective.

Television ranked second in effectiveness by users, with a mean of 1.62 or Effective. Of the 13 users, 6 (18.18 percent) rated it Not Effective, with 6 (18.18 percent) rating it Effective, and one (3.03 percent) rating it Very Effective.

TABLE VII

RATING OF EFFECTIVENESS OF MASS MEDIA AS SOURCES OF INFORMATION OR ASSISTANCE

Media Source	Distribution by Level of Frequency								Mean Effectiveness Rating for Users
	Not Effective		Effective		Very Effective		Total		
	#	%	#	%	#	%	#	%	
Local & State Newspaper	8	24.24	6	18.18	0	00.00	14	42.42	1.43 - Not Effective
Radio	0	00.00	2	6.06	1	3.03	3	9.09	2.33 - Not Effective
Television	6	18.18	6	18.18	1	3.03	13	39.39	1.62 - Not Effective

Newspapers received a mean effectiveness rating of 1.43, or Not Effective. Of those 14 respondents who rated, 8 (24.24 percent) rated these Not Effective and 6 (18.18 percent) rated them Effective.

Individuals as Sources of Information or Assistance

Frequency Utilized

Respondents were asked to indicate the frequency with which selected individuals were utilized as sources of information. Table VIII was developed to summarize those ratings, which were on a 0 to 4 scale, with 4 being Daily and 0 being Never.

Veternarians were the individuals most utilized by respondents. Of the 33 respondents, 21 (63.64 percent) indicated they used these professionals Weekly, while 8 (24.24 percent) utilized them on a Monthly basis. The remaining 12.12 percent said they used these individuals Occasionally. The mean frequency of use rating was 2.52, or Weekly.

The A.I. Representative ranked second in terms of mean frequency of use. Of the 30 users, 3 (9.09 percent) said they used them Weekly, 19 (57.58 percent) indicated they used them on a Monthly basis, and 8 (24.24 percent) utilized them Occasionally. The remaining 3 respondents (9.09 percent) indicated they Never use A.I. Representatives as information source. The A.I. Representative was determined to have a mean frequency of use rating of 1.83, or Monthly.

TABLE VIII

RATINGS OF FREQUENCY OF USE OF INDIVIDUALS
AS SOURCES OF INFORMATION OR ASSISTANCE

Individuals Used	Distribution by Frequency of Use												
	Daily		Weekly		Monthly		Occasionally		Never		Total		Mean Frequency of Use Ratings for Users
	#	%	#	%	#	%	#	%	#	%	#	%	
Agricultural Sales Reps.	0	00.00	6	18.18	11	33.33	12	36.36	4	12.12	29	87.88	1.79 - Monthly
County Extension Agent	0	00.00	3	9.09	7	21.21	17	51.52	6	18.18	27	81.82	1.49 - Occasionally
Area Extension Specialist	0	00.00	0	00.00	2	6.06	13	39.39	18	54.55	15	45.45	1.13 - Occasionally
State Extension Specialist	0	00.00	0	00.00	5	15.15	12	36.36	16	48.48	17	51.52	1.29 - Occasionally
Local Vo-Ag Teacher	0	00.00	0	00.00	0	00.00	4	12.12	29	87.88	4	12.12	1.00 - Occasionally
Friends/Relatives	2	6.06	11	33.33	3	9.09	12	36.36	5	15.15	28	84.85	2.11 - Occasionally
Veterinarian	0	00.00	21	63.64	8	24.24	4	12.12	0	00.00	33	100.00	2.52 - Weekly
A.I. Representative	0	00.00	3	9.09	19	57.58	8	24.24	3	9.09	30	90.91	1.83 - Monthly
Milk Sanitarian	0	00.00	0	00.00	5	15.15	25	75.76	3	9.09	30	90.91	1.17 - Occasionally
Milk Marketing Co-Op Fieldman	2	6.06	1	3.03	10	30.30	17	51.52	3	9.09	30	90.91	1.60 - Monthly
Consultant (Paid)	0	00.00	0	00.00	2	6.06	1	3.03	30	90.91	3	9.09	1.67 - Monthly
Other Individuals	3	9.09	0	00.00	1	3.03	1	3.03	28	84.85	5	15.15	3.00 - Monthly

The Milk Sanitarian was also used by 30 respondents. Of those 30 users, 5 (15.15 percent) indicated they use these persons on a Monthly basis, while 25 (75.76 percent) utilized them Occasionally. Only 3 dairymen reported they never use Milk Sanitarian as sources of information or assistance. For those who did use these individuals, the mean frequency of use rating was 1.17-Occasionally.

The Milk Marketing Co-op Fieldman was also utilized by 30 respondents. Only 2 (6.06 percent) utilized them on a Daily basis, while one (3.03 percent) used them Weekly. The majority of users said they used them Monthly (30.30 percent or 6 producers) and Occasionally (51.52 percent or 17 producers). When calculated across the users, the mean frequency of use rating was 1.60-Monthly.

Other individuals that were utilized by respondents, arranged in order by the number of producers using, along with their mean frequency of use ratings from these dairymen included: Agribusiness Sales Representative, 1.79-Monthly; Friends/Relatives, 2.11-Monthly; County Extension Agent, 1.48-Occasionally; State Extension Specialist, 1.29-Occasionally; and Area Extension Specialist, 1.13-Occasionally.

Individuals that were the least utilized as sources of information were Other Individuals (5 users), local Vo-Ag teacher (4 users), and Paid Consultant (3 users).

Effectiveness

Respondents then rated the effectiveness of the individual information sources they had used, with these results being displayed in Table IX.

The Paid Consultant was rated as the most effective individual by respondents who used them. Of the three users, all rated the individual very effective. The mean effectiveness rating was 3.00, or Very Effective.

Other individuals, under which were listed Wives and the Noble Research Foundation, ranked second in rating of effectiveness by users. Of the five users, one (20.00 percent) rated them Effective. The remaining 80 percent indicated they were Very Effective. The mean effectiveness rating for these individuals was 2.80, or Very Effective.

The Veterinarian received the third highest rating for effectiveness. Of those 33 respondents who reported using them, one (3.03 percent) rated them Not Effective, while 6 (18.18 percent) said they were Effective. The remaining 78.79 percent indicated they were Very Effective. The Veterinarian had a mean effectiveness rating of 2.76, or Very Effective.

The A.I. Representatives were assigned a mean effectiveness rating of 2.48-Monthly. Of the 31 users, one (3.23 percent) rated them Not Effective, 14 (45.16 percent) indicated they were Effective, while 16 (51.61 percent) said they were Very Effective.

Other mean effectiveness ratings for individuals included: State Extension Specialist with a mean of 2.41, or Effective;

TABLE IX

RATINGS OF EFFECTIVENESS OF INDIVIDUALS AS SOURCES OF INFORMATION OR ASSISTANCE

Individual Sales	Distribution by Levels of Effectiveness								Mean Effectiveness Rating for Users
	Not Effective		Effective		Very Effective		Total		
	#	%	#	%	#	%	#	%	
Agricultural Sales Representative	4	13.79	17	58.62	8	27.59	29	87.88	2.14 - Effective
Cooperative Extension Agent	3	11.11	17	62.96	7	25.93	27	81.82	2.15 - Effective
Area Extension Specialist	2	13.33	11	73.33	2	13.33	15	45.45	2.00 - Effective
State Extension Specialist	1	5.88	8	47.06	8	47.06	17	51.52	2.41 - Effective
Local Vo-Ag Teacher	1	25.00	2	50.00	1	25.00	4	12.12	2.09 - Effective
Friends/Relatives	2	7.14	18	64.29	8	28.57	28	84.85	2.21 - Effective
Veterinarian	1	3.03	6	18.18	26	78.79	33	100.00	2.76 - Very Effective
A.I. Representative	1	3.23	14	45.16	16	51.61	31	93.94	2.48 - Effective
Milk Sanitarian	3	10.00	19	63.33	8	26.67	30	90.91	2.17 - Effective
Milk Marketing Co-Op Fieldman	4	13.33	17	56.67	9	30.00	30	90.91	2.17 - Effective
Consultant (Paid)	0	00.00	0	00.00	3	100.00	3	9.09	3.00 - Very Effective
Other Individuals	0	00.00	1	20.00	4	80.00	5	15.15	2.80 - Very Effective

friends/relatives with a mean of 2.21, or Effective; milk sanitarian and milk marketing co-op fieldman with a mean of 2.17, or Effective; and County Extension Agent with a mean of 2.15, or Effective.

The three lowest ranked individuals utilized as sources of information or assistance were agribusiness sales representative at 2.14, local Vo-Ag teacher at 2.09, and Area Extension Specialist at 2.00. These three individuals were considered Effective on the average according to the respondents.

Selected Comments

Selected comments made by the dairymen were recorded verbatum. Some of the selected responses included:

"I use the Feed Salesman to get the job done."

"Friends and Neighbors are used to see what they think about other ideas."

"My main resource is through experience. I correspond through relatives. Experience is where you get your main information. Success is based upon small changes on daily basis."

"I am not an avid reader of magazines. I just use the articles of interest."

"Computers will take over information. Magazines will give good information. Articles such as Heel Warts give excellent information."

"I wish the future was brighter. Today, you need 500 head to survive."

"County Extension Agent is not very good in dairy."

"Hoard's Dairyman provides good articles which you can rely upon."

"I can't listen to the radio because I am running up cows."

"My wife is considered to be very effective."

"I would not dairy without DHIA Reports. I don't have very good access to OSU Extension Fact Sheets."

"DHIA Reports are a must."

"I would consult with OSU if I was closer."

"I try to side step the Sanitarian whenever I can. I don't use paid consultant unless I have to. Dairy promotions are not very good because the milk check isn't big enough."

"OSU Extension Fact Sheets are filed away and used as needed."

"Most tips come from Hoard's Dairyman."

"Not enough information on new products like BST from sources other than the BST distributors."

"Dairy Herd Management is the best magazine."

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Study

The purpose of this chapter was to summarize the study's procedures and findings relative to the purpose and objectives. Also presented are conclusions and recommendations based upon the analysis of data collected and observations made in the process of the study.

Purpose

The purpose of this study was to determine the value and manner of use of information resources by a group of successful Oklahoma dairy producers.

Objectives

In order to accomplish the purpose, the following objectives were established:

1. To determine selected demographic data about the respondents.
2. To determine sources of information, advice, or assistance the selected dairymen utilize.
3. To determine the frequency of use and effectiveness of the resources.

Procedures

A telephone survey was conducted with Oklahoma DHIA producers concerning their sources and assistance of information utilized on the dairy. The population for this study was the 261 dairy producers from the Oklahoma DHIA list.

The sample consisted of the top 17 percent of dairy producers, whose herd size was 15 or more cows and who participated in the DHIA program. This included a total of 44. There were 11 non-respondents, resulting in a 75 percent response rate. This particular sample was utilized based upon the success in terms of milk production. Average annual milk production ranged from 18,672 pounds to 24,046 pounds.

The instrument was developed by the researcher based on a review of related literature. A panel of experts and a trial test provided content validity for the instrument. This instrument asked producers to identify information sources and assistance, how frequently they utilize the information sources, and the perceived effectiveness of the information sources or assistance. Information sources identified were rated by the producers for frequency of use on a five point Likert-type scale (0-Never, 1-Occasionally, 2-Monthly, 3-Weekly, 4-Daily). The information sources were also rated by the producer for effectiveness on a 3-point Likert-type scale (1-Not Effective, 2-Effective, 3-Very Effective). It was assumed this was an interval scale and absolute values were set for purposes of interpreting findings.

Major Findings

Several demographic characteristics were obtained from the 33 dairymen who participated in the study. The average age was 47.45, with the range of age being from 31 to 74. Almost one-half (42.42%) of the group were in the age category, 36-50. Well over two-thirds of the producers plan to continue dairying for more than 11 years into the future, with just under one-fourth (21.21 percent) indicating they will dairy less than five years more. Nearly one-half (45.45 percnet) of the group indicated that high school was the highest level of education attained; however one-third (33.33 percent) had earned the B.S. Degree. The average educational attainment was 13.87 years. Almost one-half (42.42 percent) of those participating utilized computers in their operations, with nearly one-fourth (24.24 percent) having satellite dishes. The family members plus hired help was the labor source for almost two-thirds (63.64 percent) of the respondents.

The respondents who participated in the study were asked to indicate the frequency of use and their judgements of the effectiveness of specific sources of information within the categories of Magazines, Scientific/Extension Publications, Mass Media and Individuals. The combined findings in these regards are summarized in Table X.

The top five magazines, in descending order with the numbers and percentages of producers using were: Hoard's Dairyman, 33-100 percent; Dairy Today, 18-54.55 percent; Dairy Herd Management, 14-42.42 percent; Dairyman's Digest, 13-39.39 percent; and Hosltein

TABLE X

SUMMARY OF PROPORTIONS OF USERS, FREQUENCY OF USE RATINGS AND EFFECTIVENESS RATINGS OF INFORMATION SOURCES UTILIZED BY RESPONDENTS

Information Sources	Number Using	Percent Using	Mean Frequency of Use	Mean Effectiveness
MAGAZINES				
Holstein World	12	36.36	2.00-Monthly	2.33-Effective
Dairy Herd Management	14	42.42	2.14-Monthly	2.57-Very Effective
Dairy Illustrated	1	3.03	2.00-Monthly	2.00-Effective
The Dairyman	6	18.18	2.17-Monthly	2.50-Very Effective
Dairyman's Digest	13	39.39	2.08-Monthly	1.92-Effective
Farm Future	1	3.03	2.00-Monthly	2.00-Effective
Farm Talk	2	6.06	2.00-Monthly	2.00-Effective
Hoard's Dairyman	33	100.00	2.13-Monthly	2.48-Effective
Oklahoma Farmer's Stockman	4	12.12	2.00-Monthly	2.25-Effective
Progressive Farmer	4	12.12	2.00-Monthly	2.25-Effective
Dairy Today	18	54.55	2.06-Monthly	2.44-Effective
Western Dairyman	2	6.06	2.50-Weekly	2.00-Effective
High Plains Journal	3	9.09	2.67-Weekly	2.33-Effective
Top Producer	3	9.09	1.67-Monthly	2.33-Effective
Farm Journal	6	18.18	1.83-Monthly	2.17-Effective
Dairy Edition Farmer	1	3.03	1.00-Occasionally	2.00-Effective
SCIENTIFIC/EXTENSION				
Mastitis Council	1	3.03	3.00-Weekly	3.00-Very Effective
DHIA	33	100.00	3.09-Weekly	2.88-Very Effective
Extension Fact Sheets	27	81.82	1.56-Monthly	2.11-Effective
MASS Media				
Local & State Newspaper	14	42.42	3.00-Weekly	1.43-Not Effective
Radio	3	9.09	2.67-Weekly	2.33-Effective
Television	13	39.39	2.77-Weekly	1.62-Effective
INDIVIDUALS				
Agricultural Sales Rep	29	87.88	1.79-Monthly	2.14-Effective
Cooperative Extension Agent	27	81.82	1.48-Occasionally	2.15-Effective
Area Extension Specialist	15	45.45	1.13-Occasionally	2.00-Effective
State Extension Specialist	17	51.52	1.29-Occasionally	2.41-Effective
Local Vo-Ag Teacher	4	12.12	1.00-Occasionally	2.09-Effective
Friends/Relatives	28	84.85	2.11-Occasionally	2.21-Effective
Veterinarian	33	100.00	2.52-Weekly	2.76-Very Effective
A.I. Representative	30	90.91	1.83-Monthly	2.48-Effective
Milk Sanitarian	30	90.91	1.17-Occasionally	2.17-Effective
Milk Mktg Co-Op Fieldman	30	90.91	1.60-Monthly	2.17-Effective
Consultant (Paid)	3	9.09	1.67-Monthly	3.00-Very Effective
Other Individuals	5	15.15	3.00-Weekly	2.80-Very Effective

World, 12-36.36 percent. The publication receiving the highest frequency of use rating, 2.67-Weekly, was High Plains Journal, but this was used by only three producers. The one with the next highest frequency of use rating was Western Dairyman, the two respondents who reported using the periodical, assigning the rating of 2.50-Weekly. Dairy Edition Farmer was used by one dairyman, who said it was consulted Occassionally, with a 1.00 mean rating. The mean frequency of use ratings of all of the other publications were determined to be in the Monthly category. In terms of effectiveness, the most highly rated magazine was Dairy Herd Management, which received a 2.57-Very Effective assessement from the 14 users. Also receiving a Very Effective rating was The Dairyman, for which a 2.50 mean response was calculated. With 2.48 and 2.44 mean effectivness ratings respectively, Hoard's Dairyman and Dairy Today were at the top end of the Effective category. The remainder of the publications all received lower levels of mean responses, but each was still classified as Effective.

Scientific/Extension materials as sources of information or assistance were also investigated. Included in these were publications from DHIA which were used by all of the dairymen participating in the study. Close behind were OSU Extension Fact Sheets, utilized by 27 (81.82 percent) of the respondents. Only one other source of this type, Mastitis Council, was identified and this by only one participant. According to inputs from those surveyed, DHIA materials were on the average consulted Weekly and were evaluated as Very Effective as indicated by the 3.09 and 2.88

respective mean responses. By the 1.56 mean frequency of use response, the 27 producers revealed they secured information or assistance from OSU Extension Fact Sheets on a Monthly basis. However, this value was at the lower end of the Monthly scale. The one producer using Mastitis Council did so Weekly and considered this source to be Very Effective.

Mass Media, which included Local and State Newspapers, Radio, and Television, were another information/assistance source for which data were collected. Just under one-half of the dairy farmers responding (42.42 percent) said they utilized Local and State Newspapers, and assigned these media a mean frequency of use rating of 3.00-Weekly. Their mean effectiveness rating of these sources was 1.43-Not Effective. Thirteen participants (39.39 percent) responded that they used Television for this purpose, on a Weekly basis and that on the average they considered this medium to be Effective. Only three reported utilizing Radio in this way. They indicated using Radio Weekly and assessed this source as Effective.

Respondents were also asked to indicate individuals from whom they sought information or assistance. As indicated in Table X, they identified a rather lengthy list. The top seven individuals in descending order with the numbers and percentages of producers using were: Veterinarian, 33-100 percent; A.I. Representative, Milk Sanitarian, and Milk Marketing Co-op Fieldman, 30-90.91 percent; Agricultural Sales Representative, 29-87.88 percent; Friends/ Relatives, 28-84.85 percnet; and Cooperative Extension Agent, 27-81.82 percent. Other individuals were assigned the highest

frequency of use rating, 3.00-Weekly, but were only utilized by five producers. The one with the next highest frequency of use rating was the Veterinarian, with a rating of 2.52-Weekly. Friends/ Relatives, A.I. Representative, Agricultural Sales Representative, Consultant (paid), and Milk Marketing Co-op Fieldman were assigned respective ratings of 2.11, 1.83, 1.79, 1.67, and 1.60 which were categorized as Monthly. The remaining individuals were determined to be in the Occassionally category based upon the mean frequency of use ratings. In terms of effectiveness, the most highly rated individual was the Consultant (paid), which was assigned a 3.00-Very Effective rating from only three users. Also receiving a Very Effective rating was Other Individuals and Veterinarian, for which a respective mean response of 2.80 and 2.76 was calculated. The remainder of individuals were categorized as Effective.

Conclusions

Based on the analysis of data and subsequent findings from completed surveys of Oklahoma dairy producers contacted, it was concluded that:

1. Dairying is considered the primary source of income.
2. The average age of dairymen in this study was substantially lower than the average age of other agricultural producers in Oklahoma.
3. The majority of these producers are committed to continue dairying on a long range basis.

4. Hoard's Dairyman, Dairy Herd Management, and Dairy Today had the highest overall combinations of number of users, frequency of use ratings and effectiveness ratings and therefore the magazines which are the top sources of information and assistance for dairy producers in this study.

5. DHIA Reports were definitely the best Scientific/Extension materials utilized by this group of producers.

6. Newspapers were considered the best mass media dissementators of information.

7. In assimilating the number of users, frequency of use ratings, and effectiveness ratings, the Veternarian, Friends/ Relatives, and the A.I. Representative have the highest combinations.

8. For this group of producers, the best source of information or assistance, in order, would be Hoard's Dairyman, then Veterinarian, DHIA Reports, and Dairy Herd Management.

Recommendations

1. Since these top producing dairymen use some sources more than others to acquire information they need in making decisions as well as rating some sources more effective, it is recommended those seeking to promote change and to disseminate information fully utilize the capabilities of those highly used sources such as the Hoard's Dairyman, DHIA Reports, television programs, and veterinarians for disseminating information relating to dairy management practices.

2. It is recommended that change agents should concentrate on disseminating selected information through the mass media to reach larger audiences and encourage the rate of adoption.

3. It is recommended that Extension Agents use the channels of communication available to them to reach people who have never used the information sources available to them.

4. It is recommended that the Cooperative Extension Service as well as change agents recognize and use the producers' expertise in improving educational materials and programs. It is further recommended a greater recognition of producer needs in improving educational materials.

5. It is recommended that the Cooperative Extension Service continuously have updated information from the County to the State level.

Recommendations for Additional Research

1. It is recommended that a correlational study be conducted between the lower 20 percent and the upper 20 percent of dairymen in terms of milk production to compare the frequency, effectiveness, and convenience of information sources utilized on the dairy.

2. It is recommended that a study be conducted to determine the information sources utilized on the dairy relating to specific competency areas such as nutrition, reproduction, and management, etc.

3. It is recommended that a study be conducted to determine the effectiveness and frequency of information or assistance utilized on the dairies which are not participants in the DHIA program.

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APPENDIXES

APPENDIX A

QUESTIONNAIRE

A selected number of Oklahoma dairy producers will be contacted in the coming weeks as part of an Oklahoma State University research study regarding sources of information utilized on the dairy. My name is Denton Blevins and I will be conducting a telephone survey to gather needed data from producers. The research findings will provide many benefits in support of the dairy industry. Your cooperation will be greatly appreciated.

Sincerely,

Denton Blevins

DAIRY FARMER INFORMATION SOURCES
TELEPHONE QUESTIONNAIRE

Name_____

Date_____ Time _____ Phone _____

Hello, my name is Denton Blevins and I'm with the Department of Agricultural Education at Oklahoma State University. We are surveying Oklahoma dairy producers about their sources of information. I sent a postcard explaining the study about two weeks ago, do you remember seeing it? The information you give me is confidential and will be reported in group data only, your name and your specific responses will not be used.

My questions will take about 5 minutes, is now a good time?

If NO, when? _____ DATE _____TIME

Again, we are interested in where you get information and advice related to dairy farming. I'll be asking you some questions about specific sources of information. If you have any questions along the way, stop me and I'll explain them further. Are you ready?

In this first set of questions, I want to know what magazines, newspapers, TV or radio programs you read or listen to for information related to your dairy. So, what are some. (After the client gives periodicals, ask frequency) Now, I'd like to know how frequently you use it. Tell me if you use the source: daily, weekly, monthly, occassionally, or never.

Frequency	Source	Effectiveness
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	DHIA Reports_____	_____
_____	OSU Extension Fact Sheets _____	_____
_____	Newspaper _____	_____
_____	Newspaper _____	_____
_____	Newspaper _____	_____
_____	Radio - _____	_____
_____	Radio - _____	_____
_____	Television - _____	_____
_____	Television - _____	_____

Ok, now I would like to know how effective the information is from these sources. As I read them back to you, rate them as being: not effective, effective, or very effective.

The second half of the survey, is about people you reley on for information about your dairy. Here, I'll read a list of possible contacts and you can tell me how frequently you use them for information. Tell me if you use the source: daily, weekly, monthly, occassionally, or never.

Frequency	Source	Effectiveness
_____	Agribusiness Sales Rep. _____	_____
_____	CES Professional (County) _____	_____
_____	CES Professional (Area) _____	_____
_____	CES Professional (State) _____	_____
_____	Local Vo Ag Teacher _____	_____
_____	Friends/Relatives _____	_____
_____	Veterinarian _____	_____
_____	A.I. Rep. _____	_____
_____	Sanitarian _____	_____
_____	Milk Marketing Coop _____	_____
_____	Paid Consultant _____	_____

Can you think of anyone else you rely on for information?

Ok, now I would like to know how effective the information is from these sources. As I read them back to you, rate them as being: not effective, effective, very effective.

I only have a couple of questions left.

Do you have a microcomputer? __

Do you have a satellite dish _____

How old are you? _____

How long have you been in the dairy business? _____

How long do you plan to stay in the dairy business? _____

What is the highest grade level you completed: _____

If any college, what was your major? _____

How would you describe the labor on this farm:

_____*All by herd owner*
_____*Herd owner and family*
_____*Herd owner, family and some hired help*
_____*Mostly hired help*
_____*All hired help*

(YES) (NO) Is dairying considered your primary source of income?

That's all my questions, do you have any comments:

_____

_____

_____

APPENDIX B

INSTITUTIONAL REVIEW BOARD APPROVAL FORM

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 03-23-94 **IRB#:** AG-94-021

Proposal Title: SOURCES AND ASSISTANCE UTILIZED BY A SELECTED GROUP OF DAIRY PRODUCERS FROM OKLAHOMA

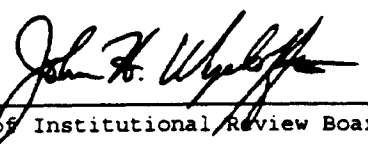
Principal Investigator(s): Dr. Robert Terry, Denton Blevins

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

APPROVAL STATUS SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING.
APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL. ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval are as follows:

Signature:  Date: March 30, 1994

Chair of Institutional Review Board

VITA

Denton Blevins

Candidate for the Degree of

Master of Science

Thesis: SOURCES OF INFORMATION AND ASSISTANCE UTILIZED BY A SELECTED GROUP OF DAIRY PRODUCERS FROM OKLAHOMA

Major field: Agricultural Education

Biographical:

Personal Data: Born in Homer, Louisiana, July 20, 1970, the son of Denton and Billie Blevins.

Education: Graduated from Tuttle High School, Tuttle, Oklahoma, 1988; received Bachelor of Science degree in Animal Science from Oklahoma State University in December, 1992; received Master of Science degree from Oklahoma State University in July, 1994.

Professional Experience: Graduate Research Assistant, Oklahoma State University, June, 1994 to present.