KAY COUNTY AGRICULTURAL PRODUCERS' USE AND PERCEIVED EFFECTIVENESS OF SELECTED EXTENSION SERVICE PROGRAM DELIVERY METHODS

By

WATIE DALE GOODWIN

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Thesis Approved:

Robert Terry

Thesis Adviser

William T. Weeks

James P. Key

Timothy J. Pettitt

Dean of the Graduate College

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CHAPTER I

INTRODUCTION

Background and Setting

The Cooperative Extension Service is recognized as a reliable, non-biased, research based source of information for rural America. Cooperative Extension is seen as a link between the producers and the users of scientific knowledge. According to the Smith-Lever Act of 1914, Cooperative Extension work is the "diffusing among the people of useful and practical information on subjects relating to agriculture and home economics." Furthermore, it encourages the application of information in meeting individual and societal needs (Awa & Crowder, 1997).

Agriculture has changed immensely since the Smith-Lever Act of 1914 established the Cooperative Extension Service as part of the Land Grant University System. The county extension agent is no longer the sole source of agricultural information as he/she was in the early days of extension service. The public now has a vast amount of informative sources available to it. In order to best serve the public, cooperative extension is continuously developing new ways to deliver research-based, non-biased information in a timely, efficient manner.

Knowing the method of learning preferred by the audience to be addressed is a major area of concern for many extension professionals. The three primary methods of information delivery are: (1) individual contact, (2) group contact and (3) mass media contact. The extension professional assesses each learning situation and decides which method of learning is most appropriate for the subject matter and the situation at hand. However, to complicate the situation extension agents must evaluate the amount of time required to carry out the various educational methods while recognizing their roles as agents are varied and multifaceted covering many subject areas hence, time is an essential element in planning each learning/teaching endeavor.

Research into the preferred learning styles of the extension audience is somewhat limited especially when "agricultural audience" is specified. Extension professionals often ask; "What contact methods do adults perceive as being useful and effective? Do they strongly favor one method over another? How do we know what the audience thinks of what we are doing? Do different groups prefer different delivery methods or are they all the same?" This study focused on determining an Extension clientele group's extent of use of certain methods of program delivery and contact and their evaluation of the effectiveness of these. Their responses were evaluated to determine if certain variables alter preferences in delivery and contact methods. The outcomes of this study should assist agricultural extension educators in choosing delivery and contact methods.

Statement of the Problem

The Cooperative Extension agricultural agent has traditionally been seen as an informed, unbiased source of research-based information for production agriculturalists. Early agents laid the groundwork which today's agents stand on. In the early years of the Cooperative Extension Service, agents were the primary source of this research-based information to the public. In today's progressive agricultural system, technological advancements have enabled many other sources of information to be at the fingertips of individuals. These sources of information often come in the form of salesmen or company representatives who are often biased toward the particular product or service they are offering for sale.

The Internet is also a source of information for many individuals and has a wealth of information at the click of a button. Still, the Cooperative Extension Service maintains the significant status of being the largest source of research-based, non-biased information available. In studies pertaining to sources of information available to producers (Awa & Crowder, 1977), the Agriculture Extension agent is consistently perceived to be a trustworthy source of information that is non-biased in recommendations.

To remain reputable, agents must be able to deliver information in a timely, efficient, learner-friendly manner. In order to maintain and enhance their standing with the public and provide outstanding service, extension agents must know where to locate the needed information, when to deliver the information, and how to deliver this information to the particular audience in need of it. With the increase in technology and

the changing of agriculture in general, the latter of the three areas is becoming increasingly complex to determine. The agent must determine which delivery methods are preferred and considered to be most effective by the public being served.

As the clientele of Extension change, so must agents change to accommodate their need for information. The percentage of U.S. agricultural population engaged in part-time production agriculture is growing while the percentage of population engaged in full-time agricultural production is getting smaller. The educational level of producers is also changing compared to past times which makes for a much more informed, knowledge thirsty population. New technology also offers agents more options in delivery methods. Due to the combination of these factors, a study was needed to determine the perceived effectiveness of various delivery methods and the delivery methods that are currently preferred by agriculture producers served by extension agricultural agents.

Purpose of the Study

The purpose of this study was to determine Kay County, Oklahoma agricultural producers' perceptions of the frequency of use and effectiveness of a selected set of Cooperative Extension Service delivery and contact methods

Objectives of the Study

The specific objectives of the study were to:

1. Determine the extent to which agricultural producers in Kay County have used selected program delivery and contact methods during the past three years.
2. Secure producers' perceptions of the effectiveness of each of the selected program delivery and contact methods
3. Determine if producers differ in extent of use and perceptions of effectiveness of delivery and contact methods according to:
   A. Full or part-time status,
   B. Type of farm production
   C. Age, and
   D. Level of education.

Definition of Terms

The following terms and definitions are presented as they apply to this study:

Agricultural Producer – An individual engaged in the practice of farming or ranching to produce food crops or livestock.

Cooperative Extension Service – The organization created by the Smith-Lever Act in Congress in 1914 that is charged with translating and disseminating researched-based information in agriculture, home economics and related areas to the public. For this study the terms "Extension," "Cooperative Extension," and "Extension Service" will be used interchangeably.

Delivery Methods – Tools used by educators to deliver, distribute, or relate information to an audience seeking the information.

Extension Agent – pertains to individual employed by the Cooperative Extension Service to perform the designated and assigned tasks of the organization. The terms "Agricultural Agent," "County Agent," "County Extension Agent," "Educator," "Extension Agent," "Extension Educator," and "Extension Professional" will be used synonymously in this study.

Group Contact – Occasion at which an educator interacts with a group of more than one person at a time.

Individual Contact – Occasion at which an educator interacts with only one person at a time.

Mass Media Contact – Event, occasion or activity by which an educator reaches large numbers of people in a particular situation.

Perception – An individual's belief or observation of value derived from a particular event or situation.

Scope of the Study

This study utilized agricultural producers who were logged in to the agricultural database of the Kay County office of the Oklahoma State University Cooperative Extension Service as of April 1, 2002, a total of 690 individuals. Therefore, findings of the study may be generalized only to producers in this county; however, extension professionals from other counties may find relevance in the findings for the methods of program delivery and contact they employ.

Basic Assumptions of the Study

The following assumptions were made in regard to this study:

1. The producers were able to recall accurately the extent to which they have been involved with the selected delivery and contact methods over the past three years period.
2. Producers provided accurate assessments of the effectiveness of each delivery and contact method.

CHAPTER II

REVIEW OF LITERATURE

Introduction

For purposes of clarity the review of literature was organized into five sections as follows:

1. The Role of Cooperative Extension in Adult Education
2. The Importance of Agricultural Information
3. Individual Contact Program Delivery Methods
4. Group Contact Program Delivery Methods
5. Mass Media Contact Program Delivery Methods

The Role of Cooperative Extension in Adult Education

The Federal Government created the Cooperative Extension Service in 1914 as part of the Land Grant University system in the form of the Smith-Lever Act. The function of the Cooperative Extension Service was to translate research-based information in Agriculture, Home Economics and related areas from the land grant universities where the research was conducted to the people of our nation where it was needed in practical, easy to understand dialogue. The first as well as present role of Extension was to help people by teaching them how to help themselves. The old saying

"give a man a fish and you feed him for a day but, teach a man to fish and you feed him for a lifetime" is especially true where Cooperative Extension is concerned. The Cooperative Extension Service has individuals working for it in the role of Extension Agents whose job responsibilities include helping people to help themselves in order to increase their agriculture production and enhance their way of life.

The Extension agent's job is multi-faceted in that the agent must know or have access to information on broad topics such as agronomy, livestock, horticulture, rural development, natural resources and 4-H/youth development. Within each broad topic area is an array of specific topics an agent is expected to be able to help the public with. Fortunately, in many topic areas there are state and area extension specialists who give support to the county level agent. These valued specialists are a tremendous resource and are usually the individuals who are matter trained. Having this subject matter education and gaining real life experiences in the field these individuals soon become experts in their particular area. Consequently agents rely on these individuals heavily to help answer specific questions related to agriculture. Awa and Crowder (1977) findings indicated that if faced with conflicting reports, producers would overwhelmingly choose an Extension agent (81.1% as opposed to 5.7% for commercial dealers).

According to Caldwell and Richardson (1995), the Cooperative Extension System seeks to deliver research-based technology and lifelong learning opportunities to the nations' citizens. Awa and Crowder (1977) said, in it's linking role, Extension gathers research-based knowledge, derives practical information from it, and transmits it in an understandable form to potential users. To accomplish its mission, Extension is constantly changing and adapting to meet the shifting needs and priorities of the people it

serves. The ultimate goal is to reach targeted audiences and provide the information they need in a manner which they prefer (Caldwell & Richardson, 1995). In order to accomplish this, the Extension Educator must be creative and resourceful as well as very attentive to the needs and preferences of the population being served. Extension programming is not a "one-size fits all" situation. Most of the agriculture extension audience in Oklahoma has traditionally been adult, white male engaged in full-time production agriculture. Reasoning for this is that most of the agriculture production population (farmers and ranchers) has been comprised this way. This group has changed within its self as agriculture has become increasingly more challenging and less profitable for many individuals.

Skeeles (1991) found more than half of the farm and ranch operators in the United States work off the farm and more than one-third work off the farm or ranch more than 200 days per year. Today, as times have changed and Extension extends itself to new audiences in the form of programs such as the Master Gardener Volunteer Program, the composition of the audience sometimes changes drastically. Gross (1976) asked, "Do you ever wonder how people feel about our programs? What do the people whose contact is through mass media think of us? We can gauge the feeling of those with whom we are in direct contact-but what about others?" Considering the dynamics of today's society, extension educators need to try innovative ways to reach audiences that are not reached by or those that don't attend traditional Extension educational programs (Mechenich, 1993). Sunnaborg, Bradley and Haynes (1988) recommend that two essential ingredients to consider would be: (1) fit the subject matter to the needs of the

target group and (2) develop innovative training and delivery methods at the educational level of the group.

The Importance of Agricultural Information

Having accurate, timely information has never been more important in agriculture than it is today. Information helps producers make decisions on farming practices, crop and livestock production, machinery, and supply purchases, genetic improvement of crops and livestock, commodity buying and selling, farm, agri-business and personal financing, and literally thousands of other decisions everyday. Having reliable, accurate and timely information is vital in making sound decisions. For example, knowing the results from the latest wheat variety trial will allow wheat producers to make a more educated decision on what varieties to plant for the intended purposes. Planting a variety without the strength and disease resistance needed could prove to be disastrous before harvest time. Because of this, an Extension educator must get the applicable information in the hands of producers in time for them to decide on what varieties to plant and secure the seed before planting time assisting the farmer where needed.

The value of information as a commodity in today's information age cannot be over emphasized since it has contributed immensely to the stagnation or progressiveness of many farming operations (Riesenberg & Gor, 1989). In today's agricultural industry, survival often depends on having an edge on information related to the market, efficient allocation of available resources, and use of new or innovative farming practices (Fedale, 1987).

Individual Contact Program Delivery Methods

Individual contact program delivery methods have been widely used by the Extension Service since it's inception in 1914. Personal contact has been the primary way to get people involved in Extension programs for many years and continues to be a favored method by many producers. Individual contact is the act of an agent interacting with only one person at a time. This method requires the most interaction between sender and receiver of information and is oftentimes consuming and expensive compared to other methods but is usually highly effective in regards to making sure information is understood.

Ford and Babb (1989) found that farmers in the Midwest and Southeast showed a preference for personal, service-oriented information as opposed to written information. In the same study, Ford and Babb found the extension service to be the primary source of information for cropping decisions for 25% of the Southeast respondents.

Riesenberg and Gor (1989) found that the farmers in Nez Perce County, Idaho preferred interpersonal methods of receiving information on new and innovative farming practices, e.g. on-farm demonstrations, tours and field trips, over the mass media methods, e.g. computer-assisted instruction and home study and that interpersonal (on-farm demonstrations) and mass media (home study) methods were at opposite ends of the preference scale.

Gross (1976) in measuring the attitudes of Clinton County, Missouri farmers, however, found that the individual contact received lower marks on a preference scale than did other methods of contact because on office visits or telephone call, quite often

the staff member is out of the office and a delay is encountered in answering the request or inquiry.

Petrzelka, Padgitt and Wintersteen (1999) in an Iowa survey stated :

> One-on-one consultations are of great use to Extension clients, beneficial change is made, and there is an opportunity to have measurable impact. Thus a change in human and financial capital of the client is one benefit that arises with individual consultation. (pp. 14)

There are several different types of individual contact methods that can be used by the Agriculture Extension Agent. Some contact is initiated by the agent while others are initiated by the individual in need of information or assistance. These methods include but are not limited to: (1) farm and home visits by the agent to producer's site, (2) office visits by the producer to the Extension office, (3) on-farm demonstrations conducted by the Extension agent, (4) telephone calls initiated by either party, (5) producer visits to experiment stations or field stations, (6) producer visits to the university, (7) visits by university specialists to the producer's site, (8) personal letter initiated by either party and (9) personal electronic mail initiated by either party.

Seevers (1997) listed several advantages and disadvantages to individual contact methods.

Advantages

1. Provides first hand knowledge
2. Establishes a climate of readiness for learning.
3. Builds confidence in the agent as a reliable source of information.

4. Contributes to the selection of local leaders, demonstrators and cooperators.
5. Aids in contacting individuals not normally reached in Extension activities.
6. Is an effective teaching method. Individual visits are normally a quick and easy way to disseminate information.
7. Develops good public relations.
8. Provides immediate feedback to questions and/or problems.
9. Provides local proof about research recommendations.

Disadvantages

1. Cost per contact is higher than other methods.
2. Limits the number of total contacts that can be made by local Extension professionals.
3. Neglects some clientele who need assistance if caution is not taken to visit with representative families.
4. Requires good planning to offer timely instruction for the farm/home visit.
5. Removes the educator from the actual situation when individual contacts are limited to the office or telephone information.
6. Presents an opportunity for a communication problem when the question is not understood or the answer provided is misunderstood.
7. Projects a poor public image when correspondence or phone calls are not answered promptly.

8. Requires many hours of planning and follow-up if a result demonstration is to be successful.
9. Requires good time management skills to handle constant requests for assistance.

Group Contact Program Delivery Methods

Group contact methods are sometimes considered a happy medium between individual and mass media contact. This method of contact allows an agent to get necessary information to more people at a time than does individual contact and is considerably more personal than mass media contact. The drawbacks are that it is less personal than individual contact and doesn't reach as many people as mass media contact. This method is also considered to be a more efficient use of time than individual contact for both the agent and the producer.

Group contact methods include (1) workshops, (2) tours, (3) conferences, (4) field days, (5) lectures, (6) panel discussions, (7) group demonstrations, (8) seminars and teleconferencing.

Seevers (1997) listed the following advantages and disadvantages of group teaching methods.

Advantages

1. Adaptable to the learning styles of many people.
2. Stimulates action as the learner is involved in seeing, hearing, discussing and participating in the process.

3. Builds confidence in the Extension educator if teaching is performed skillfully.
4. Lends itself to repeated use or demonstrations by local leaders.
5. Reaches a larger number of people.
6. Is adaptable to practically all subject matter.
7. Recognizes the basic need of individuals to have social contact.
8. Relatively low cost.

Disadvantages

1. Requires considerable organization and transport of materials and equipment to the meeting location.
2. Requires a certain amount of showmanship to be successful.
3. Requires professionals to be effective in public speaking and presentation skills.
4. Requires a knowledge of a variety of teaching techniques to be effective.
5. Limits meetings to certain locations due to the size of the audience.
6. Requires considerable investment in equipment.
7. Requires flexibility of scheduling to accommodate audience needs and accessibility.
8. Creates difficult teaching situations due to the diversity of audience interests and needs.

Mass Media Contact Program Delivery Methods

Mass media is a contact method by which the Extension professional can reach large audiences with needed information thereby minimizing the time required to present materials and maximizing agent efficiency. The Extension agent simply cannot reach each and every individual who needs information on a personal contact basis. Therefore, mass media has become an increasingly popular method by which to get the needed information to the public. There are several types of mass media information including but not limited to: (1) newsletters written by the Extension agent and sent to clientele, (2) Radio spots or shows on which the Extension professional offers information to the general public, (3) pamphlets/fact sheets which are published by extension for distribution to the public, (4) newspapers in which the Extension agent submits in writing the information desired to get to the public, (5) Television spots or shows on which the agent presents material to the viewing audience, (6) Exhibits, (7) video tapes, (8) satellite teleconferencing, (9)computer-aided instructional learning,(10) Internet websites and (11) electronic mail.

A study by DeCamp, Richert, Singleton, Vines, and Slipher (Journal of Education, 2001) evaluated pork producers' acceptance of distance education. The results indicated a justification for using distance education programming in Extension. Producers indicated they were willing to try various forms of distance technology after being exposed to it in the hands-on setting provided with the study. Although it was noted that face-to-face meetings were still preferred, distance education was considered by

producers to be a viable option when face-to-face meetings were not possible or practical. Swistick, Sharpe and Disckiso (Journal of Extension, 39, 3, 2001) surveyed participants in a satellite teleconference concerning rural private water usage. When compared to the traditional speaker-led meeting;

> Eighty-one percent of the attendees felt the overall satellite program was good, very good, or excellent. The satellite program easily met the same educational objectives developed for the traditional Safe Drinking Water Clinic. The percentage of attendees who found the program of speakers to be very helpful (66%) was nearly identical to results from the traditional program.

It was assumed that the participants would prefer an in-person meeting over a satellite downlink meeting but the question of how much they prefer it needed to be answered. The participants were asked if they would rather attend an in-person meeting 50 miles away from their home or a satellite program at a location 15 miles from their home. These two options were thought to be comparable in cost and time commitments. The survey results indicated that 66% of the participants preferred the satellite program, 10% preferred the traditional meeting and 24% had no preference.

Awa and Crowder (1977) in a study of Lewis County, New York dairy farmers noted as results of their survey that:

> It's possible that television didn't have a strong impact because it's used primarily for entertainment and hasn't been established as a farm information source. Radio, however, has the potential to be used for farm information programs that may be heard by a sizeable farm audience. The

> inherent problem with television and radio is that they lend themselves only to limited order presentations. The print media, however, have the advantage of being receiver-controlled-a farmer can read and reread a printed material whenever he desires. (pp. 22)

Warmann and Rice (1988) in the results of a survey of Virginia farm operators stated:

> One of the important sources of information listed by the farmers responding to the survey was printed material. The Extension Service has printed material in a variety of forms to reach groups of farmers. Knowing the reading habits of farmers will help identify those publications, which are most often read by farmers and will suggest how the most farmers can be reached. (pp. 7)

One of the newest mass media contact methods is the Internet. This tool is fast becoming common place in many farm households and offers a wealth of information at the fingertips of producers. The Internet contains websites with information pertaining to practically every facet of production agriculture and related interests. The Extension agent and the producer alike find this to be a valuable resource when they are familiar with the computer and have a working knowledge of maneuvering on the Internet.

According to Siegrist, Labarge and Prochaska (Journal of Extension, 1998),

> The increasing use of communication technologies such as fax and e-mail by Extension clientele has opened a new avenue to meet client needs. These communication technologies give Extension the opportunity to be more reactive, efficient, and timely in meeting clientele needs.

Their study looked at efforts by The Ohio State University Extension Agronomic Crops Team in reaching crop producers, agronomic service personnel, and consultants with an electronic newsletter via fax and e-mail. The newsletter titled the Crop Observation and Recommendation Network (CORN), secures input from four academic departments in the College of Food, Agriculture and Environmental Sciences along with County Extension agents specializing in agronomic programming. The parties involved meet via conference call each Monday morning and by Monday afternoon the newsletters are distributed. The newsletter maintains local connection to the county Extension office by being sent to each office for distribution to its' clientele by fax or e-mail. According to three surveys conducted during the first three years of CORN, it is overwhelmingly seen as an effective, valuable, and needed resource in agronomic production. In fact, the latest survey ascribed monetary value to the information disseminated in CORN. It's recipients indicated the publication had helped reduce clientele pest control costs by over 3.8 million dollars in 1996 alone.

Seevers (1997) listed several advantages and disadvantages of mass media contact methods:

Advantages

1. Reaches a large number of people at multiple locations simultaneously.
2. Reaches those who might not otherwise seek information from Extension.
3. Is a timely source of information because of the frequency and regularity with which information can be delivered.
4. Builds confidence in the local program and university recommendations.
5. Creates an awareness of problems, issues, or major points.

6. Reaches people quickly.
7. Is adaptable to a wide range of audiences and subject matter information.
8. Serves as an effective supplement and reinforcement of other teaching activities.
9. Lends itself to being read or viewed at learner's convenience.
10. Builds an audience of sustained readers, listeners or viewers.
11. Processes or steps that require extended periods of time can be telescoped into a few minutes using video

Disadvantages

1. Is more expensive than other methods.
2. Requires constant revision to stay current.
3. Is limited as a teaching tool for audiences who are nonnative speaking or cannot read.
4. Requires training and skills to be effective in written and oral presentations. Some technology requires technical staff assistance.
5. Is ineffective when an editor or producer destroys the intended message or teaching value.
6. Loses effectiveness when educator is not professional in appearance or with presentation techniques.
7. Is normally broadcast or printed at the convenience of the media.
8. Loses out to entertainment radio and television productions.
9. Requires an extensive investment in equipment and network access.
10. Requires considerable production time for most mass media.

11. Time and schedule coordination required for teleconferencing

Riesenberg and Gor (1989) stated the use of mass media methods of information transfer has the potential to greatly increase the efficiency of individual practitioners, but what will be the gain if the users of the information do not prefer, and therefore, cannot or will not utilize the advanced sources.

Theoretical Framework

Information needs of farm managers have risen as market conditions become increasingly affected by global factors and as technologies become more complex (Schnitkey, Batte, Jones & Botomogno, 1992). Charges have been leveled against the Cooperative Extension Service, other change agents, and research centers, that much useful technology has been left sitting idle in research centers for lack of appropriate information dissemination strategies (Malton, Cantrell, King & Benoit-Cattin, 1984). Reisenberg and Gor (1989) suggested:

> the stumbling block has often been the communication gap between researchers and extension personnel on the one hand and farmers on the other. The contention is that the communication gap lies not so much in language or cultural differences as in the methods employed for the dissemination of agricultural information. (pp. 9)

Getting the needed and desired information to the clientele in a timely manner is vital to the success of the Agricultural Extension Agent and the continued support of the public in carrying out the mission of Extension. Agents often wonder how they can get the necessary information to the individuals needing it in the most preferred, productive,

efficient and learner-friendly method possible. There have been conflicting studies conducted about the presentation method preferred by extension clientele in various parts of the United States. Research conducted by Obanayujie and Hillison (1988), found that different audiences prefer different methods such as the part-time cattle farmers preferred personal visits and demonstrations while the full-time cattle farmers preferred newsletters, bulletins, radio, and pamphlets. Reisenberg and Gor (1989) concluded that the two methods requiring the most interaction between sender and receiver of information, on-farm demonstration and tours and field trips, also received the highest performance ratings, while the two methods requiring the least interaction between the sender and receiver of information, home study and computer-assisted instruction, received the lowest preference ratings.

While each delivery method has its strong and weak points, it is often difficult to label one as being more effective than another as was indicated by Richardson (1993). Richardson asked producers to identify the most preferred delivery methods from a list of seventy-two used by Extension. The first three contained one from each category of delivery methods ranking as (1) personal visit, (2) meeting, and (3) newsletter. This indicates a variance in producer preferences that must be addressed by each Extension agent specific to the situation at hand. Richardsons' study also asked producers what methods they expect to become more important in the future. Nearly all indicated newer and emerging technologies such as computer software, computer networking, and fax transmissions. They also strongly indicated that delivery methods such as newsletters, workshops, and on-farm tests and demonstrations were believed to be relevant both in the present and in the future by Extension clientele.

A study by Clement (1995) indicated Polk County, North Carolina cattle producers relied on Extension information much heavier than did county government personnel. The cattle producers three most preferred Extension delivery methods in order were; newsletters, bulletin/pamphlet, and personal visits. The county government personnel who had less dependence on Extension for information preferred newsletter, newspaper, and bulletin/pamphlet, respectively. Clement's study indicates similarities in delivery preferences among very diverse audiences.

Trede and Whitaker (Journal of Extension, 1998) studied beginning farmer education in Iowa and asked for respondents' perceptions regarding the future usefulness of various educational providers and media in Iowa. They found Extension ranked fourth out of 26 forms listed, surpassed only by (1) parents, siblings, relatives, (2) Radio, and (3) Informational services such as Farm Dayta and Ag Cast. Extension has the opportunity to enhance beginning farmer educational opportunities by working with other entities considered both more and less useful to ensure beginning farmer success in Iowa.

Very few studies have been performed utilizing Oklahoma producers. It is vital to the success of an Extension professional to know what the particular population being worked with on a daily basis thinks of selected presentation methods and which methods they really prefer to receive their information through. Pirtle (1989) conducted a similar study in Washington County, Oklahoma.

This study was conducted before some of the new contact methods were available or widely used; in particular, computer generated communication and information procurement. Washington County also differs in the population numbers and the types of producers dealt with. Kay County is one of the larger agronomy counties in Oklahoma.

As a whole does the more agronomy-oriented population of Kay County prefer different delivery methods than the more livestock oriented population of Washington County?

In contrast to some other studies conducted Pirtle (1989) found that overall, producers perceive most program delivery methods to be effective. Pirtle also found the individual contact method to be the most effective and the group contact method to be the least effective. Furthermore, Pirtle concluded that part-time producers valued mass media as the highest and full time producers valued individual contacts as the highest. Pirtle found the younger producer more acceptable than the older producer of the group programs and some of the electronic mass media such as computers, videotapes and satellite teleconferencing and furthermore found educational was not a major factor in determining perception level of the program. Pirtle concluded that newsletters, pamphlets/fact sheets and office visits to the Extension office were the most popular methods used by Cooperative Extension in Washington County, Oklahoma.

With conflicting research reports, an agent cannot simply generalize what others have found and apply those findings to their situation. The Extension agent needs to know what the clientele in the county being served prefers in terms of delivery methods used by the Cooperative Extension Service. For this reason this study was needed to enable the researcher, as the Cooperative Extension Service Agricultural Agent to better serve the agriculture producer population of Kay County, Oklahoma.

CHAPTER III

METHODOLOGY

Introduction

The purpose of this study was to determine Kay County, Oklahoma agricultural producers' perceptions of the frequency of use and effectiveness of a selected set of Cooperative Extension Service delivery and contact methods. The specific objectives were to:

1. Determine the extent to which agricultural producers in Kay County have used selected program delivery and contact methods during the past three years.
2. Secure producers' perceptions of the effectiveness of each of the selected program delivery and contact methods.
3. Determine if producers differ in extent of use and perceptions of effectiveness of delivery and contact methods according to:
   A. Full or part-time status,
   B. Type of farm production
   C. Age, and
   D. Level of education.

In order to collect data, which would provide necessary information relating to the purpose and objectives of this study, certain methods of procedure were established. These are described in this chapter.

Institutional Review Board Approval

Federal regulations and Oklahoma State University policy require review and approval by the Institutional Review Board (IRB) of all research studies involving human subjects before researchers can begin dealing with a human population. In compliance with the aforementioned policy, this study was submitted and granted permission by the IRB to continue (see Appendix A).

Population and Sampling Procedure

The population for this study included all individuals whose names and addresses appeared on the Kay County Cooperative Extension Service agricultural mailing list as of April 1, 2002. This was a group of 690 individuals. The Extension Agricultural Educator in Kay County, Oklahoma agreed to supply this list and assisted in checking it for accuracy. As the former incumbent in this position, the investigator also assisted with the latter task. The presence of individuals on this list indicated their active participation in extension agricultural programming efforts. A study sample was selected by choosing every third name on the list. A total of 230 questionnaires were sent out to this sample with a pre-stamped return addressed envelope included. When the requested return date had passed, a post card reminder was sent out to those who had not yet responded. Fifteen additional questionnaires were then returned. Fifteen additional

questionnaires returned was 83 which resulted in a 36.09% response rate. Eleven questionnaires were determined not of use because of excessive missing information. Ten non-respondents were contacted by telephone to determine if there were any major differences in characteristics on selected items compared to those of respondents.

Development of the Instrument

In analyzing various methods of data collection, the most appropriate method was determined to be a mailed questionnaire (Appendix B). In developing the instrument to meet the purpose and objectives of the study, the first step was to review instruments used in previous studies. Data collection procedures and the instrument used in a similar study competed by Pirtle (1989) served as an excellent guide for developing the instrument to meet the needs of this study.

In order to be able to describe the participants in the study and to categorize them for purposes of comparisons, certain demographic questions were developed. These included asking them for a mailing address and for the percentage of their gross income derived from crop, livestock and non-farm sources. They were also asked to indicate the types of agricultural production from which their agricultural income was derived. In addition, respondents were asked to indicate their age and level of education.

Two response scales were used as means of securing respondents' inputs and regarding extent of use and perceptions of effectiveness of a selected group of program delivery and contact methods. On one scale, the producers were asked to indicate the number of times they had used the respective delivery or contact methods in the past three

years. Then, on a Likert-type scale they were asked to rate the effectiveness of each on a scale of 1 to 4 with 4 being the most effective and 1 being not effective. The questionnaire was reviewed by county, area and state Extension personnel and examined by fellow graduate students. After these steps the researcher's major advisor confirmed it.

Data Collection Procedures

Due to the fact the researcher changed employment during the study, permission to continue had to be obtained frm the new Northwest District Extension director. An initial telephone call was placed to Dr. Jerry Warrman, the new district director followed by a letter explaining the study.

Dr. Warrman sent a return letter granting permission to continue with the study with no suggestions for changes (Appendix C).

As a part of collecting the data, a letter of introduction was developed to accompany the questionnaire (Appendix D). The purpose of the letter was to introduce the study and explain the questionnaire to the producer in order to help ensure a clear understanding of the instrument and the importance of the study to Extension programming efforts in Kay County, Oklahoma. The letters of introduction also assured respondents that their individual responses would be used only for compiling aggregate data and that their inputs would not be identified or singled out in the study findings. These letters and a questionnaire were mailed with a stamped, self-addressed envelope to each participant selected for the study. The investigator assigned each questionnaire a code number to be used only for the purpose of following up on non-respondents in an

effort to secure the optimal level of information and participation. The investigator was the only person having access to the code numbers and this information was destroyed following the cut-off period for receipt of the questionnaires.

Data Analysis Procedures

Data were analyzed by the investigator and involved item counts and calculations of percentages and means. Among the latter were mean effectiveness ratings that were calculated using the values on the Likert-type scale as follows: Highly Effective = 4, Effective = 3, Somewhat Effective = 2, and Not Effective = 1. The individual responses to these items were summed and divided by the total number of raters to yield a mean effectiveness score. This score was then interpreted by using the following scale of real limits:

Perception of Effectiveness	Numerical Value	Range of Real Limits
Highly Effective	4	4.00 - 3.50 (HE)
Effective	3	3.49 - 2.50 (E)
Somewhat Effective	2	2.49 - 1.50 (SE)
Not Effective	1	1.49 and below (NE)

This procedure worked to permit comparison of the mean effectiveness ratings according to the variables of full or part-time production status, type of farm production, age, and level of education.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

The purpose of this study was to determine Kay County, Oklahoma agricultural producers' perceptions of the frequency of use and effectiveness of a selected set of Cooperative Extension Service program delivery and contact methods. In addition, the study was implemented to determine if there were any major differences in program delivery method preference based upon age, agricultural income level and education level.

The data were collected from 72 Kay County agricultural producers. The objective of this chapter was to present to interpret information from the collection of data compiled in this study.

Population

The study population included 690 agricultural producers located in Kay County, Oklahoma as of April 1, 2002. These producers were past users of Cooperative Extension Service programs and were on mailing lists used for correspondence in the Kay County office. A 230-member sample was selected from the population and a questionnaire was sent to each with a requested return date of two weeks from time of

sending. When the return date had passed, the researcher sent out a post card reminder to those who had not yet responded. Fifteen additional questionnaires were received following this reminder. The total number of questionnaires returned was 83 which was a 36.09% of the sample size. Eleven of the questionnaires were determined unusable due to excessive missing information. This reduced the respondent group to 72 individuals. Ten non-respondents were contacted by phone to determine if there were any major differences in characteristics on selected demographic items compared to those of respondents. No major differences were found. Therefore, it was felt that had they responded, their data likely would not have altered the results of the study.

Findings of the Study

Selected Characteristics of Respondents

The data presented in Table 1 are intended to give a proportional breakdown of respondents grouped into four quadrants of Kay County, Oklahoma on the basis of postal address. Quadrant NW designated the northwest section of the county which included the towns of Blackwell, Braman and Nardin. Quadrant NE was the northeast section of the county and included Newkirk and Kildare. Quadrant SW identified the southwest section of the county and included Tonkawa. Quadrant SE referred to the southeast section of the county and included Ponca City.

There were 72 total useable responses, which broke down into the following distribution by quadrants. From the Northwest quadrant there were 27 respondents, while

Table 1

Comparison of Respondents by Amount of Agricultural Income and Quadrant of County

Agricultural Income	NW	NE	SW	SE	Total	
					N	%
Less than 50% agricultural income	11	8	5	9	33	45.83
50% or more agricultural income	16	7	7	9	39	54.17
Totals	27	15	12	18	72	100.00

the Northeast had 15 respondents. The southern part of the county divided into Southwest with 12 respondents and Southeast with 18 respondents.

Table 1 also illustrates a breakdown of respondents by level of agricultural income. The largest number of respondents were full-time producers, meaning more than 50% of their income was from Agriculture. This group consisted of 39, 54%, of the respondents. The part-time producers, with less than 50% of income derived from agriculture had 33 respondents or 45.8%.

Table 2 was designed to present the distribution of respondents by age and by quadrant of county. A total of 7 respondents, 9.72%, were 40 years of age or younger. The 41 to 50 years of age group had 11 respondents and made up 15.28% of the group. The group ranging in age from 51 to 60 had 16 respondents or 22.22% of the total. The largest age group was the 61 years and over producers, which had 38 respondents or 52.78%.

Table 2

Comparison of Respondents by Age and Quadrant of County

Age Categories	NW	NE	SW	SE	Total N	Total %
40 years & under	0	2	2	3	7	9.72
41 to 50 years	5	2	2	2	11	15.28
51 to 60 years	6	5	3	2	16	22.22
61 years & over	16	6	5	11	38	52.78
Totals	27	15	12	18	72	100.00

Table 3 was developed to display data that indicate the educational level of study respondents. Only two, 2.78%, of those who sent in instruments, had less than a high school education. Seventeen respondents, 23.61%, indicated they had a high school diploma. A total of 22 or 30.56% of the participants had some college while 14 or 19.44% had a 4-year college degree. Respondents having courses beyond a 4-year college degree totaled 6 or 8.33%. There were 11 respondents having a graduate level degree. These comprised 15.28% of the total.

The data in Table 4 are offered as a summary of findings relative to the type of farming enterprises in which producers were engaged. Inspection of returned surveys indicated that 18 respondents or 25% produced crops only while 11 respondents or 15.28% were producers of livestock only. The largest group was those producers

Table 3

Comparison of Respondents by Educational Level by Quadrant of County

	NW	NE	SW	SE	Total	
Educational Level					N	%
Less than high school	1	1	0	0	2	2.78
High school diploma	7	2	2	6	17	23.61
Some college	9	4	4	5	22	30.56
4 year college degree (B.S.)	5	6	2	1	14	19.44
Courses beyond B.S. degree	3	1	0	2	6	8.33
Graduate level degree	2	1	4	4	11	15.28
Totals	27	15	12	18	72	100.00

Table 4

Comparison of Producers by Type of Farm Production by Quadrant of County

	NW	NE	SW	SE	Total	
Type Production					N	%
Crop only	12	2	1	3	18	25.00
Livestock only	2	2	3	4	11	15.28
Both crop & livestock	13	11	8	11	43	59.72
Totals	27	15	12	18	72	100.00

involved in both crop and livestock production. This group had 43 respondents and constituted 59.72% of those who returned usable instruments.

Table 5 was designed to indicate the different crop enterprises reported by producers. Many respondents indicated being involved in more than one area of crop production for income. Because of this, it was found that the 72 respondents were engaged in a total of 145 crop enterprises. To permit comparisons, the percentage of total enterprises comprised by the respective crops was calculated. Producers indicated wheat to be the most widely produced crop, making up 33.80% of the total crop enterprises with 49 respondents involved. Milo/sorghum was the next most popular with 28 respondents. This crop was 19.31% of the total. Grass or other hay and soybeans were both indicated by 22 respondents. Each of these accounted for 15.17% of the crop enterprises. Alfalfa hay was produced by 13 respondents and made up 8.97% of crop enterprises reported. Five respondents were involved in production of corn, which was 3.45% of the crop enterprises. Cotton production was indicated by four respondents and this constituted 2.76% of the total crops production reported. The last category listed was "other" having two respondents who listed rice and C.R.P. or land involved in the Conservation Reserve Program. This category made up 1.38% of the crop enterprises.

Table 6 was structured to provide an overview of the different livestock enterprises indicated by respondents. As in the previous table, several respondents indicated being involved in more than one enterprise. In this case, respondents reported a total of 67 livestock enterprises. The following discussion details the number of producers reporting each enterprise and the percentage that enterprise is of the total

Table 5

Census of Crop Farming Enterprises by Quadrant of County

Enterprises	NW	NE	SW	SE	Total N	Total %
Alfalfa hay	5	2	2	4	13	9.0
Corn	2	0	2	1	5	3.5
Cotton	0	2	0	2	4	2.8
Grass or other hay	6	6	3	7	22	15.3
Milo/sorghum	13	2	7	6	28	19.4
Soybeans	11	4	5	2	22	15.3
Wheat	20	7	9	12	48	33.3
Others	1	1	0	0	2	1.4
Totals	58	24	28	34	144	100.0

Table 6

Census of Livestock Farming Enterprises by Quadrant of County

Enterprises	NW	NE	SW	SE	Total N	Total %
Beef cattle – cow/calf	11	8	5	9	33	49.3
Beef cattle – stocker	9	3	5	6	23	34.3
Dairy cattle	0	2	0	0	2	3.0
Sheep	2	0	2	1	5	7.5
Swine	2	1	1	0	4	5.9
Totals	24	14	13	16	67	100.0

reported. Beef cattle-cow/calf was indicated by the largest number of producers, 33, and this comprised 49.3% of the total livestock enterprises. Beef cattle-stocker was the second most important enterprise listed by 23 respondents and comprising 34.3% of the total for livestock enterprises. Seven percent of livestock enterprises consisted of sheep production and involved five respondents. The number of respondents involved in swine production was four, and this made up 5.9% of the livestock enterprises. Dairy cattle production was indicated by two respondents and accounted for 3.0% of the total for livestock. Horses and other livestock were not indicated by any of the 72 respondents.

The remainder of this chapter is designed to present and interpret data collected in regard to Kay County, Oklahoma agricultural producers' extent of use and perceptions of effectiveness of selected Cooperative Extension Service program delivery and contact methods. In each instance the findings are presented under three broad categories of program delivery methods.

Extent of Use of Program Delivery/Contact Methods

Table 7 was designed to display findings regarding respondents' use of selected program delivery/contact methods during the last three-year period of time. Three categories of methods were studied and these consisted of Individual Contact, Group Contact and Mass Media. Under each of these categories selected methods were included. For each of these methods the following comparisons were calculated: range of times individual respondents used the method, total times the method was used, total number of users and the means times used per respondent.

Table 7

Extent of Respondents' Use of Program Delivery or Contact Methods During Last Three Years

Delivery / Contact Method	Range of Times Used by Respondent	Total Times Used	Total Users	Mean Times Used Per Respondent
Individual Contact				
Telephone calls to extension office	1-60	520	55	9.45
Visits to extension office	1-40	358	53	6.75
Farm visits by extension staff	1-12	74	21	3.52
Computer e-mails to extension office	1-3	8	5	1.60
Visits to university &/or experiment sites	1-12	72	19	3.79
Group Contact				
Tours or field trips	1-25	134	37	3.62
Workshops	1-6	16	7	2.29
Conferences	1-10	41	13	3.15
Field days	1-10	62	20	3.10
Seminars	1-20	41	9	4.56
Panel discussions	1-10	13	3	4.33
Mass Media				
News letter	1-36	663	45	14.73
Computer websites	1-12	33	5	6.60
Radio program	1-12	24	3	8.00
Newspaper articles	1-50	341	29	11.76
T.V. programs	1-99	183	5	36.60
Pamphlets/fact sheets	1-99	307	24	12.79
Exhibits/displays	1-10	15	3	5.00
Video tapes	1-3	8	6	1.33

Topping the list for Individual Contact, Telephone Calls to Extension Office, had a range of use of 1-60 times per respondent. In total it was used 520 times by 55 respondents, and the mean use was 9.45 times. Next in line was Visits to the Extension Office, with a range of use of 1-40 times. Fifty-three individuals used this method a total of 358 times, which translated to a mean of 6.75 times per respondent. One respondent reported being visited by Extension staff a total of 12 times. This contact method was used a total of 74 times with 21 clients, for a mean of 3.52 times per client. One respondent reported making 12 Visits to University and/or Experiment Stations. Nineteen respondents reported using this method a total of 72 times, which meant that it was used 3.79 times on the average. Computer e-mail to Extension Office was used eight times by five individuals, for a mean of 1.60.

The Group Contact method most widely used was Tours and Field Trips. This method was used 134 times by 37 individuals for a mean of 3.62. One individual reported participating in this method 25 times. Field Days had been used a total of 62 times by 20 people for an average of 3.10 times per user. Conferences and Seminars were each used a total of 41 times. Respectively, 13 and 9 respondents reported participating in these methods a range of 1-10 and 1-20 times, with the means per user coming out to 3.15 and 4.56. Workshops had a mean use of 2.29 times by 7 respondents. Three people reported participating in Panel Discussions a total of 13 times for a mean of 4.33 times per person. One individual had been a part of 10 such sessions, respectively.

Based upon total times used, News Letter was the most effective Mass Media method. Forty-five respondents reported a total of 663 uses during the past 3-year periods for a mean of 14.7 times per person. One individual indicated using this method a total of

36 times. Newspaper Articles had been used a total of 341 times by 29 respondents – an average of 11.76 times per user. In one case, this method was used 50 times. Pamphlets/Fact Sheets had been used by 24 persons a total of 307 times, for a mean use per respondent of 12.79. Television programs received the highest mean, 36.60 uses per user. However, only five people reported using this method and one of these had viewed 99 programs. Five respondents also reported having used Computer Websites. Their total use of this method was 33 times for an average of 6.60. Radio Programs and Exhibits/Displays were Mass Media contact methods used by 5 and 3 respondents respectively. The respective total and mean uses were 24 and 15 and 8.00 and 5.00. Six respondents indicated use of video tapes, which meant it was used 1.33 times on the average.

Respondents' Perceived Effectiveness of Methods
According to Selected Variables

Respondents were asked to provide a rating of the effectiveness of each of the program delivery/contact methods. The researcher then compared these ratings by grouping the respondents according to agricultural income level, age, educational level, and agricultural enterprise classification. A mean effectiveness rating was calculated for each individual method and for each category according to the procedures described in Chapter III. In order to be able to interpret and compare mean effectiveness ratings, numerical values were assigned and limits established according to the following.

Numerical Value	Range of Real Limits	Level of Effectiveness
4	3.50 – 4.00	Highly Effective (HE)
3	2.50 – 3.49	Effective (E)
2	1.50 – 2.49	Somewhat Effective (E)
1	1.00 – 1.49	Not Effective (NE)

Effectiveness of Methods According to Respondents' Source of Income

The data in Table 8 were assembled to permit a comparison of perceptions of effectiveness of methods when respondents were grouped according to whether they received more than or less than 50 percent of their income from agriculture. In the ensuing discussion those in the less than half group are sometimes referred to as part-time producers, while those in the more than 50 percent group may be referred to as full-time producers.

Both groups of producers assigned their highest rating to Visits to Extension Office. The mean for the part-time group was 3.48 while that of the full-time producers was 3.37. Both of these were in the Effective category. The order of effectiveness ratings of the other individual contact methods by those earning less than half of their income from agriculture was as follows: Farm Visits by Extension Staff – 3.36, Telephone Calls to Extension Office – 3.27, Visits to University and/or Experiment Stations - 3.00 and Computer e-mails to Extension Staff – 1.00. All but the last method were in the Effective range and that one was classified as Not Effective. For those who received more than

Table 8

Perceptions of Effectiveness of Program Delivery or Contact Methods by Source of Income

Delivery Contact Method	Mean Effectiveness Ratings by Source of Income			
	Less than 50% Ag Income		More than 50% Ag Income	
Individual Contact				
Telephone calls to extension office	3.27	E	3.17	E
Visits to extension office	3.48	E	3.37	E
Farm visits by extension staff	3.36	E	3.08	E
Computer e-mails to extension staff	1.0	NE	2.67	E
Visits to university and/or experiment stations	3.0	E	2.88	E
Overall rating	3.27	E	3.11	E
Combined rating	3.19		E	
Group Contact				
Tours and field trips	3.16	E	3.45	E
Workshops	2.67	E	2.80	E
Conferences	2.67	E	2.89	E
Field days	3.09	E	3.25	E
Seminars	2.86	E	2.86	E
Panel discussions	1.0	NE	2.80	E
Overall rating	2.90	E	3.14	E
Combined rating	3.03		E	
Mass Media				
News letter	3.32	E	3.62	HE
Computer websites	2.8	E	2.6	E
Radio program	2.8	E	3.0	E
Newspaper articles	3.24	E	3.19	E
Television programs	2.33	SE	3.43	E
Pamphlets/fact sheets	3.44	E	3.6	HE
Exhibits/display	2.20	SE	2.43	SE
Video tapes	1.0	NE	3.0	E
Overall rating	3.11	E	3.33	E
Combined rating	3.23		E	

50 percent of income from agriculture, the order of effectiveness ratings was found to be Telephone Calls – 3.17, Farm Visits by Extension Staff – 3.08, Visits to University and/or Experiment Stations – 2.88 and Computer e-mails to Extension Staff – 2.67. All of these ratings fit within the Effective range. The effectiveness rating of Individual Contact methods overall was 3.27 by the part-time group and 3.11 by the full-time group. Both of these overall ratings were in the Effective classification.

With the exception of Seminars under Group Contact methods, the higher agricultural income respondents assigned higher ratings to each method in this category. Both sets rated Seminars at 2.86 or Effective. The order of mean ratings by item for this group was as follows: Tours and Field Trips – 3.45, Field Days – 3.25, Conferences – 2.89, Seminars – 2.86, Workshops and Panel Discussions – each 2.80. The effectiveness assessment for all methods in this category by this group was 3.14. All the ratings by this group were in the Effective assessment. Tours and Field Trips also received the other groups' highest rating, 3.16. This was followed in order by Field Days – 3.09, Seminars – 2.86, Workshops and Conferences – each 2.67, and Panel Discussions – 1.00. The latter translated to Not Effective, but all the others were rated as Effective. The overall rating by the lower agricultural income group of items making up this category was 2.90, Effective.

The overall ratings of items in the Mass Media category were rather similar for the two groups of respondents at 3.33 and 3.11, both labeled as Effective, for the full-time and part-time respondents respectively. However, there were notable differences in how several of the individual items were rated. The full-time group rated Newsletters at 3.62 and Pamphlets at 3.60, both in the Highly Effective range. The other group assigned

respective mean ratings of 3.32 and 3.44, both Effective, to these two methods. Television Programs came in as the third highest rated method by the former group at 3.43, Effective, but only received a 2.33, Somewhat Effective from the latter group. There was a disparity of ratings for Video Tapes, with the less than 50 percent income group indicating it was Not Effective, 1.00, while the greater than 50 percent income group assigned a mean of 3.00, Effective. Exhibits and Displays were considered Somewhat Effective by both sets of respondents. Although the numerical means for the remaining methods in the list varied a bit, they all fell into a mean effectiveness rating of Effective.

Effectiveness of Methods According to Age of Respondents

Table 9 is presented as a comparison of perceptions of effectiveness of program delivery or contact methods by selected age groups of respondents. Producers 40 years of age and under indicated Visits to Extension Office to be Highly Effective with a mean of 3.75. Telephone calls to Extension Office had a mean of 3.20 and were thus considered Effective, as were Farm Visits by Extension Staff and Visits to University and/or Experiment Stations, each with means of 3.00. This group did not use computer e-mails to Extension staff. The Individual Contact category received a 3.29 or Effective overall effectiveness rating from this younger group. The 40 years and under respondents also indicated Field Days were their most effective method of Group Contact with a mean rating of 3.67, Highly Effective. Tours and Field Trips and Conferences were considered

Table 9

Perceptions of Effectiveness of Program Delivery or Contact Methods by Age of Respondent

Delivery Contact Method	40 yrs & under		41 to 50 yrs		51 to 60 yrs		61 yrs & over	
Individual contact								
Telephone calls to extension office	3.20	E	3.25	E	3.21	E	3.21	E
Visits to extension office	3.75	HE	3.50	HE	3.18	E	3.45	E
Farm visits by extension staff	3.00	E	3.17	E	3.25	E	3.33	E
Computer e-mails to extension staff			2.00	SE	1.00	NE	4.00	HE
Visits to university and/or experiment stations	3.00	E	3.20	E	2.50	E	3.43	E
Overall rating	3.29	E	3.21	E	3.00	E	3.36	E
Group contact								
Tours and field trips	3.25	E	3.29	E	3.10	E	3.44	E
Workshops			2.33	SE	2.83	E	3.00	E
Conferences	3.00	E	2.80	E	2.25	SE	3.20	E
Field days	3.67	HE	3.25	E	2.67	E	3.30	E
Seminars			2.50	E	2.25	SE	3.50	HE
Panel discussions			1.00	NE	2.00	SE	4.00	HE
Overall rating	3.38	HE	2.76	E	2.67	E	3.40	E
Mass media								
News letter	3.29	E	3.22	E	3.46	E	3.61	HE
Computer websites	3.00	E	3.00	E	2.00	SE	3.00	E
Radio program	3.00	E	2.50	E	1.00	NE	3.80	HE
Newspaper articles	3.17	E	3.00	E	3.14	E	3.32	E
Television programs			2.33	SE	3.50	HE	3.40	E
Pamphlets/fact sheets	3.25	E	3.14	E	3.82	HE	3.58	HE
Exhibits/display	3.00	E	2.00	SE	1.00	NE	3.00	E
Video tapes	3.00	E	2.50	E	1.00	NE	4.00	HE
Overall rating	3.17	E	2.86	E	3.05	E	3.49	E

Effective due to their 3.25 and 3.00 respective mean ratings. These were the only Group Contact methods reported as utilized by these respondents. Their overall mean rating of the effectiveness of these types of methods was 3.38, which fell into the range of Effective. This group rated all Mass Media methods as Effective, with the high mean being calculated for Newsletters, a 3.29, closely followed by Pamphlets/Fact Sheets, 3.25, and Newspaper Articles, 3.17. The remaining four methods they reported as having used all received means of 3.0. When an overall or grand mean was calculated for Mass Media, it was found to be 3.17 or Effective.

For the 41 to 50 year-old group, an overall mean of 3.21, Effective, was assigned to the methods comprising the Individual Contact category. The most highly rated individual method in this category was Visits to Extension Office with a Highly Effective mean of 3.50. This was higher than Telephone Calls to Extension Office, which was rated at 3.25 or Effective. Visits to University and/or Experiment Stations and Farm Visits by Extension Staff received respective mean ratings of 3.20 and 3.17, both of which were in the Effective classification. Computer e-mails to Extension Staff were considered Somewhat Effective due to the mean rating of 2.0. This group also considered Tours and Field Trips the best method of Group Contact with a mean rating of 3.29, Effective. Field Days followed closely with a mean of 3.25. Conferences and Seminars received respective ratings of 2.80 and 2.5, both notably lower, but still in the Effective range. Workshops were considered Somewhat Effective as determined by a mean of 2.33, while Panel Discussions were rated as Not Effective, with a mean of 1.0. When ratings for all items in the Group Contact category were combined, an overall rating of 2.76, Effective, was disclosed. Similar to the previous age group, the 41 to 50 years of

age respondents assigned News Letter, Pamphlets/Fact Sheets, Computer Websites and Newspaper Articles means of 3.0 or greater, meaning these were considered Effective on the average. Just within the Effective range, at 2.50, were Video Tapes. Television Programs and Exhibits/Displays were on the lower end of ratings with Somewhat Effective means of 2.33 and 2.0 respectively. An overall mean rating of 2.86, Effective, was assigned for the category of Mass Media by this age group.

The 51 to 60 years of age group considered all except one Individual Delivery/Contact method to be effective with means ranging from a high of 3.25 for Farm Visits by Extension Staff to a low of 2.50 for Visit to University and/or Experiment Station. Computer e-mails to Extension Staff were considered Not Effective with a mean of 1.00. The overall mean for this group of methods was found to be 3.00 or Effective. Tours and Field Trips received the highest mean from this group as it had from the previous two in the area of Group Contact methods. This method received a 3.10 mean while Workshops were rated at 2.83 and Field Days at 2.67. Conferences and Seminars were classed as Somewhat Effective, each receiving a 2.25 mean rating, while Panel Discussions fit into the same effectiveness category with a 2.0 rating. Overall, Group Contact methods were rated Effective with a 2.67 mean response. This group indicated Pamphlets/Fact Sheets, with a mean of 3.82, and Television Programs, at 3.50, were Highly Effective Mass Media methods. At 3.46 News Letter was rated as Effective as was Newspaper Articles, with its 3.14. As indicated by a 2.00 mean rating, Computer Websites were judged to be only Somewhat Effective. They also considered three methods to be Not Effective with means of 1.0. These were Radio Program, Exhibits/Display and Video Tapes.

As a total category, the 61 and over age group considered Individual Contact methods to be Effective as determined by the 3.36 overall rating they assigned. This was the highest rating given these methods by any of the age groups. When methods in this category were considered individually, it was found that this group rated Computer e-mails to Extension Staff as Highly Effective, with a 4.00 mean response. Visit to Extension Office, Visits to University and/or Experiment Stations, Farm Visits by Extension Staff and Telephone Calls to Extension Office were all rated as Effective by the assignment of respective mean responses of 3.45, 3.43, 3.33, and 3.21. Panel Discussions and Seminars were the top-rated methods of Group Contact for this group receiving Highly Effective ratings of 4.00 and 3.50 respectively. Tours and Field Trips-3.44, Field Days-3.30, Conferences-3.20 and Workshops –3.00 were categorized as Effective. The overall mean rating for Group Contact methods was 3.40, Effective. Mass Media received very high ratings from this group with an overall mean of 3.49 or Effective. By individual methods, Video Tapes had the highest mean with 4.00, followed by Radio Program with 3.80, News Letter with 3.61 and Pamphlets/fact sheets with 3.58. All of these were grouped under Highly Effective. Newspaper Articles, Computer Websites and Exhibits/Display received mean ratings of from 3.40 to 3.00 and thus were judged to be Effective.

Effectiveness of Methods According to Respondents' Level of Education

The data in Table 10 were compiled in an effort to illustrate respondents' perceptions of effectiveness of program delivery or contact methods in comparison to

level of education. The group of producers having less than a four year college degree considered Computer e-mails to Extension Staff as the most effective Individual Contact method with a mean of 4.00, followed by Visits to Extension Office with a mean of 3.52, both of which are rated as Highly Effective. This group considered all other individual methods to be Effective with the lowest mean being 3.10. Concerning Group Contact methods, these respondents recognized Panel Discussions as Highly Effective with a mean of 4.00, followed by Workshops with a mean of 3.50, which was also Highly Effective. Field Days, Tours and Field Trips, Seminars and Conferences received mean ratings of 3.44 to 3.00, all of which were included in the Effective level. The Mass Media methods Radio Program and News Letter, received 3.60 and 3.50 mean ratings respectively, with both fitting into the Highly Effective range. There was a 3.48 for Pamphlets/Fact Sheets, 3.30 for Newspaper Articles, 3.25 for Television Programs, and 3.00 for both Video Tapes and Computer Websites and 2.75 for Exhibits and Displays, categorizing each of these methods as Effective. The overall mean response across items in the Individual Contact area was 3.36, with 3.39 for those in the Group Contact category; and 3.38 for Mass Media. As can be noted there is little spread among these figures, all of which fall in the Effective range.

Respondents with a four-year degree considered the group of Individual Contact methods to be Effective as indicated by the overall mean rating of 3.15. They rated the Visits to Extension Office, Telephone Calls to Extension Office, Farm Visits by Extension Staff and Visits to University and/or Experiment Stations fairly close with a range or mean ratings from 3.29 to 3.00, which put all of them at the Effective level. Computer e-mails to Extension Staff was classed as Not Effective. Tours and Field Trips

Table 10

Perceptions of Effectiveness of Program Delivery or Contact Methods by Educational Level of Respondents

Delivery/Contact Method	Mean Effectiveness Ratings by Educational Level					
	< 4 yr Degree		4 yr Degree		> 4 yr Degree	
Individual Contact						
Telephone calls to extension office	3.25	E	3.23	E	3.14	E
Visits to extension office	3.52	HE	3.29	E	3.40	E
Farm visits by extension staff	3.10	E	3.17	E	3.43	E
Computer e-mails to extension staff	4.00	HE	1.00	NE	1.67	SE
Visits to university and/or experiment stations	3.45	E	3.00	E	3.00	E
Overall rating	3.36	E	3.15	E	3.15	E
Group Contact						
Tours and field trips	3.40	E	3.33	E	3.17	E
Workshops	3.50	HE	2.00	SE	2.40	SE
Conferences	3.00	E	2.80	E	2.71	E
Field days	3.44	E	3.00	E	3.00	E
Seminars	3.25	E	2.72	E	2.67	E
Panel discussions	4.00	HE	2.50	E	1.75	SE
Overall rating	3.39	E	2.97	E	2.44	SE
Mass Media						
News letter	3.50	HE	3.57	HE	3.33	E
Computer websites	3.00	E	2.67	E	2.00	SE
Radio program	3.60	HE	2.50	E	2.00	SE
Newspaper articles	3.30	E	3.11	E	3.15	E
Television programs	3.25	E	3.67	HE	2.33	SE
Pamphlets/fact sheets	3.48	E	3.75	HE	3.50	HE
Exhibits/display	2.75	E	2.33	SE	2.00	SE
Video tapes	3.00	W	1.00	NE	2.50	E
Overall rating	3.38	E	3.26	E	2.98	E

rated highest among the Group Contact methods with a mean of 3.33, Effective. Other Effective methods with their mean responses were Field Days-3.30, Conferences-2.80, Seminars-2.72, and Panel Discussions-2.50. Receiving a Somewhat Effective rating, 2.00, was Workshops. The combined mean rating by these participants of the Group Contact methods was 2.97 or Effective. Among Mass Media methods assessed by the four-year degree group, Pamphlets/Fact Sheets received the highest rating, 3.75, followed by Television Programs at 3.67 and newsletter at 3.57. These qualified for the Highly Effective notation. A 3.11 for Newspaper Articles, 2.67 for Computer Websites and 2.50 for Radio Program led to placing these three methods in the Effective category. At 2.33, Exhibits/Displays were considered Somewhat Effective and Video Tapes were Not Effective because of a mean rating of 1.00. As a group, the Mass Media methods were awarded a 3.26 or Effective rating overall.

Study respondents possessing education greater than a four-year degree assigned the Effective rating to Farm Visits by Extension Staff, Visits to Extension Office, Telephone Calls to Extension Office and Visits to University and/or Experiment Stations. This was based upon the 3.43, 3.40, 3.14 and 3.00 respective means calculated for these items. Computer e-mails to Extension staff received the lowest mean of 1.67, which was a Somewhat Effective rating. When the ratings of this group of respondents of all the methods in the Individual Contact group were combined, an overall 3.15, Effective, mean rating was determined. Taken together, the items comprising the Group Contact area received a 2.44 overall mean rating. This was in the Somewhat Effective level and was the lowest rated category overall when responses were compared by respondents' level of education. With mean ratings ranging from 3.17 to 2.67, the methods in this grouping of

Tours and Field Trips, Field Days, Conferences and Seminars earned Effective ratings. Receiving Somewhat Effective labels were Workshops and Panel Discussions. In the Mass Media group the respondents with the highest level of education assigned a Highly Effective, 3.50, rating to Pamphlets/Fact Sheets. It was also determined that they assigned 3.33 to News Letter, 3.15 to Newspaper Articles and 2.50 to Video Tapes, meaning that these three methods were Effective. They considered Television Programs, Computer Websites, Radio Program and Exhibits/Display to be only Somewhat Effective, with these receiving from 2.33 to 2.00 ratings. This group's overall rating of Mass Media methods was 2.98, Effective.

Effectiveness of Methods According to Respondents'

Type of Farm Production

The data presented in Table 11 allows for the comparison of respondents' perceptions of effectiveness of individual program delivery or contact methods by type of farm production. Producers indicated they were producers of crop enterprises only, livestock enterprises only or both crop and livestock. The most effective individual delivery/contact method indicated by the crop only group of respondents was visits to university and/or experiment stations. This method had a mean of 3.40 and was followed closely by visits to Extension office with a mean of 3.36. All other individual methods received means of 3.0. All individual delivery/contact methods were considered Effective by this group. Tours and field trips received the highest rating from the crop only respondents in the group delivery/contact methods. This method had a mean of 3.60 which made its' rating Highly Effective. Seminars followed closely with a mean of 3.5

Table 11

Perceptions of Effectiveness of Program Delivery or Contact Methods by Type of Farm Production

Delivery / Contact Method	Crop Only		Livestock Only		Both	
Individual Contact						
Telephone calls to extension office	3.00	E	3.44	E	3.24	E
Visits to extension office	3.36	E	3.56	HE	3.41	E
Farm visits by extension staff	3.00	E	3.00	E	3.31	E
Computer e-mails to extension staff	3.00	E	1.00	NE	2.00	SE
Visits to university and/or experiment stations	3.40	E	3.00	E	3.19	E
Overall rating	3.19	E	3.26	E	3.26	E
Group Contact						
Tours and field trips	3.60	HE	3.22	E	3.28	E
Workshops	2.00	SE	2.50	E	2.88	E
Conferences	3.00	E	2.67	E	2.82	E
Field days	3.33	E	3.29	E	3.08	E
Seminars	3.50	E	2.33	SE	2.71	E
Panel discussions	1.00	NE	1.00	NE	2.80	E
Overall rating	3.20	E	2.92	E	3.03	E
Mass Media						
News letter	3.58	HE	3.11	E	3.53	HE
Computer websites	3.33	E	3.00	E	2.00	SE
Radio program	4.00	HE	1.00	NE	1.33	NE
Newspaper articles	3.44	E	3.00	E	3.19	E
Television programs	3.33	E	2.00	SE	3.40	E
Pamphlets/fact sheets	3.57	HE	3.00	E	3.62	HE
Exhibits/display	2.00	SE	2.33	SE	2.43	SE
Video tapes	4.00	HE	1.00	NE	2.25	SE
Overall rating	3.48	E	2.77	E	3.19	E

and field days with 3.33. Workshops were considered Somewhat Effective with a mean of 2.0 and panel discussions were not effective having a mean of 1.0. Four mass media delivery/contact methods were rated as Highly Effective with means ranging from 4.0 to 3.57. These methods in descending order were radio programs and video tapes (both at 4.0), newsletter, and pamphlets/fact sheets. Exhibits/displays were said to be Somewhat Effective with a mean of 2.0 and all others were considered Effective by the crop only group of respondents.

The livestock only respondents rated visits to Extension office as Highly Effective with a mean of 3.56 in the individual delivery/contact method category. Telephone calls to Extension office, farm visits by extension staff and visits to university and/or experiment stations were all considered Effective. Computer e-mails to Extension office were considered Not Effective. This group indicated field days and tours and field trips received their highest perception of Effective with means of 3.29 and 3.22 while they considered panel discussions to be Not Effective. Newsletter received their highest mean in the mass media category with an Effective rating of 3.11 followed by 3 with means of 3.0. This group considered radio program and video tapes to be Not Effective.

The largest number of respondents from this enterprise category was the group of producers who indicated production of both crops and livestock. This group indicated four of five individual methods to be Effective however, considered computer e-mails to Extension staff to be Somewhat Effective with a mean of 2.0. This group considered all group contact methods Effective with a range of means from 3.28 for tours and field trips to 2.71 for seminars. Two methods of mass media delivery/contact methods received Highly Effective ratings with means of 3.62 for pamphlets/fact sheets and 3.53 for

newsletter. Newspaper articles and television programs were both considered Effective while computer websites, exhibits/displays and video tapes were considered Somewhat Effective and radio program was deemed Not Effective having a mean of 1.33.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Purpose

The purpose of this study was to determine Kay County, Oklahoma agricultural producers' perceptions of the frequency of use and effectiveness of a selected set of Cooperative Extension Service program delivery and contact methods.

Specific Objectives

The following objectives were established to accomplish the purpose of the study.

1. Determine the extent to which agricultural producers in Kay County have used selected program delivery and contact methods during the past three years
2. Secure producers' perceptions of the effectiveness of each of the selected program delivery and contact methods
3. Determine if producers differ in their perceptions of effectiveness of delivery and contact methods according to:
    a. Amount of agricultural income

b. Type of Farm Production

c. Age

d. Level of Education

Procedures

A review of literature and research related to the study was conducted and the following major tasks were carried out to accomplish the purpose and objectives of the study: (1) determination of the population of the study, (2) development of the questionnaire, (3) collection of data, (4) analysis and interpretation of data.

The population of the study. All individuals whose names and addresses appeared on the Kay County Cooperative Extension Service agricultural mailing list as of April 1, 2002 comprised the study population. The presence of individuals on this list indicated their active participation in extension programming efforts through the Kay County Cooperative Extension Service office. The study sample was selected by choosing every third name on the list. A total of 230 questionnaires were mailed out.

The survey instrument. The instrument used in the study was a questionnaire, developed by the research after consulting related studies, the researcher's graduate adviser, and other Cooperative Extension Service Agricultural Agents. Following development, the instrument was subjected to a review process and a pilot test to assure correctness and clarity.

Collection of data. Questionnaires were mailed May 28, 2002 with a letter introducing the study along with a self-addressed, stamped envelope. When the requested

return date of two weeks had passed, the researcher sent a post card reminder to those who had not yet returned their questionnaire. This action resulted in 15 additional questionnaires being returned. The total number of questionnaires returned was 83, which was a 36.09% response rate. There were, however, eleven questionnaires returned that were not usable due to insufficient information. The total number of useable questionnaires returned was 72. When it appeared there was little likelihood that more instruments would be returned, a follow-up of non-respondents was carried out. The researcher contacted ten of these individuals by phone to determine if they differed from respondents with regard to selected demographic characteristics. No major differences were found, leading the researcher to feel that had they responded, their inputs would not have greatly altered the findings.

Analysis and interpretation of the findings. The data were analyzed by performing item counts, calculating percentages and determining mean responses. A scale was developed to convert numerical means to categories of effectiveness. These responses were then compared utilizing the variables of source of income, age, level of education and type of farm production.

Findings

Selected characteristics of respondents. Data were collected regarding several demographic characteristics of those who responded to the study. It was discovered that 54.17 % of the respondents derived more that one-half of their income from agriculture. Although the sample was chosen by a random procedure, 37.5% of the replies came from

the northwestern quadrant of Kay County, which included the communities of The largest age group was found to be those 61 years of age and over and these accounted for 52.78% of the total respondents. The comparison of educational level of respondents disclosed that only 2, 2.78%, of respondents had less than a high school education. The modal group was the 22, 30.56%, which had some college-level work. A total of 31 individuals, 43.05%, had attained a 4-year degree or higher level of education. A comparison of types of agricultural enterprises produced revealed that almost 60% of the respondents were involved in both crop and livestock operations. An investigation of types of crop enterprises found that nearly 75% of the participants were engaged in production of cultivated crops, with one-third of these being wheat. For more than 83% of the respondents, beef production was their livestock focus, with nearly one-half of these being engaged in beef cow-calf enterprises. By utilizing the aforementioned demographic information, the "typical" Kay County Extension agricultural client can be profiled as follows: a full-time producer that resided in the northwestern quadrant of the county; at least 61 years of age; likely to hold at least a 4-year college degree; and a producer of both cultivated crops and beef cattle.

Extent of use of program delivery/contact methods. One of the objectives of the study was to investigate the extent to which clients had used selected means to interact with the county Extension staff over the past three-year period. For purposes of this and other comparisons, selected specific methods were grouped into three categories, which included Individual Contact methods, Group Contact methods and Mass Media, contact methods. Table 12 was developed to highlight the most popular methods in terms of total

times used. In addition, the table contains information regarding the total numbers of users for each method.

Table 12

Program Delivery/Contact Methods Most Utilized During Last Three-year Period

Delivery/Contact Methods	Total Times Used	Total Users
Individual Contact		
Telephone Calls to Extension Office	520	55
Visits to Extension Office	358	53
Farm Visits by Extension Staff	74	21
Visits to University and/or Experiment Stations	72	19
Group Contact		
Tours or Field Trips	134	37
Field Days	62	20
Mass Media		
News Letter	663	45
Newspaper Articles	341	29
Pamphlets/Fact Sheets	307	24
TV Programs	183	5

In constructing Table 12, the researcher included only those methods that had been used a minimum of 60 times. Inspection of the data presented in the table seems to indicate that this group of clientele made the greatest use of program delivery and contact

methods that required some initiative on their part. It also reveals that they utilized an impressive variety of means to interact with the Extension professionals in Kay County. It was interesting to note that methods in the Mass Media category received the greatest amount of use overall.

Effectiveness of program delivery/contact methods. A major focus of the study was to determine respondents' perceptions of the effectiveness of program delivery/contact methods and to see if these differed according to selected variables. Table 13 is a depiction of the rank order, in terms of effectiveness, of each program delivery/contact method by each group of respondents within the variables compared in the study. The researcher established the rankings on the basis of the power of the mean levels of effectiveness calculated for each group of respondents for each variable studied. This procedure permitted a comparison between and among groups as to how they viewed the effectiveness of each of the methods. To provide a basis for overall comparison of the methods, an overall grand mean was calculated. This was accomplished by summing the individual ratings of each method and dividing this sum by the number of raters. This figure is the last entry on the right side of Table 13. Inspection of these data reveals that there was a considerable amount of consistency in the manner in which the effectiveness of the respective methods was rated by each of the groups and overall.

Table 13

Rank Order of Effectiveness of Program Delivery/Contact Methods on Basis Of Ratings Assigned by Study Variables Groups Compared to Overall Mean Rating

Delivery/Contact Methods	Rank Order by Variables												Overall Mean Rating
	Amt of Ag Income		Age				Levels of Education			Type Farm Production			
	<50%	>50%	40	41-50	51-60	61+	< 4yr	4yr	> 4yr	Crops	Live Stock	Both	
Individual Contact													
Visits to extension office	1	1	1	2	3	2	2	1	2	2	1	1	3.22(E)
Telephone calls to extension office	3	2	2	1	2	5	4	2	3	3	2	3	3.42(E)
Farm visits by extension staff	2	3	3	4	1	4	5	3	1	3	3	2	3.21(E)
Visits to university &/or experiment stations	4	4	3	3	4	3	3	4	4	1	3	4	1.90(SE)
Computer e-mail to extension staff	5	5	5	5	5	1	1	5	5	3	5	5	2.94(E)
Group Contact													
Tours and field trips	1	1	2	1	1	3	4	1	1	1	3	1	3.32(E)
Field days	2	2	3	2	3	4	3	2	2	3	1	2	2.74(E)
Seminars	3	4	1	4	4	2	5	4	4	2	2	6	2.79(E)
Conferences	4	3	4	3	4	5	6	3	3	4	4	4	3.18(E)

Table 13 - Continued

Delivery/Contact Methods	Rank Order by Variables												Overall Mean
	Amt of Ag Income		Age				Levels of Education			Type Farm Production			
	<50%	>50%	40	41-50	51-60	61+	< 4yr	4yr	> 4yr	Crops	Live Stock	Both	Rating
Workshops	4	5	4	5	2	6	2	6	5	5	5	3	2.86(E)
Panel discussions	6	5	4	6	6	1	1	5	6	6	6	5	1.98(SE)
Mass Media													
News letter	2	1	1	1	3	3	2	3	2	3	1	2	3.48(E)
Pamphlets/fact sheets	1	2	2	2	1	4	3	1	1	4	2	1	2.69(E)
Newspaper articles	3	4	3	3	4	6	4	4	3	5	2	4	2.91(E)
Television programs	6	3	5	7	2	5	5	2	5	6	6	3	3.21(E)
Radio programs	4	5	4	5	6	2	1	6	6	1	7	8	2.93(E)
Video tapes	8	5	4	5	6	1	6	8	4	1	7	6	3.53(HE)
Computer web sites	4	7	4	3	5	7	6	5	6	6	2	7	2.32(SE)
Exhibits/displays	7	8	4	8	6	7	8	7	6	8	5	5	2.08(SE)

Another assessment of effectiveness was secured by comparing the overall means for each category of methods across the groups of respondents representing the respective variables. These data are found in Table 14. The first comparison was of the effectiveness ratings by respondents grouped according to whether they received less or more than 50% of their income from agriculture. On the average, both of these groups rated all three categories of methods as Effective, with mean responses exhibiting a rather narrow range of difference of 3.33 to 2.90. Those receiving less than half of their income from agriculture assigned a higher numerical rating, 3.23, to Individual Contact than did the other group. However, the latter rated Group Contact and Mass Media higher at 3.14 and 3.33 respectively.

When compared by Type of Farm Production, it was found that all three groups of respondents assigned means of Effective to all groups of methods. Their numerical ratings of Individual Contact were quite similar ranging only from 3.26 to 3.19. For Group Contact, the crop-only producers provided the highest rating of 3.20, while the livestock- only producers had the lowest at 2.92. The crop-only group rated Mass Media methods at 3.48, almost in the Highly Effective range, while the livestock-only respondents responded at the 2.77 level.

Comparison of responses by age group revealed these respondents held rather high opinions of the effectiveness of the three types of methods. Those under 40 years of age placed a Highly Effective tag on Group Contact methods. All of the others were rated Effective by all four age groups. Individual Contact methods were rated highest, 3.36, by the oldest group, with those less than 40 assigning a 3.29 value to such approaches. Those 61 years and older had a 3.40 rating for Group Contact, while the 41-50 and 51-60

Table 14

Summary Comparison of Effectiveness Ratings of Program Delivery/Contact Methods by Selected Respondent Variables

Variables	Individual Contact		Group Contact		Mass Media Contact	
Amount of Agricultural Income						
Less than 50% income from agriculture	3.27	E	2.9	E	3.11	E
50% or more income from agriculture	3.11	E	3.14	E	3.33	E
Type of Farm Production						
Crop production only	3.19	E	3.2	E	3.48	E
Livestock production only	3.26	E	2.92	E	2.77	E
Both crop & livestock production	3.26	E	3.03	E	3.19	E
Age						
Less than 40 years of age	3.29	E	3.76	HE	3.17	E
41-50 years of age	3.21	E	2.76	E	2.86	E
51-60 years of age	3	E	2.67	E	3.05	E
61 or more years of age	3.36	E	3.40	E	3.49	E
Level of Education						
Less than 4 year degree	3.36	E	3.39	E	3.38	E
4 year degree	3.15	E	2.97	E	3.26	E
More than 4 year degree	3.15	E	2.44	SE	2.98	E

groups valued these methods at 2.76 and 2.67 respectively. The older respondents assigned a 3.49, near Highly Effective, to Mass Media, while those 41-50 yielded a numerical mean of 2.86

For a final comparison, respondents were grouped according to level of education. With one exception, the three sets of methods received mean effectiveness ratings of Effective from all three groups. The exception was Group Contact, which was rated at 2.44, Somewhat Effective, by those that had attained more than a four-year degree. Those that had less than a 4-year degree provided the highest numerical ratings for all three categories of methods.

Conclusions

The following conclusions were based on the researcher's interpretation of the findings of this research as applied to the Kay County agricultural producers that participated in the study.

1. Respondents preferred and made the greatest use of the program delivery and contact methods that required more of their own initiative and action (e. g., several methods of Mass Media) and those that involved greater personal contact with Extension personnel (e. g., telephone calls and visits). Other than Tours and Field Trips, Group Contact methods received relatively little use.
2. The vast majority of the program delivery/contact methods included in the study were considered to be effective means of obtaining information from and interacting with Extension staff.

3. As a group and by the respondents as a whole, the Individual Contact methods were the most valued, with those in the Mass Media group being next in line. Both of these were viewed as considerably more effective than Group Contact methods.
4. Differences in how part-time and full-time producers perceived the effectiveness of methods were minor. However, full-time producers did perceive Computer e-mails to Extension Staff, Panel Discussions and Video-Tapes as considerably more effective than did part-time producers.
5. Although considered effective by respondents overall, it was evident that the 41 to 50 year old and the 51 to 60 year old age groups were considerably less positive toward Group Contact methods than were their older and younger counterparts.
6. Respondents having greater than a 4-year college degree viewed Group Contact methods as considerably less effective than did those with less than a 4-year degree or those with a 4-year degree.
7. The crop production only participants had the most positive feelings toward the three groups of methods, with the livestock only producers being less so regarding Group Contact and Mass Media lower than the other two sets of producers.
8. The variables amount of agricultural income, type of farm production, age, or level of education did not produce differences in the manner in which respondents perceived the effectiveness of the delivery and contact methods.

General Recommendations

The following recommendations are made as a result of the data analysis and findings of the research.

1. In future planning of how to deliver educational programs and make contact with Kay County agricultural producers, the overall extent of use and effectiveness ratings of the methods included in this study should be given more consideration than how the clients differ with regard to demographic variables.
2. Telephone calls to Extension office, visits to Extension office, newsletters, tours and field trips and use of pamphlets and Fact Sheets should continue to be major methods utilized in the county.
3. With the increased amount and accessibility to technology, methods such as e-mails to Extension staff and computer websites may have considerable more potential than was found in this study. Staff should make certain clients are aware of new developments in these areas.
4. A mechanism through which Extension staff from throughout the state could share their experiences in the use of program delivery and contact methods would be a beneficial project.

Recommendations for Additional Research

The following recommendations are made with regard to future research in this area.

1. Conducting this study again utilizing methodology to secure inputs from a larger and more representative group of respondents would provide even more valuable information to improve the delivery efforts of Extension professionals.
2. A study similar to this, but across all Extension program areas involving adults would provide a broader assessment of the use and effectiveness of delivery and contact methods.
3. A Delphi-type study conducted in several counties to identify clients' preferences for delivery and contact methods as well as other aspects of Extension programming would be beneficial.
4. A study among Extension Educators to assess their skill levels and needs with regard to program delivery and contact methods could be used as the bases for in-service education to improve and expand their effectiveness and use.

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APPENDIXES

APPENDIX A

INSTITUTIONAL REVIEW BOARD

APPROVAL FORM

Oklahoma State University
Institutional Review Board

Protocol Expires: 4/30/03

Date: Thursday, May 02, 2002 IRB Application No: AG0234

Proposal Title: KAY COUNTY, OKLAHOMA AGRICULTURAL PRODUCERS' PERCEPTIONS OF SELECTED COOPERATIVE EXTENSION SERVICE PROGRAM DELIVERY AND CONTACT METHODS

Principal Investigator(s):

Robert Terry
458 AG Hall
Stillwater, OK 74078

Watie Dale Goodwin
8550-A WWCITD
Stillwater, OK 74078

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved *

Dear PI :

Your IRB application referenced above has been approved for one calendar year. Please make note of the expiration date indicated above. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved projects are subject to monitoring by the IRB. If you have questions about the IRB procedures or need any assistance from the Board, please contact Sharon Bacher, the Executive Secretary to the IRB, in 203 Whitehurst (phone: 405-744-5700, sbacher@okstate.edu).

Sincerely,

Carol Olson

Carol Olson, Chair
Institutional Review Board

*NOTE: NOTE: The IRB form has been revised. In the future, please use it.

APPENDIX B

SURVEY QUESTIONNAIRE

Questionnaire

Code Number (To be used only for tracking responses)

1. What is your postal address?

2. Please indicate the percentage of your gross income derived from:
   Crop enterprises
   Livestock enterprises
   Non-farm income
   Nature of income? (describe job, business, etc.)

3. Please check all of the types of agricultural production areas from which your agricultural income is derived. Leave blank if not applicable.

   Crop Enterprises
   ( ) alfalfa hay
   ( ) corn
   ( ) cotton
   ( ) grass or other hay
   ( ) milo/sorghum
   ( ) soybeans
   ( ) wheat
   ( ) others (specify) _____
   Livestock Enterprises
   ( ) beef cattle—cow/calf
   ( ) beef cattle—stocker
   ( ) dairy cattle
   ( ) horses
   ( ) sheep
   ( ) swine
   ( ) other (specify) _____

4. What is your age?

5. Please check the appropriate blank that applies to your education level:
   ( ) less than high school
   ( ) high school
   ( ) some college courses
   ( ) 4 year college degree (B.S. degree)
   ( ) courses beyond B.S. degree
   ( ) graduate level degree

6. To the left of each method or type of contact listed below, please indicate the

number of times you have used each in the past three years. Then, to the right of each, please circle the response that best indicates your perception of the effectiveness of each of the different types of program delivery or contact methods you have experienced with the Kay County OSU Cooperative Extension Service.

# of Times Used-Past 3 Years	Individual Contact	Highly Effective	Effective	Somewhat Effective	Not Effective
_____	Telephone calls to Extension office	4	3	2	1
_____	Visits to Extension Office	4	3	2	1
_____	Farm visits by Extension staff	4	3	2	1
_____	Computer e-mails with Extension staff	4	3	2	1
_____	Visits to University and/or experiment stations	4	3	2	1
	Group Contact				
_____	Tours or field trips	4	3	2	1
_____	Workshops	4	3	2	1
_____	Conferences	4	3	2	1
_____	Field days	4	3	2	1
_____	Seminars	4	3	2	1
_____	Panel discussions	4	3	2	1
	Mass Media				
_____	Newsletter	4	3	2	1
_____	Computer websites	4	3	2	1
_____	Radio program	4	3	2	1
_____	Newspaper articles	4	3	2	1
_____	Television programs Please specify _____	4	3	2	1
_____	Pamphlets/fact sheets	4	3	2	1
_____	Exhibits/displays	4	3	2	1
_____	Video tapes	4	3	2	1

Your input is greatly appreciated on this research study. Please feel free to make any additional comments which might be helpful for the study.

THANK YOU!

APPENDIX C

APPROVAL LETTER, NORTHWEST DISTRICT

OSU
OKLAHOMA COOPERATIVE EXTENSION SERVICE

Oklahoma Cooperative Extension Service
Division of Agricultural Sciences and Natural Resources
Oklahoma State University

Northwest District • 205 W. Maple, Suite 610 • Enid, Oklahoma 73701-4011
(580) 233-5295 • Fax (580) 233-9215

November 30, 2001

Dale Goodwin
8550 W. North Avenue
Ponca City, OK 74601

Dear Dale:

Thank you for your patience as I reviewed your proposed survey form and discussed your research project with Dr. Ross Love. I have no suggestions for your survey instrument, so you can proceed with the next step in getting committee approval for this part of your graduate research project.

When you are ready to develop a random sample of the agricultural producers in Kay County, please contact Bart Cardwell so that a sub-sample of the name list of farmers can be used. I would be willing to work with you and Bart to draft a letter to the selected producers in order to maximize survey response rates.

Good luck with this phase of your graduate program. If you have any questions please feel free to call me.

Thank you,

Gerald Warmann
N.W. District Extension Director

sm

c: Bart Cardwell

APPENDIX D

COVER LETTER

Oklahoma Cooperative Extension Service
Division of Agricultural Sciences and Natural Resources
Oklahoma State University

Kay County OSU Extension Center, Box 430, Newkirk, OK 74647
Phone: 580-362-3194 Fax: 580-362-2268 Email: kayext@okstate.edu

Date: May 28, 2002

To: Kay County Agricultural Producers
From: Bart Cardwell, Kay Co. Ext. Educator-Ag/4-H/CED

Ladies and Gentlemen:

Enclosed is a survey being conducted by OSU researchers to evaluate the ability of the County OSU Extension Centers to get timely, accurate information to producers in Kay County. The purpose of this study is to analyze how producers prefer to receive information as well as how frequently they use information from the Kay County OSU Extension Office. All the information you give will be kept strictly confidential.

Simply fill out the front and back of the enclosed questionnaire and send it back to the researchers using the enclosed return envelope. Please return the questionnaire by **June 7, 2002.** Each questionnaire has been assigned a code number in order to contact you after the deadline for follow up if your questionnaire has not been received.

Thank you for your time in helping OSU Extension meet your needs as an Agricultural Producer in Kay County.

Sincerely,

Bart Cardwell
EE-Ag/4-H/CED
Kay County, OK

VITA #2

Watie Dale Goodwin

Candidate for the Degree of

Master of Science

Thesis: KAY COUNTY AGRICULTURAL PRODUCERS'USE AND PERCEIVED EFFECTIVENESS OF SELECTED EXTENSION SERVICE PROGRAM DELIVERY METHODS

Major Field: Agricultural Education

Biographical:

Personal Data: Born in Sallisaw, Oklahoma, January 2, 1966, the son of Watie L. and Norma Goodwin, Married July 30, 1988 to Carol Detten, children Elizabeth Ann Goodwin, Maria Dianne Goodwin, Garrett Dale Goodwin, and Daniel Thomas Goodwin.

Education: Graduated from Sallisaw High School, Sallisaw, Oklahoma, May, 1984; received the Associate of Science degree from Connors State College, Warner, Oklahoma, May 1986; received the Bachelor of Science degree in Agriculture from Oklahoma State University, Stillwater, Oklahoma, May, 1989; completed requirements for the Master of Science degree in Agricultural Education at Oklahoma State University in May, 2003.

Professional Experience: Agricultural Education instructor, Perry High School, Perry, Oklahoma, July 1996 to June 1999; Extension Educator - Agriculture, Oklahoma Cooperative Extension Service, Kay County, Newkirk, Oklahoma, June 1999 to October, 2000; Vocational Careers Instructor, Pioneer Technology Center, Ponca City, Oklahoma, October 2000 to present.

Organizations: Oklahoma Career and Technology Educators Association and National Vocational Educators Association.