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ABSTRACT

One of a series of surveys conducted as part of a statewide study to assess educational and employment opportunities of rural populations in Montana, this report summarizes the procedures, conclusions, and recommendations involved in a study of agricultural producers in the State. In an effort to determine employment trends and ascertain occupational variables, questionnaires were used with a sample of 50 percent of the agricultural producers owning farms in the under 6,000 acre category and classified as operator or owner-operator, and 100 percent of those producers operating farms in excess of 6,000 acres. Of the 4,161 surveys mailed to Montana agricultural producers, 1,495 or 35.9 percent were returned. An analysis of data obtained resulted in a pool of information identifying a population of agricultural producers in the State from which a sample may be drawn to further identify job titles, job clusters, and job competencies. Related documents are available as VT 017 462-017 464 in this issue. (SN)

Agri-production Manpower Project Manual

Ⓒ AGRICULTURAL EDUCATION DEPARTMENT · MONTANA STATE UNIVERSITY, BOZEMAN



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AGRICULTURAL PRODUCERS MANPOWER REPORT MANUAL

by

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Douglas D. Bishop

The work presented herein was performed by the Montana
Agricultural Experiment Station and supported
by the Office of Superintendent of Public
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and Occupational Skills.

The Montana State University
Department of Agricultural Education
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PREFACE

Agricultural production affects the existence of every person in Montana. Even the most casual observer cannot help but identify with some of the changes which agriculture has undergone since it is the heart of Montana's economy. Employment changes have occurred as a result of the expanding technological revolution in agriculture. Therefore it is necessary to accurately determine the degree and direction of change and to ascertain the implications of these changes as a basis for developing efficient and effective agricultural educational programs.

This study, a first in Montana, has as its ultimate aim the provision of a more viable manpower source for Montana agricultural producers.

The Agricultural Education Department of Montana State University has undertaken this project in keeping with its goal of providing studies which will help identify, clarify and ultimately improve the quality and availability of agricultural employment to the people of Montana.

Dr. Max L. Amberson
Department of Agricultural Education
Montana State University

ACKNOWLEDGMENTS

The magnitude of conducting Agricultural Manpower Studies in Montana precludes pursuing rational solutions in isolation; therefore, it was essential to enlist the assistance of interested individuals, agencies and organizations throughout Montana and the nation. Several agencies have made specific contributions and should be specifically recognized: the Office of the Superintendent of Public Instruction; the Montana Agricultural Stabilization and Conservation Service; the Internal Revenue Service (Ogden Office); the Office of the Governor of Montana; the Montana Cooperative Extension Service; the Montana Experiment Station; the Montana State University Departments of Agriculture, Mathematics and Library; the Montana Crop and Livestock Reporting Service, Helena, Montana; the Montana Employment Security Commission; the United States Department of Agricultural Economic Research Service; the Office of Congressman Richard G. Shoup; and the Agricultural Committee of the Montana Chamber of Commerce. The cooperation and assistance from the personnel of these agencies greatly facilitated the efforts of this study.

Mrs. Barbara Agocs, technical assistant, and Mrs. Erma Belden, secretary, were responsible for the execution of the manuscript. Their whole-hearted dedication was appreciated.

INTRODUCTION

In a speech made in 1966, George L. Mehren, Assistant Secretary of Agriculture, stated that the story of this half of the 20th century could be expressed in one word: CHANGE. Change has given agriculture new direction, with abundance not only as the end result but as, perhaps, a cause of some of its problems. The number of people living on farms and ranches has decreased and will continue to decline in the future, but farm production of food and fiber continues to increase. Incomes are up. New uses for our natural resources are beginning to emerge... one of the most spectacular of which is recreation. A new approach to farming as part of an overall revival of rural America is another phase of agriculture's new direction. This phenomenon has sometimes been referred to as the "rural renaissance."

As the character of the agricultural industry changes, the nature and scope of educational programs for rural youth and adults must also change. There is a dearth of current data relative to employment opportunities. These data are needed by program planners to develop models for future educational programs for rural youth and adults which, when followed, will provide background for changing current programs and will assure broader program validity in the future. This study will provide employment data about Montana's basic industry--Agriculture. A complete analysis of the manpower data collected, will be useful in establishing priorities for future in-depth studies. These further studies will provide the data needed for making decisions about manpower training and education.

Should the design of such a model prove successful using agriculture as a subject for study, this model could then be transferred to other areas of business.

A REPORTING SYSTEM

Identifying the current and projected agricultural employment needs of approximately 28,000 farms and ranches in Montana is a time-consuming activity. An examination of Federal Internal Revenue Service reports revealed that less than one-half (10,028) of Montana's agricultural producers hire employees. The majority rely solely on family labor to perform the labor functions on their farms and ranches.

The Montana Employment Security Commission and the Montana Economic Research Service are the state agencies who have conducted studies to isolate agricultural employment opportunities. The data collected by these agencies were on a sample census basis for special purposes. The data from the above sources were valuable as a starting point for this study, but specific information relating to production agriculture were lacking. It was, therefore, necessary to conduct a separate in-depth study in order to obtain reliable information.

THE PROPOSAL

In the spring of 1970, the staff of the Department of Agricultural Education proposed to initiate a statewide effort to determine the nature and extent of rural youth and adult educational and employment opportunities uniquely associated with agriculture. The proposed research was viewed as a planned effort to gather data which would reflect a more precise picture of the educational needs and occupational opportunities available to rural youth and adults in Montana.

Separate segments of the project would revolve around the accomplishment of four major objectives:

1. To assess the nature of and extent of educational and employment opportunities for rural youth and adults engaged in or preparing to engage in agricultural or agriculturally related occupations.
2. To develop and demonstrate approved methods and procedures for developing formal and informal rural youth and adult educational programs of effective format to meet objectives derived from an analysis of the need for educational programs in agriculture in Montana.
3. To evolve guidelines for the utilization of an educational consortium to provide educational activities which would enable rural youth and adults in agricultural pursuits to acquire needed competencies.
4. To establish a design and mechanism for the dissemination, evaluation, adjustment and renewal of rural youth and adult educational programs in agriculture in Montana.

During the early stages of the planning process it became apparent that the magnitude of the objectives would dictate that the project be divided into separate, but not mutually exclusive, phases. Reports of similar research conducted in California (17), and Oklahoma (10), specifically

indicated that agri-business and production agriculture should be treated as separate entities. This observation prompted the researchers to divide agri-business and production into two separate research phases. This proved to be a wise decision due to the variety of sources from which original data were derived, the different research techniques employed and the desirability of separate final reports.

THE AGRICULTURAL PRODUCTION RESEARCH EFFORT

Sub-objectives were extrapolated from the four major objectives to enable the researchers to deal specifically with segments of the major problem. Sub-objectives identified were:

1. To involve the several affected agencies, institutions and individuals in Montana in the agricultural manpower identification process.
2. To determine certain basic data about respective agricultural producers.
3. To collect selected basic data about the agricultural producers' operation.
4. To determine the number of seasonal and full-time employees currently employed in agricultural production in Montana and the number of predicted positions three years hence.
5. To ascertain the employee benefits provided by agricultural producers.
6. To determine the job titles in which full-time and seasonal vacancies currently exist among agricultural producers.
7. To determine the nature of employment provided by agricultural producers as it relates to hours per week, months per year, educational requirements, value of salary, meals, housing, etc.
8. To determine the reasons for the difficulty in obtaining and holding employees in certain job titles over the last few years.

PROJECT FUNDING

The original proposal was presented to the Montana Agricultural Experiment Station in June of 1970 to be considered as a part of the total experiment station research effort. After reviewing the objectives of the proposal it was felt that the manpower project did not fit the criteria which had been established for new research projects. In the spring of 1971, the proposal was submitted again for further consideration and, after some modification, was accepted for support with special rural development funds. Sufficient monies were transferred to the Department of Agricultural Education to support a full-time research assistant and to take the initial steps in getting the manpower project underway.

A detailed accounting of anticipated costs of the project indicated that the experiment station's support would not provide sufficient monies to undertake the manpower project during the first year. The project coordinators met with staff members from the Office of the Superintendent of Public Instruction, the Director of Vocational and Occupational Skills and the Director of Research, Planning, Development and Evaluation Component to discuss the problem. As the result of this and subsequent meetings an additional grant was provided to the Agricultural Education Department through the Research, Planning, Development and Evaluation Component, Office of State Superintendent of Public Instruction, to furnish a complete analysis of all manpower data gathered through the research project. The combination of the two grants allowed the project coordinators to launch the entire manpower project as planned.

PROCEDURE

The procedure followed in completing the agricultural production phase of the Agricultural Manpower Project was dictated primarily by the central purpose of the study and by the previously stated sub-objectives. In order to accomplish the previously stated purpose of the research effort of preparing a final agricultural manpower report, the following activities were initiated:

1. Identify interested and influential peer groups and specific opinion leaders within agencies, institutions and organizations in Montana and acquaint them with the objectives of the study.
2. Review pertinent literature and research describing research of a similar nature.
3. Identify the study population, secure the addresses and select a sample population.
4. Develop and test the survey instrument to be used to collect data needed to quantify study objectives.
5. Develop and refine the research methodology to be used in collecting essential data and in preparing the final manual and report.
6. Conduct the agricultural producer survey.
7. Tabulate and record data collected from the survey.
8. Analyze and interpret data collected.
9. Publish and distribute results of the Agricultural Producers Manpower Study.

IDENTIFYING INTERESTED AND INFLUENTIAL GROUPS

At the time the staff of the Department of Agricultural Education at Montana State University was planning the Agricultural Manpower Study two other groups were also exploring the possibility of such a study. These included the Office of the Superintendent of Public Instruction, Division of Vocational and Occupational Skills, and the agri-business sub-committee of the agricultural committee of the Montana Chamber of Commerce. Subsequently, the staff of the Superintendent's office called a meeting of members of the three interested groups. The meeting was general and exploratory in nature with the resulting consensus that if the Agricultural Education Department at Montana State University wished to be primarily involved in a study of this nature, the Superintendent's office and the Chamber of Commerce would lend their support to this effort. Further, they suggested agencies, institutions, organizations and individuals that would be interested in being involved in some way in the study and provided the names and addresses of these individuals and groups.

REVIEW OF LITERATURE AND RESEARCH

Time was the most limiting factor in conducting this study due to the full teaching and advisory load of the staff involved. Therefore, with the aid of a technician, the staff was able to multiply its efforts in searching out literature and related research. Several documents were isolated and relied upon heavily in the design and initiation of the study. These selected references appear in (Appendix A, p. 29-30).

Additional information regarding the development of similar studies was obtained through the ERIC (Educational Resources Information Center) informational system, a current index of educational research prepared through the U. S. Office of Education and now available through the Montana State University Library.

The review of research provided the essential procedure for scientifically obtaining the data needed for the agricultural producers study.

Definition of Agricultural Production

To reduce possible confusion and misunderstandings and to give direction to the process of identifying present and anticipated production agricultural employment opportunities, the following definition was established:

Agricultural production includes those activities associated with the principles and processes involved in the planning related to and the economic use of facilities, land, machinery, chemicals, finance and labor. These components are involved primarily in the production of plant and animal products. Agricultural production also includes, to varying degrees, the preparation of these products on farms or ranches for man's use and their disposal by marketing.

IDENTIFYING THE AGRICULTURAL PRODUCERS

Agricultural production is Montana's number one income-producing industry. Because of this fact, the names and addresses of these businessmen are recorded in several locations. First, since nearly all Montana's farms and ranches carry on some conservation efforts, the State Agricultural Stabilization and Conservation Office (Bozeman, Montana) has certain basic data about agricultural producers. Second, since labor is a necessary ingredient in any farm or ranch operation, labor costs become a tax deduction and therefore agricultural producers who hire labor can be identified through the Internal Revenue Service. Third, the 1970 agricultural census recorded some agricultural data on computer tapes which are available for use through the State of Montana Planning and Economic Development Office. Fourth, the United States Department of Agriculture (USDA) inventoried the status of agricultural employment and placed selected names and addresses of Montana agricultural producers on file. Fifth, it was also found that Montana County Extension Agents have the names and addresses of agricultural producers on file at each county office.

It should be noted that policy regarding the release of the above mailing lists is an individual matter with each agency. Whether or not one acquires a respective list is dependent upon the objectives of the study being conducted and their relationship to the objectives of the particular agency.

DETERMINING POPULATION AND SAMPLE

Probably the most time consuming and tedious procedure in the study was the determination and designation of the sample population. The cooperation of the State Agricultural Stabilization and Conservation Service (Bozeman, Montana) was enlisted and approval was given by their national office to provide the Agricultural Education Department at Montana State University with a list of producers by counties involved in ASCS programs. The names and addresses of approximately 26,000 producers were key-punched on computer cards and entered on computer tape. In addition, information regarding the agricultural producers' type of operation and the extent of acreage in their operation was entered on IBM cards. The data, which included the producer's name, address, county of residence and zip code mailing number, were put on computer tapes and sorted according to size of farm operation. A coding sheet for this information was devised. (Appendix B, p. 32)

Initially, survey instruments were to be sent to the total ASCS population of 26,000. However, the cost of such a mailing proved to be prohibitive. Consideration of a sample of about 4,000 producers was then entertained with the principles of stratification employed so that a distribution of all sizes of farms and types of farm ownership would be represented.

As this alternative was explored it became obvious that many instruments would be mailed to operations that had not hired employees. Should this occur on a large scale it would be possible to initiate the mailing and not receive the required information regarding current and projected job openings and other information essential to satisfying the objectives of the study. With this in mind, it was necessary to establish a list of producers who hired persons other than family. Further research and discussions revealed the availability of a list of producers in Montana who hired farm labor and who in the calendar year 1971 had paid wages of over \$150 or hired workers for 20 days or more. This information was available on tape through the Internal Revenue Service and was requested by the Governor's Office from the Internal Revenue Service as part of the tax treaty existing between the State's Executive Officer and the Commissioner of the Internal Revenue Service in Washington, D. C. The Governor's Manpower Specialist was asked to aid in obtaining this data. After enlisting the assistance of one of Montana's congressional representatives, the names and addresses of Montana agricultural employers on file in the Ogden Regional Office of the Internal Revenue Service were acquired. This list contained 10,028 agricultural producers and was provided at a nominal cost.

The IRS list of employers hiring employees was key-punched on IBM cards. Since the ASCS list and the IRS list contained different information, it was necessary to fuse the two data sources into one aggregate list.

Because the original ASCS listing from some counties, containing approximately 4,000 names was incomplete, those names of producers for which the type of ownership and acreage was omitted on the original lists had to be returned to the county offices of the ASCS. In order to do this, it was necessary to duplicate the original list and return it to the proper county office. In some instances we were able to complete the information and the names were then punched and put into the card deck.

Availability of Card Decks and Computer Lists

Card decks and computer tapes were kept and are available to the Office of the Superintendent of Public Instruction from the Department of Agricultural Education upon request.

Sample Process

The following process was devised to select the sample for the study:

1. Process ASCS cards to remove duplicates.
2. Process ASCS cards and the IRS cards in separate lists sorted by zip codes.
3. Hand match the names of the IRS list with those on the ASCS list.
4. Key punch above list and put into computer to produce a list of persons resulting from the merger of the IRS and ASCS lists.

5. Re-sort the above aggregate list resulting in a list which was cross-classified by type of ownership and size of farm.
6. Establish sampling frame.
7. Select sample.
8. Distribute material to chosen sample.

The several processes executed to derive the sample population appear in Figure 1.

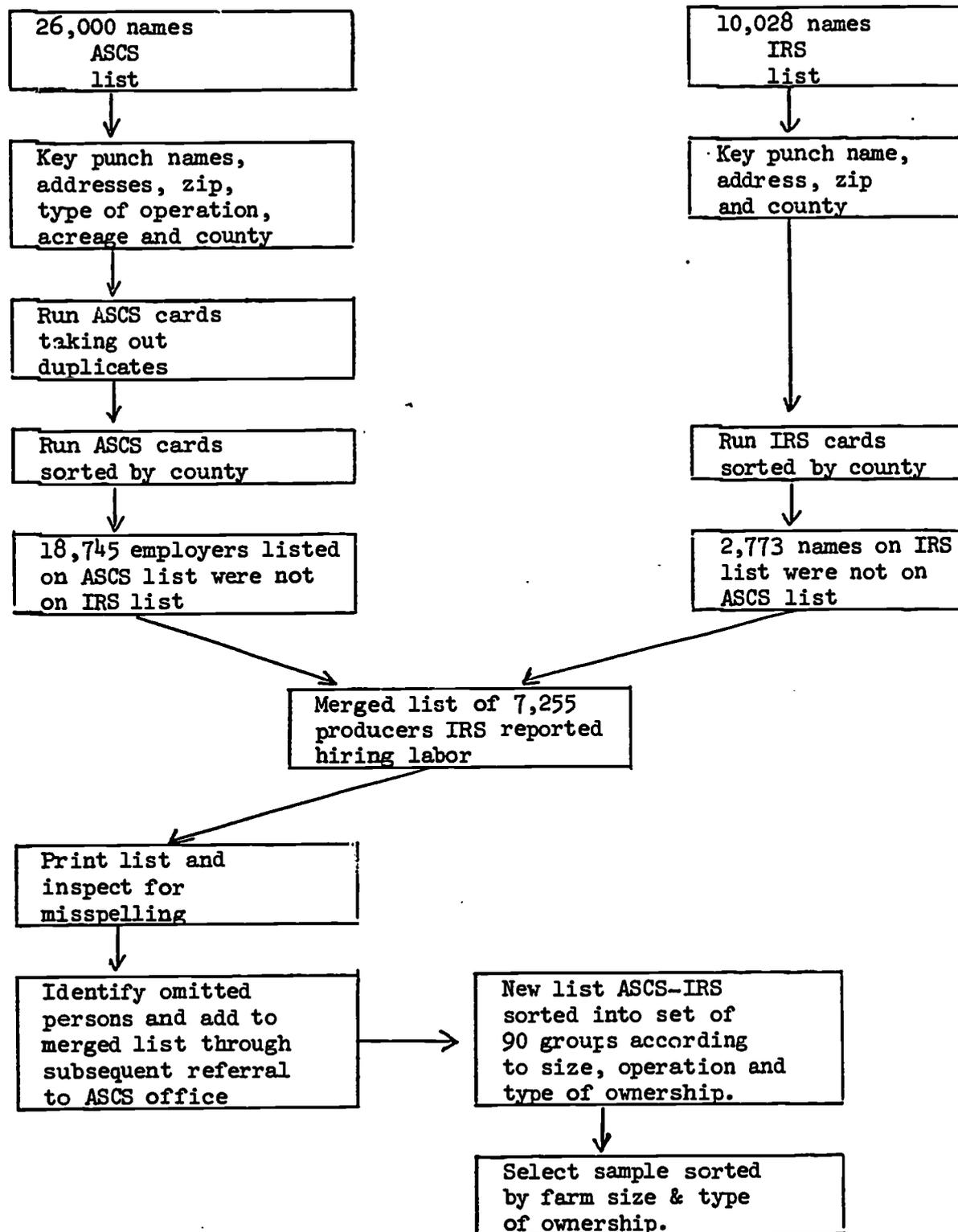


Figure 1 SAMPLE SELECTION PROCESS

SAMPLING RATIONALE

Research suggested that the nature and extent of employment among agricultural producers is dependent primarily upon farm size and on the type of farm operation. Since both size and type of ownership were known, an array separating these variables into cells seemed a logical first step in the sampling process.

Sample Population

As described above, the sample was determined to be: Fifty percent of the population of agricultural producers in the 0 to 6,000 acre size category who operated under the following types of ownerships: owner-operation or operator. A 50% random selection was drawn using a table of random numbers. One hundred percent of the agricultural producers who operated farms of 6,000 to 10,000 and over acres and who operated under owner-operator, operator, joint operator, corporation, partner, joint owner-operator, owner-operated-corporation, or owner-operator-partner also was included in the sample population. The rationale for selecting the sample in this way was to assure that smaller cells would be sampled.

ACRES

Type of Operation		$\frac{0}{50}$	$\frac{51}{100}$	$\frac{101}{300}$	$\frac{301}{500}$	$\frac{501}{1000}$	$\frac{1001}{2000}$	$\frac{2001}{4000}$	$\frac{4001}{6000}$	$\frac{6001}{10000}$	over $\frac{10000}{\text{acres}}$	
Owner Operator	1	$\frac{26}{13}$	$\frac{51}{25}$	$\frac{293}{147}$	$\frac{266}{133}$	$\frac{390}{195}$	$\frac{588}{294}$	$\frac{539}{269}$	$\frac{201}{100}$	$\frac{163}{163}$	$\frac{148}{148}$	$\frac{2665}{1487}$
Operator	2	$\frac{10}{5}$	$\frac{32}{16}$	$\frac{251}{125}$	$\frac{287}{143}$	$\frac{609}{304}$	$\frac{1147}{573}$	$\frac{1139}{569}$	$\frac{351}{175}$	$\frac{211}{211}$	$\frac{106}{106}$	$\frac{4143}{2227}$
Joint Operator	3	$\frac{1}{1}$	$\frac{0}{0}$	$\frac{4}{4}$	$\frac{3}{3}$	$\frac{8}{8}$	$\frac{18}{18}$	$\frac{34}{34}$	$\frac{7}{7}$	$\frac{7}{7}$	$\frac{5}{5}$	$\frac{87}{87}$
Corporation	4	$\frac{0}{0}$	$\frac{0}{0}$	$\frac{3}{3}$	$\frac{1}{1}$	$\frac{4}{4}$	$\frac{7}{7}$	$\frac{14}{14}$	$\frac{8}{8}$	$\frac{16}{16}$	$\frac{15}{15}$	$\frac{68}{68}$
Partner	5	$\frac{0}{0}$	$\frac{0}{0}$	$\frac{0}{0}$	$\frac{4}{4}$	$\frac{7}{7}$	$\frac{16}{16}$	$\frac{30}{30}$	$\frac{8}{8}$	$\frac{5}{5}$	$\frac{3}{3}$	$\frac{73}{73}$
Joint Owner Operator	6	$\frac{0}{0}$	$\frac{0}{0}$	$\frac{2}{2}$	$\frac{4}{4}$	$\frac{6}{6}$	$\frac{11}{11}$	$\frac{7}{7}$	$\frac{4}{4}$	$\frac{1}{1}$	$\frac{2}{2}$	$\frac{37}{37}$
Owner	7	$\frac{0}{0}$	$\frac{0}{0}$	$\frac{6}{6}$	$\frac{6}{6}$	$\frac{10}{10}$	$\frac{15}{15}$	$\frac{20}{20}$	$\frac{7}{7}$	$\frac{7}{7}$	$\frac{2}{2}$	$\frac{73}{73}$
Owner Operator Corporation	8	$\frac{0}{0}$	$\frac{1}{1}$	$\frac{1}{1}$	$\frac{1}{1}$	$\frac{8}{8}$	$\frac{17}{17}$	$\frac{20}{20}$	$\frac{15}{15}$	$\frac{10}{10}$	$\frac{14}{14}$	$\frac{87}{87}$
Owner Operator Partner	9	$\frac{0}{0}$	$\frac{0}{0}$	$\frac{0}{0}$	$\frac{3}{3}$	$\frac{3}{3}$	$\frac{6}{6}$	$\frac{6}{6}$	$\frac{1}{1}$	$\frac{0}{0}$	$\frac{3}{3}$	$\frac{22}{22}$
		$\frac{37}{19}$	$\frac{84}{42}$	$\frac{560}{308}$	$\frac{575}{278}$	$\frac{1045}{545}$	$\frac{1825}{957}$	$\frac{1809}{969}$	$\frac{602}{325}$	$\frac{420}{420}$	$\frac{298}{298}$	$\frac{7255}{4161}$

Top figure represents the total population of the cell.

Bottom figure represents the population sampled within this cell.

FIGURE 2

When the 10,028 names appearing on the IRS list were hand-matched to the 26,000 names for which there was ASCS information, a combined ASCS-IRS list resulted with 7,255 producers from which a population of 4,161 producers was selected.

Since a random sample was drawn, it was assumed that there would be representation among agricultural producers from all parts of Montana. To check for geographic distribution, the sample was arrayed over the Montana map. Since the U. S. Postal Service divides Montana into nine regions, and since the mailing lists which would be used to draw a sample contained zip codes which could be used as a means to array the sample, these boundaries were accepted. A geographic array of the sample appears on Figure 3.

Determining Sample

Statisticians advised that a 10% sample would be adequate to sample the population under consideration. However, since funds were available for a larger sample, a sample of 4,161 was drawn.

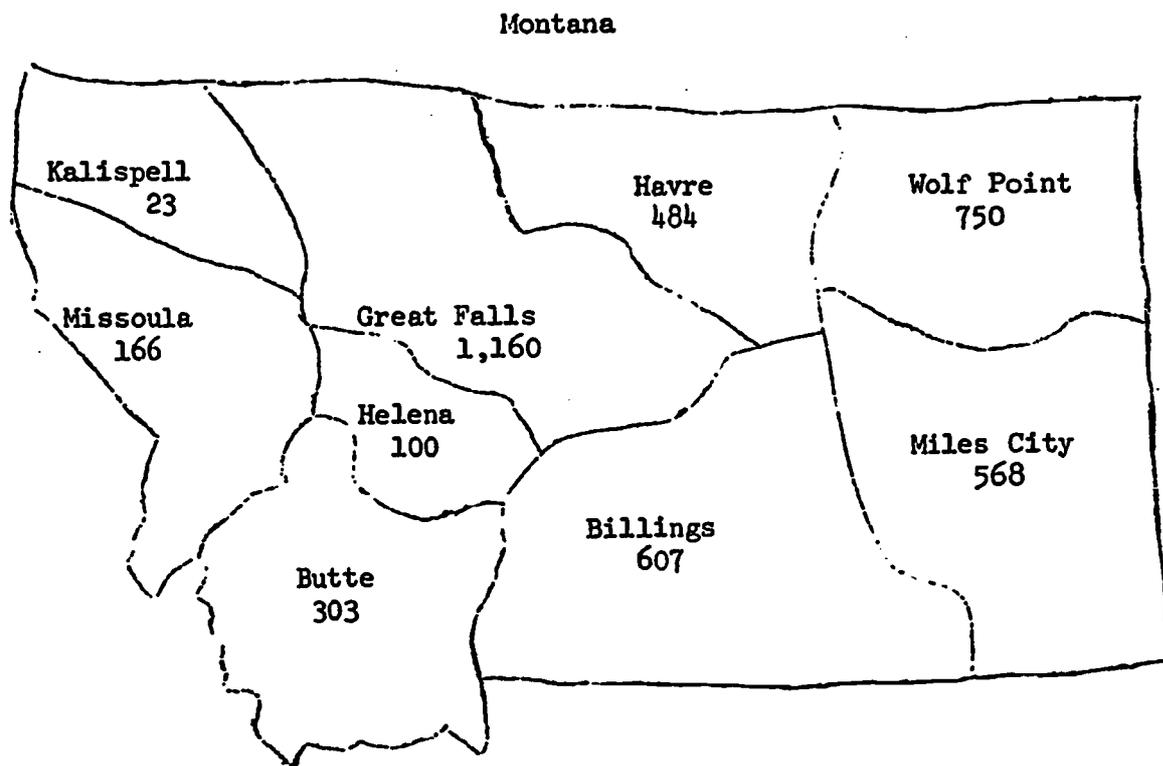


Figure 3 GEOGRAPHIC DISTRIBUTION OF SAMPLE OF AGRICULTURAL PRODUCERS

THE DEVELOPMENT OF THE SURVEY INSTRUMENT

Initially, the research staff prepared a list of questions which answer the sub-objectives. These questions were reviewed by the staff of the Farm Placement and Rural Manpower Office of the Montana Employment Security Division, the Governor's Manpower Specialist, the Department of State Planning and Economic Development and by the staff of the Montana Crop and Livestock Reporting Service of the United States Department of Agriculture. In each instance, the purpose of the conference was to establish whether the information needed for the survey was available from any other source and just what agriculture manpower statistics could be provided by these agencies or offices.

Staff from these agencies cooperated fully and provided examples of their instruments for gathering information and the data available. Unfortunately, the information compiled did not meet the objectives of this study. Although it was detailed it did not relate to specific farms in specific counties. In several instances, the personnel of these agencies made suggestions regarding the type of questions which might be asked and ways of asking these questions. As a result of this meeting, the research staff assembled the questions into a preliminary survey instrument.

To further refine the survey instrument, a group of Montana Vocational Agricultural Instructors was invited to the Montana State University campus. Mr. Ashcraft, State Supervisor of Agricultural Education, was consulted as to who should be involved in this meeting. Their suggestions and comments were incorporated into the instrument appearing in Appendix C.

Dr. James Beckett, Educational Professions Development Act Program Specialist, California State Department of Vocational Education, Sacramento, California, was invited to Montana as a consultant to advise and make recommendations regarding the study design. Beckett's experience as coordinator for the California Agri-business study was invaluable in assisting in the further refinement of Montana's preliminary instrument. Major changes were made in those questions relating to job titles, job changes, income and work periods.

The State Supervisor of Agricultural Education and the staff of the Research, Planning, Development and Evaluation (R.P.D.E.) of the Office of the Superintendent of Public Instruction contributed to the layout, design and further refinement of the instrument.

Three subsequent changes of the instrument between the R.P.D.E. Office and the Department of Agricultural Education resulted in surveys which appear in Appendix D, E, F and G, p. 38-54.

The final survey instrument was then printed using an off-set printing process (Appendix H, p. 56-58) and was field-tested by sending it to selected agricultural producers, known by the researcher, in Gallatin County. These producers were called by telephone and asked if they would respond to the survey. Each of these producers indicated his willingness to assist in the research endeavor and was sent printed survey forms by mail just

as would producers who would be asked to respond at a later date. Each producer responded and seemed to encounter little difficulty with the survey instrument. Although they were given an opportunity, none of the respondents changed the original questionnaire.

In retrospect, the pilot effort to validate the questionnaire was not as extensive as it might have been. When the researcher began to compile data from the questionnaire, several ambiguities and misunderstandings in the interpretations of questions by respondents was evident.

CONDUCTING THE AGRICULTURAL PRODUCER SURVEY

Studies conducted with agricultural producers traditionally net few responses. Purcel's (16) research dealing with agri-businesses revealed that added responses could be acquired through the use of:

1. Different incentives
2. Different number of incentives.

Therefore, the following survey techniques were outlined and followed:

1. Use of a prestigious person to announce the intent and importance of the survey to the recipients in advance of their receiving the survey, through a personally addressed, signed letter.

Dr. Joe Asleson, Director of the Agricultural Experiment Station and Dean of the College of Agriculture, which includes the Montana Cooperative Extension Service, was selected to be the prestigious person by the researchers. A letter inviting his participation appears in Appendix I, p. 60.

A letter to the agricultural producers of the sample population (4,161) was written by Asleson and mailed announcing the survey to follow. The letter written to producers by Asleson appears in Appendix I, p. 61.

2. Ten days following the initial letter as mentioned in Item 1, a cover letter, personally addressed and signed by the selected prestigious person, was sent to each person in the sample population. The letter personally invited their participation in the study by responding to the attached survey instrument. Appendix I, p. 62 contains this letter.
3. The use of a personal incentive (instant coffee sample pack) to the recipient of the survey to further encourage his participation was attached. The instant coffee sample was purchased at the cost of approximately 4¢ per pack. (Appendix I, p. 63).

4. As an added incentive to producers, the survey instrument was printed on pale yellow paper. Each survey was coded with type-written numbers. These numbers represented the computer code number and the code number for the farm size and type of farm operation. This code appeared on the top of page 2 of the instrument.
5. At the same time the initial letter from Asleson was sent out, Mr. Doug Warren, Office of Information, Montana State University, prepared news releases for all the major papers in Montana. See Appendix I, p. 64, for a typical release which appeared in the Bozeman Daily Chronicle. A three minute radio tape was prepared by the same office and was played on the Montana State University Experiment Station News throughout Montana during the week in which the letter was being received by producers.
6. A brochure entitled "Agricultural Manpower Project" was prepared which outlined the objectives, goals, benefits, and a general narrative described the study. These were mailed to Montana Teachers of Vocational Agricultural Education, County Extension Personnel, Experiment Station Personnel, Governor's Manpower Committee and state and local offices of the ASCS. A brochure is enclosed in Appendix I, p. 65.
7. Three weeks following the mailing of the survey instrument to Montana agricultural producers, a person was hired to look up phone numbers and contact non-respondents to obtain survey data over the phone, or to urge producers to return the questionnaire. The tally of time and responses to this is detailed on the attached sheet. If the recipients did not wish to provide the data over the phone, they were asked if they would complete a survey if one was mailed to them again. If they replied affirmatively, a letter with a survey was sent. (Appendix I, p. 66 and 56-58). All notations were made on the master sheet of any information that was gained via the telephone calls.

This procedure did not yield the same results that were realized in the agri-business survey. In many instances, the wives of the ranchers answered the phone and were hesitant to give the information required over the phone.

When the material that came in after this phone effort was designated on the master sheet, it was clearly evident that the telephone contact was effective as many of the people who were called did respond by returning the survey. In fifty-nine and one-half hours of calling, 659 calls were completed with 387 calls reaching a respondent who conversed on the phone with the caller about the Agricultural Producers Survey.

8. Each survey instrument was coded according to a pre-arranged card format. The format for six IBM cards needed to code the survey information is included in Appendix I, p. 67-71.
9. Decisions regarding job titles were made as a guide to key-punchers coding the survey instrument. This code appears in Appendix I, p. 72, 73.
10. Decisions were made regarding the reasons for job vacancies or difficulty in filling job vacancies. This code appears in Appendix I, p. 74.

As the survey instruments were returned, they were filed according to (1) geographic region of the state, (2) size of farm, and (3) type of farm operation. This system of categorization was possible because each survey contained code numbers indicating the above information. The daily receipt of surveys was handled in the following manner:

1. The envelopes were counted and divided into packs of 25.
2. The date was stamped on the back in the upper left hand corner.
3. The code was written on the front page on the upper right hand corner.
4. The questionnaire was scanned for omissions and confused replies and marked with a red pen with the letters "NV" near the code number and the reason why it was not valid.
5. The totals and reasons for invalidity were tallied on the Agricultural Manpower Survey Returns Columnar Sheet.
6. All questionnaires received were marked off on the master sheet with the date and the letters "NV" next to the date if the questionnaire was not valid with the reason for its not being valid also recorded.
7. The questionnaires were separated and filed by code number with valid questionnaires and non-valid questionnaires separated.

The data were arrayed in a numerical fashion to enable the researcher to account for current and projected job vacancies among Montana's Agricultural Producers, to report certain basic information about particular farm operations and to enumerate reasons for vacancies or difficulties in filling vacancies.

The complete results of the agricultural producers survey are reported in the Agricultural Producers Manpower Report as prepared by the Department of Agricultural Education.

SURVEY RESPONSE

Of the 4,161 surveys mailed to Montana Agricultural Producers, 1,495 or (35.9%) were returned at the writing of this manual.

Due to limitations of staff time and budget, it will be necessary to accept the data without further testing non-respondents from the total population. Since the data from the above mentioned survey will be used primarily as a basis to isolate certain agricultural producers for more in-depth interviews at a later time, it is not essential that a larger than 50% response be received to progress to the second phase of the study.

MAJOR CONCLUSIONS

The procedure outlines herein describe the statewide effort made to develop an economical, efficient and effective method of assessing Montana's current and anticipated employment opportunities in agricultural production. If a representative group of agricultural producers of this size and type has previously been identified it is unknown to the researcher.

As a result of the completion of the agricultural producers study, a population of agricultural producers has been identified from which a sample may be drawn to further define job titles, job clusters and to identify specific job competencies.

A further analysis of the data and an in-depth study of particular job titles should give some indication of the nature of appropriate agricultural education programs in the ensuing years.

RECOMMENDATIONS

Based on the experience gained in developing and using the procedure described, the following recommendations are made:

1. The employment needs of each farmer and rancher vary depending on the nature of his operation. Therefore, every effort should be made to involve a complete sample of potential employers in any effort designed to identify future employment needs and to plan future educational programs.
2. The methodology used in identifying the population for this survey is somewhat complex and should be carefully studied and refined subsequent to using it in further research efforts.
3. Manpower research of this type should be conducted on a longitudinal rather than a point-in-time basis, thereby eliminating what might seem to be "crash efforts".
4. Any agency or educational institution within Montana having an interest in or commitment to manpower research should proceed on the basis of documented research studies.
5. The use of the telephone to follow up non-respondents was less successful in the agricultural producers study than in the agri-business study. It would appear that agricultural producers are reluctant to provide data to researchers over the telephone. The telephone was, however, effective in urging producers to respond to survey instruments sent to them earlier through the mail. It should be noted, however, that in nearly all instances the agricultural producers did not answer the telephone themselves. Since calls were placed during the work day, the agricultural producers' wife most commonly responded to the call. In most instances, she was not sufficiently informed about the farm or ranch operation, or was reluctant to provide information to the caller, so that the questionnaire could be completed.

APPENDIX A

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10. Mitchell, Jesse B., Employment Opportunities and Educational Needs In Off-Farm Agri-Business Occupations in Oklahoma. Research Report, Division of Research, Planning and Evaluation, Stillwater, Oklahoma, 1971.
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17. Thompson, O.E., and others, Education in Agriculture in California, Research Report, College of Agricultural & Environmental Sciences, Davis, California, August 1971.
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APPENDIX B

CODE SHEET FOR AGRICULTURAL PRODUCERS

Column 1 through 27. Producers Name
 Column 38 through 52 Producers Address
 Column 53 through 67 Producers Town
 Column 68 through 72 Producers Zip Code
 Column 73 through 74 Producers County
 Column 75. Producers Type of Operation

- 1. 00. Owner Operator-operates and owns at least part of the land.
- 2. 0P. Operator-operates but someone else owns it.
- 3. 0PJ Joint Operator-two or more operators, doesn't own the land.
- 4. 0PC Corporation-operates farm, the articles of incorporation and has business registered as a corporation.
- 5. 0PP Partner-more than one person operating, does not own land.
- 6. 00J Joint Owner Operator-operates as a partnership on one or more of the income producing farm enterprises.
- 7. 0W. Owner-owns land but does not farm land.
- 8. 00C Owns some of land, is the operator and is incorporated.
- 9. 00P Owns some of land being farmed, is in a partnership.

Column 76. Producers Acres in Operation

- 0. 0 to 50 1,291
- 1. 51 to 100 974
- 2. 101 to 300. 2,952
- 3. 301 to 500. 2,340
- 4. 501 to 1000 3,282
- 5. 1001 to 2000. 3,950
- 6. 2001 to 4000. 3,032
- 7. 4001 to 6000. 1,002
- 8. 6001 to 10,000. 648
- 9. 10,001 plus 479

APPENDIX C

MONTANA AGRICULTURAL PRODUCERS SURVEY

Department of Agricultural Education
Montana State University

		ANSWER HERE
<p>I. <u>FARM WORK</u> - Report work on this farm or ranch during the 1971 calendar year. Include chores and marketing and transacting business.</p>		
<p>a. <u>FARM OPERATOR</u>, how many hours during the week did you work on this farm without receiving cash wages?</p>		
<p><u>HOURS WORKED</u></p>		(1)
<p>b. <u>OTHERS IN YOUR FAMILY</u>, (include children over 19) who worked 15 hours or more on this farm or ranch without receiving cash wages, (do not include housework)</p>		
<p><u>NUMBER OF PERSONS</u></p>		(2)
<p><u>HOURS WORKED DURING WEEK BY THESE PERSONS</u></p>		(3)
<p>If you do not hire farm workers, part or full-time, omit sections II and III. Please answer section IV-a,b, and c if you anticipate hiring in the future, and then complete the remaining sections.</p>		
<p>c. <u>OTHER PEOPLE - PART TIME</u> who did work FOR PAY on this farm or ranch (including family members receiving cash wages)</p>		
<p><u>NUMBER OF PERSONS</u></p>		
<p><u>HOURS WORKED DURING THE WEEK BY THESE PERSONS</u></p>		
<p><u>CIRCLE MONTHS EMPLOYED</u></p>		Jan Feb Mar Apr May Jun Jly Aug Sep Oct Nov Dec
<p>What is the total number of Part Time workers you employed in 1971?</p>		
<p><u>TOTAL NUMBER OF PART TIME WORKERS</u></p>		
<p>d. <u>OTHER PEOPLE - FULL-TIME</u> who did farm work for pay (not including family members)</p>		
<p><u>NUMBER OF PERSONS</u></p>		
<p><u>HOURS WORKED DURING WEEK BY THESE PERSONS</u></p>		
<p><u>CIRCLE MONTHS EMPLOYED</u></p>		Jan Feb Mar Apr May Jun July Aug Sep Oct Nov Dec

II. FARM WAGES - Report the average wages being paid to hired farm labor.

	ANSWER HERE
MONTH, WITH HOUSE (no meals)	\$ _____
MONTH, WITH BOARD AND ROOM	\$ _____
DAY, WITHOUT BOARD AND ROOM	\$ _____
HOUR, WITH HOUSE (no meals)	\$ _____
HOUR WITH BOARD AND ROOM	\$ _____
OTHER	\$ _____

Do you provide any of the following benefits?

	(circle)	
LIABILITY	yes	no
WORKMAN'S COMPENSATION	yes	no
SOCIAL SECURITY	yes	no
OTHER		

III. JOBS PERFORMED

a. PART TIME

What major jobs do your part time employees perform?

_____	e.g. driving a truck
_____	_____
_____	_____

b. FULL-TIME

What are the job titles for year round help, the level of education required and the average salary you pay?

YEAR ROUND	1. JOB TITLES	2. No. of Persons in This Job Title		3. Educational Level You Require Completed Before Job Entry	4. Average Salary \$/Month
		In 1971	Expected 1974		
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
	Seasonal				\$/Hour
1.					
2.					
3.					
4.					
5.					

IV. JOB PREDICTIONS

a. Please list those job titles in which you anticipate an increase or decrease in the number of people by 1975. Include any job titles that will be new to your business or those eliminated by 1975.

JOB TITLE	Increase or Decrease	Expected no. of Change	Reason for Change
Present			
New			
To be Eliminated			

b. Are there any year round jobs for which you are trying to hire a qualified person right now? If yes, please list below.

JOB TITLE	DUTIES	BEGINNING SALARY

c. Are there any job titles (year round or seasonal) which have been difficult to fill (or keep filled) in the last few years? If so, please list them and give the reason they have been problems.

JOB TITLE	REASON FOR PROBLEM

V. EDUCATION

a. Please check your highest level of educational attainment.

HIGH SCHOOL
COLLEGE
SPECIAL TRAINING

ANSWER HERE

Are there educational programs that you feel should be available for a farm operator? What type of educational program?

b. Has your present hired labor had any kind of specialized training? What type of training?

ANSWER HERE
(circle)
yes no

VI. RETIREMENT INFORMATION

a. What is your present age? _____

b. Do you have a retirement plan? _____

c. At what age do you plan to retire? _____

VII. GROSS FARM SALES

a. Please check the bracket that indicates your gross farm sales.

\$0 - 39,999
\$40,000 -
\$99,999
\$100,000
and over

VIII. COMMENTS

APPENDIX D

MONTANA AGRICULTURAL PRODUCERS INQUIRY

This form is being sent to you as a part of a study regarding agricultural manpower. The method, in most instances, of circling or x-ing the appropriate answer, makes it possible to fill out the blank almost as rapidly as you read it.

It is hoped that you feel the progress of Montana education and agriculture is of enough significance to justify your cooperation and that you can spare the time to read and complete the form. We have chosen this time of the year to accommodate you so that we do not impose ourselves upon you during your busy season.

A copy of the results of this study is available upon request.

I. FARM WORK - I hired the following non-family farm or ranch workers during the 1971 calendar year:		PART-TIME WORKERS - Those who worked on an hourly basis over the year (Circle)														
FULL TIME WORKERS - Those who worked full days but only certain months		No. of weeks employed														
Worker	Circle hrs. worked per week	Circle months employed	Worker	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg. hrs per w
1	40 45 50 55 60	Jan May Sep	1													35
2	40 45 50 55 60	Jan May Sep	2													35
3	40 45 50 55 70	Jan May Sep	3													35
4			4													
5			5													
6			6													
7			7													
FULL TIME Put additional on back worker hours		SEASONAL Put additional on back worker hours												PART-TIME Put additional on back worker hours		



Montana Agricultural Producers InquiryPage 2

11. FARM WAGES - I paid the following average wages to my hired help. (Include the value of home, room and board, etc.)

FULL TIME WAGES - for those who worked who worked daily year round.		SEASONAL WAGES - for those who worked full days but only certain months.		PART-TIME - for those who worked on an hourly basis over the year.	
Worker	avg: amt	Worker	avg: amt.	Worker	avg: amt.
1	Month with house, no meals \$ _____ Month w/ board and room \$ _____ Day w/o board and room \$ _____ Other (please specify) \$ _____	1	Month w/ house no meals \$ _____ Month w/ bd. and room \$ _____ Day w/o board and room \$ _____ Hour w/ house \$ _____ Hour w/ bd. & room \$ _____ Other (please specify) \$ _____	1	Day w/o bd. & room \$ _____ Hr w/house no meals \$ _____ Hour w/ bd. & room \$ _____ Other (please specify) \$ _____
2	Month with house, no meals \$ _____ Month w/ board and room \$ _____ Day w/o board and room \$ _____ Other (please specify) \$ _____	2	Month w/ house no meals \$ _____ Month w/ bd. and room \$ _____ Day w/o board and room \$ _____ Hour w/ house \$ _____ Hour w/ bd. & room \$ _____ Other (please specify) \$ _____	2	Day w/o bd. & room \$ _____ Hr w/house no meals \$ _____ Hour w/ bd. & room \$ _____ Other (please specify) \$ _____
3	"	3	"	3	"
4	"	4	"	4	"
5	"	5	"	5	"
6	"	6	"	6	"
(put additional on back)		(put additional on back)		(put additional on back)	



IV. EMPLOYMENT DIFFICULTIES

A. The following FULL-TIME jobs for qualified help are vacant right now:

JOB TITLE	REASON FOR VACANCY	BEGINNING SALARY - Include value of house, room and board, etc.
e.g. Gen. farm worker	no one qualified	\$400/mo. House (\$95)
_____	_____	_____
_____	_____	_____
_____	_____	_____

B. The job titles (full time, seasonal, or part time) that have been difficult to fill or keep filled in the last few years are: (Please state reason)

JOB TITLE	YEAR NEEDED	REASON FOR PROBLEM
e.g. Truck or Machinery Operator	8/1970	Not available for the salary paid
_____	_____	_____
_____	_____	_____

V. EDUCATION - Please indicate by X in the proper box

- A. My highest level of educational attainment is:
- Less than high school
 - High school
 - College
 - Special Training (vo-ag, adult ed., vo-tec)
- B. My present hired labor has had the following specialized training for agriculture:
- vo-ag in high school
 - post high school courses in agriculture
 - adult education
 - other

VI. RETIREMENT INFORMATION

- A. My present age is (X) 1 20-29 2 30-39 3 40-49 4 50-59 5 60-69 6 70- over
- B. I plan to retire in 1 5 yrs. 2 10 yrs. 3 20 yrs. 4 _____ yrs.

VII. GROSS FARM SALES

A. The bracket that best indicates my gross farm sales is (X):

- 1 \$0 - \$19,999
- 2 \$20,000 - \$30,999
- 3 \$40,000 - \$99,999
- 4 \$100,000 - over

VIII. My farm operation is largely -

- 1 Livestock
- 2 Small grain (other than hay)
- 3 Combination (Livestock and crops)

IX. COMMENTS

Thank you for your assistance in our study. Please indicate if you would like a notice of the report when it is completed. 1 Yes 2 No

Dr. Max L. Amberson
 Dr. Douglas D. Bishop
 Project Directors
 Agricultural Education Department
 Montana State University
 Bozeman, Montana

APPENDIX E

MONTANA AGRICULTURAL PRODUCERS INQUIRY

and is being sent to you as a part of the study regarding agricultural manpower. The method of answer, makes it possible to fill out the blank almost as rapidly as you read it.

in 1971? (Place a check on the line in front of the proper answer.)

the line in front of the proper answer.)
 combination _____
 livestock and hay) _____ (specify _____)

AND EDUCATIONAL REQUIREMENTS for full time (those who worked daily, year round) and for

regarding job titles, the anticipated changes and reason for changes in employee numbers, home, meals, etc.) the hours and months employed and the level of education required.

51 A

NAME PER MONTH	MEALS		HOURS AND MONTHS												EDUCATIONAL LEVEL REQUIRED COMPLETED					
	Fm	Bd	Circle Hours Per Week												Don't Care	High School	8th Grade	Vo-tech Center	Adult Ed.	
			40	45	50	55	60													
			40	45	50	55	60													
			40	45	50	55	60													
			40	45	50	55	60													
			40	45	50	55	60													
*****	*****	*****	*****Circle months per year																	
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec						
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec						
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec						
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec						
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec						
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec						

employees worked..... 5 10 12 14 16 18 20 22 24 26 _____

qualified help are vacant now.

BEGINNING SALARY (Include value of house, room and board, etc.)

have been difficult to fill or keep filled in the last few years are:

REASON FOR PROBLEM

workers. (Place an on the line in front of the proper answer)

 Social Security Other (Please specify)

sales is: (Place a check on the line in front of the proper answer.)

 \$20,000-\$39,999 \$40,000-\$69,999 \$70,000-\$99,999 \$220,000-\$499,999 \$500,000 & over

(Place a check on the line in front of the proper answer or answers)

 2 yr. vocational school 4 yr. college Special training (adult ed., Vo-ag.)

 Other Please specify.

40-49 50-59 60-69 70-79

 20 yrs. Please fill in

copy of the results of this study will be available upon request. We trust that the results of this

Director
Dr. Joe Asleson, Dean
College of Agriculture
Montana State University

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APPENDIX F

MONTANA AGRICULTURAL PRODUCERS' INQUIRY

and is being sent to you as a part of the study regarding agricultural manpower. The method in most answer makes it possible to fill out the blank almost as rapidly as you read it. A white example form.

ers in 1971? (Place a check () on the line in front of the proper answer)

() on the line in front of the proper answer)

Combination

(Livestock and crops)

Other

(Specify

REQUIREMENTS FOR SEASONAL (those who worked only certain hours, days or months) and EDUCATIONAL REQUIREMENTS FOR SEASONAL (those who worked only certain hours, days or months) employees.

changes and reason for changes in employee numbers, the average monthly salary (include the value of monthly salary rounded) and the highest educational level completed.

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INCOME PER MONTH		MONTHS AND HOURS WORKED		HIGHEST EDUCATIONAL LEVEL COMPLETED					
Use	Meals	Rm&Bd	Circle months per year	Circle avg. hrs. per wk.	Don't Care	8th Grade	High School	Vo-tech or Commu. College	College Degree
			J F M A M J J A S O N D	0-13 14-26 27-39					
			J F M A M J J A S O N D	0-13 14-26 27-39					
			J F M A M J J A S O N D	0-13 14-26 27-39					
			J F M A M J J A S O N D	0-13 14-26 27-39					
			J F M A M J J A S O N D	0-13 14-26 27-39					
			J F M A M J J A S O N D	0-13 14-26 27-39					
				Circle avg. hrs. per wk.					
				40 45 50 55 60 65					
				40 45 50 55 60 65					
				40 45 50 55 60 65					
				40 45 50 55 60 65					
				40 45 50 55 60 65					

fferent full-time employees hired in 1971: _____ Total different seasonal employees
_____ Total different full-time employees

are vacant now:

BEGINNING SALARY (Include the value of house, room and board, etc.)

have been difficult to fill or keep filled in the past few years are:

REASON FOR PROBLEM

(Place a check () on the line in front of the proper answer)

sation _____ Social Security _____ Other _____ (Please Specify)

check () on the line in front of the proper answer)

_____ \$20,000-\$39,999 _____ \$40,000-\$69,999 _____ \$70,000-\$99,999 _____ \$100,000-\$499,999

ent: (Place a check () on the line in front of the proper answer or answers)

2 yr. vocational school. 4 yr. college Special training (Adult ed., vo-ag. etc)

40-49 50-59 60-69 70-79

10 years 20 years years (Please specify)

of the results can be obtained from the Agricultural Education Department of Montana
that the results of this study and the implementation of new agricultural education

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Dr. Joe Asleson, Dean
College of Agriculture
Montana State University
Bozeman, Montana 59715

8. The operator's highest level of educational attainment: (Place a check () on the line in front of the proper answer or answer
___ Less than high school ___ High School ___ 2 yr. vocational school ___ 4 yr. college ___ Special training (Adult e
9. Operator's present age: ___ 20-29 . ___ 30-39 ___ 40-49 ___ 50-59 ___ 60-69 ___ 70-79
10. Operator's plans retirement in: ___ 5 years ___ 10 years ___ 20 years ___ years (Please specify)

Thank you for your assistance in the study. A copy of the results can be obtained from the Agricultural Education Department of State University, Bozeman, Montana 59715. We trust that the results of this study and the implementation of new agricultural education programs will improve the quality of your manpower.

Dr. Joe Asleson, Dean
College of Agriculture
Montana State University
Bozeman, Montana 59715

11. COMMENTS



APPENDIX G

ANA AGRICULTURAL PRODUCERS' INQUIRY

and is being sent to you as a part of the study regarding agricultural manpower. The method, in most cases it is possible to fill out the blank almost as rapidly as you read it.

livestock small grain (other than hay) combination livestock and crops) other

<input type="checkbox"/> less than 12 years	<input type="checkbox"/> high school diploma	<input type="checkbox"/> 2-year vocational school	<input type="checkbox"/> college degree
<input type="checkbox"/> less than 20	<input type="checkbox"/> 20-29	<input type="checkbox"/> 30-39	<input type="checkbox"/> 40-49
<input type="checkbox"/> 50-59	<input type="checkbox"/> 60-69	<input type="checkbox"/> 70-79	<input type="checkbox"/> more than 80
<input type="checkbox"/> 5 years	<input type="checkbox"/> 10 years	<input type="checkbox"/> 20 years	<input type="checkbox"/> other
<input type="checkbox"/> less than \$10,000	<input type="checkbox"/> \$10,000-\$19,999	<input type="checkbox"/> \$20,000-\$39,999	<input type="checkbox"/> \$40,000-\$69,999
<input type="checkbox"/> \$70,000-\$99,999	<input type="checkbox"/> \$100,000-\$149,999	<input type="checkbox"/> \$150,000-\$199,999	<input type="checkbox"/> \$200,000-\$499,999
<input type="checkbox"/> more than \$500,000			(specify)
<input type="checkbox"/> de liability insurance	<input type="checkbox"/> workman's compensation		
<input type="checkbox"/> social security	<input type="checkbox"/> other		

_____ (seasonal workers - those who worked days but only certain months)

_____ (full-time workers - those who worked steadily, year round)

MONTANA AGRICULTURAL PRODUCERS' INQUIRY

This is the inquiry form mentioned in my letter and is being sent to you as a part of the study regarding agricultural manpower. I cases of checking X the appropriate answer makes it possible to fill out the blank almost as rapidly as you read it.

1. My farm operation is largely (check one): livestock small grain (other than hay) combination livestock and crop operation: _____

2. My highest level of education is: less than 12 years high school diploma 2-year vocational school

3. My age is (check one): less than 20 20-29 30-39 50-59 60-69 70-79

4. I plan to retire in: _____ 5 years 10 years 20 years

5. My gross farm sales in 1971 were: less than \$10,000 \$10,000-\$19,999 \$20,000-\$39,999 \$70,000-\$99,999 \$100,000-\$149,999 \$150,000-\$199,999 more than \$500,000

6. Which of the following benefits do you provide liability insurance workman's compensation provide for your employees? social security other _____

7. Total number of seasonal employees you hired in 1971 (other than family labor): _____ (seasonal workers - those who worked days but only certain months)

8. Total number of full-time employees you hired in 1971 (other than family labor): _____ (full-time workers - those who worked steadily, year round)

APPENDIX H

MONTANA AGRICULTURAL PRODUCERS' INQUIRY

This is the inquiry mentioned in my letter and is being sent to you as a part of the study regarding agricultural manpower. The method, in the appropriate answer makes it possible to fill out the blank almost as rapidly as you read it.

1. My farm operation is largely (check one): If you checked "other" give the type of operation: _____	<input type="checkbox"/> 1 livestock	<input type="checkbox"/> 2 small grain (other than hay)	<input type="checkbox"/> 3 combination (livestock and crops)
2. My highest level of education is:	<input type="checkbox"/> 1 less than 12 years	<input type="checkbox"/> 2 high school diploma	<input type="checkbox"/> 3 2-year vocational school
3. My age is (check one):	<input type="checkbox"/> 1 less than 20 <input type="checkbox"/> 5 50-59	<input type="checkbox"/> 2 20-29 <input type="checkbox"/> 6 60-69	<input type="checkbox"/> 3 30-39 <input type="checkbox"/> 7 70-79
4. I plan to retire in: _____	<input type="checkbox"/> 1 5 years	<input type="checkbox"/> 2 10 years	<input type="checkbox"/> 3 20 years
5. My <u>gross</u> farm sales in 1971 were:	<input type="checkbox"/> 1 less than \$10,000 <input type="checkbox"/> 5 \$70,000 - \$99,999 <input type="checkbox"/> 9 more than \$500,000	<input type="checkbox"/> 2 \$10,000 - \$19,999 <input type="checkbox"/> 6 \$100,000 - \$149,999	<input type="checkbox"/> 3 \$20,000 - \$39,999 <input type="checkbox"/> 7 \$150,000 - \$199,999
6. Which of the following benefits do you provide for your employees?	<input type="checkbox"/> 1 liability insurance <input type="checkbox"/> 3 social security	<input type="checkbox"/> 2 workman's compensation <input type="checkbox"/> 4 other _____	

7. Total number of seasonal employees you hired in 1971 (other than family labor): seasonal workers - those who worked days but only certain

8. Total number of full-time employees you hired in 1971 (other than family labor): full-time workers - those who worked steadily, year round

Complete the following: _____ in the past few years complete the following:

Beginning salary (include room and board, etc., if provided)	Job title of the position	Year	Reason for the vacancy
When difficult to fill or to following:	14. Comments		
the difficulty			

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Copy will be used to develop new agricultural education programs. A copy of the results can be obtained by

Dr. Joe Asleson, Dean
College of Agriculture
Montana State University
Bozeman, Montana 59715

11. If you have current **full-time** job openings, complete the following: _____ in the past few years complete the following:

Job title for which an opening exists	Reason this opening exists	Beginning salary (include room and board, etc., if provided)	Job title of the position	Year	Reason:

13. If you have **seasonal** positions which have been difficult to fill or to keep filled in the past few years complete the following:

Job title of the position	Year	Reason for the difficulty	14. Comments

Thank you for your assistance. The results of this study will be used to develop new agricultural education programs. A copy of the results will be written to me at the address below.

Dr. Joe Asleson, Dean
 College of Agriculture
 Montana State University
 Bozeman, Montana 59715

APPENDIX I

March 14, 1972

To: Dean Joe Asleson
College of Agriculture

From: Dr. Max L. Amberson, Head
Agricultural Education Department

RE: Letter to sample population regarding Agricultural
Manpower Project

In reviewing some of the research regarding questionnaire returns, we found the suggestion that a letter from a prestigious person greatly facilitated the percent of returns. We have therefore, composed the attached letter for your perusal. We would greatly appreciate your comments and suggestions and would like to receive your permission to send such a letter to 4,000 agricultural producers selected for our study.

I have also attached a brochure describing our study that we have just had returned from the first printing.

Thank you very much.

MLA:bsa
Enc.

Montana State University

College of Agriculture

Agricultural Experiment Station
Bozeman, Montana 59715

Tel. 406-587-3121

Directors Office

As an agricultural producer, you probably have come to realize that no other means of livelihood requires more varied knowledge and skills. Because of the complexity of today's agricultural operations, adequately trained labor has become an indispensable part of successful agricultural concerns. These facts and the realization that agriculture is Montana's number one industry have encouraged the Agricultural Experiment Station through the Department of Agricultural Education of Montana State University to undertake a study entitled, Agricultural Manpower Project, A Study of the Occupational Opportunities and Educational Needs in Montana's Agricultural Industry.

The purpose of this study is to evaluate the present and projected manpower needs in agricultural production and agri-business, in order to design educational programs which will improve the quality of your manpower. The results of the study will, we hope, benefit all sectors of agriculture. As Dean of the College of Agriculture, I have had the opportunity to observe the urgency of making needed changes in the agricultural offerings at all levels to fit the changing world of today's agriculture.

In a few weeks you will be receiving an inquiry form which is being sent to 4,000 Montana farmers and ranchers. Your cooperation in completing this form and returning it to the Agricultural Education Department of Montana State University is a vital part of our project. We shall greatly appreciate your help and welcome the opportunity to provide you with a copy of the results of this study if you are interested.

I hope you feel that the progress of Montana agriculture and education is of enough significance to justify this effort and your participation in it.

Sincerely,

Dr. Joe Asleson, Dean
College of Agriculture
Montana State University

JA/eb

Montana State University

College of Agriculture

Agricultural Experiment Station
Bozeman, Montana 59715

Tel. 406-587-3121

Directors Office

You are a key source of information in the Montana Manpower Study that I described to you in my recent letter. Have a cup of coffee on us while completing the enclosed inquiry.

As you will recall, the purpose of the study is to gather information which will enable us to design educational programs to insure an adequate supply of trained manpower in agriculture. Keep in mind the data from this study will help us train people to fill your employment needs in the future.

May we assure you the information contained in the questionnaire will be kept in strictest confidence and will not be given to any other source. Please complete the inquiry and return it to us in the enclosed self-addressed postage-free envelope.

Thank you for your interest and willingness to participate in this effort. We are looking forward to your reply.

Sincerely,

Dr. Joe Asleson, Dean
College of Agriculture
Montana State University

JA/eb
Encs.



**97% CAFFEIN FREE
INSTANT COFFEE**

NET WEIGHT 2 GRAMS

Study to Determine Occupational And Educational Needs in State

The Montana Agricultural Experiment Station, through the Agricultural Education Department of Montana State University, has launched a study to determine occupational opportunities and educational needs among Montana's agricultural producers and businesses.

The project is funded by the experiment station and the Montana Office of Public Instructions, said Dr. Max Amberson, head of Agricultural Education at MSU and one of the projects' directors.

The study, designed to run for five years, has several objectives.

First, the study group hopes to identify the number and types of occupational opportunities within the agricultural industry.

The next step will be to identify knowledge, skills and attitudes needed by agricultural workers.

After gathering this information, project workers will suggest models for educational programs aimed at developing competencies in present and potential agricultural employes.

This will include information for agricultural educators to utilize in curricula development.

"We will coordinate agricultural programs at all levels and provide a data base for monitoring and forecasting future employment needs in agriculture," Amberson emphasized.

During the month of June, he noted, a selected sample of 4,000 farmers and ranchers will be asked to give information regarding the types of jobs they have to offer, educational requirements necessary to fill these jobs and pertinent facts about their operations.

A comprehensive analysis of current and projected manpower needs in agriculture has never been done and is urgently needed, said Amberson.

We specifically want to help in the training of rural youths and adults in Montana, he said.

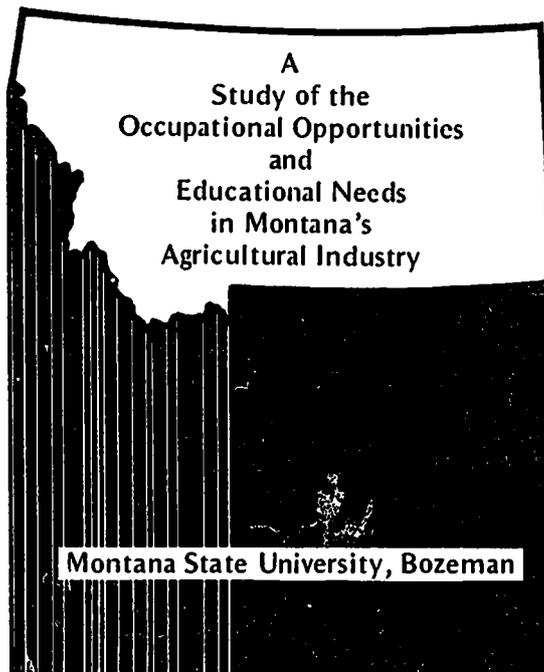
Other directors of the project are Dr. Douglas Bishop, assec. Professor of Agricultural Education and Phillip Ward, Director of Research, Office of Public Instruction.

Additional information regarding the study can be obtained by contacting the Agricultural Education Dept., Montana State University, Bozeman, Mont, 59715.

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Agricultural Manpower Project

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A
Study of the
Occupational Opportunities
and
Educational Needs
in Montana's
Agricultural Industry

Montana State University, Bozeman

Agricultural Manpower Project

The purpose of this study is to identify the occupational opportunities and educational needs among Montana's agricultural producers and businesses and to design appropriate agricultural education to provide an adequate manpower force for production agriculture and the related areas such as agricultural mechanics, agricultural supplies and services, ornamental horticulture, forestry and natural resources.

Objectives

To identify the number and types of occupational opportunities in the agricultural industry.

To identify the knowledge, skills and attitudes needed by agricultural employees.

To suggest models for educational programs that would develop competencies in present and potential agricultural employees.

To provide information for agricultural educators to utilize in curriculum development.

To coordinate agricultural education programs at all levels.

To provide data base for monitoring and for forecasting future employment needs in agriculture.

Agriculture is Montana's Number One Industry

Montana's farmers and ranchers received \$6.13 million in 1970 from the sale of agricultural products. Production agriculture is and will continue to be Montana's number one income producing industry. Because agriculture is big and complex, it offers many opportunities for employment in a variety of jobs.

Since there has never been a comprehensive analysis of current and projected manpower needs, this study has grown out of a concern for the broad field of agriculture and more specifically for the training of rural youths and adults in Montana.

The Agricultural Education Department of Montana State University has undertaken this project in keeping with the Department's stated goals of providing studies which will help identify, clarify and ultimately improve the quality and availability of education and agricultural employment to the people of Montana.

Phase I—Funded Cooperatively By:

Superintendent of Public Instruction
Dolores Colburg
and
Montana Agricultural Experiment Station
Montana State University, Bozeman

Project Phases

- | | |
|---------|--|
| 1971-72 | Phase I
Agri-Business Survey
Agri-Producers Survey
To determine current and projected manpower needs. |
| 1972-73 | Phase II
Agri-Business Survey
Agri-Producers Survey
To determine knowledge, skills and attitudes needed by employees. |
| 1973-74 | Phase III
Institute Educational Programs
To design curriculums and institute agricultural education programs to meet manpower demands for agriculture. |
| 1974-75 | Phase IV
Adjust Educational Programs
To improve agricultural education programs based on revised manpower and training requirements. |
| 1975-76 | Phase V
Evaluation
To evaluate and adjust educational programs resulting from changes in manpower requirements. |

Surely the effective utilization of a person's potential has benefits that radiate to all sectors . . . his personal life and welfare, industry, the community, the state and the nation. If from the course of this study there evolves an educational program that provides appropriate educational opportunities for rural youth and adults, the ramifications are many.

Project Goals

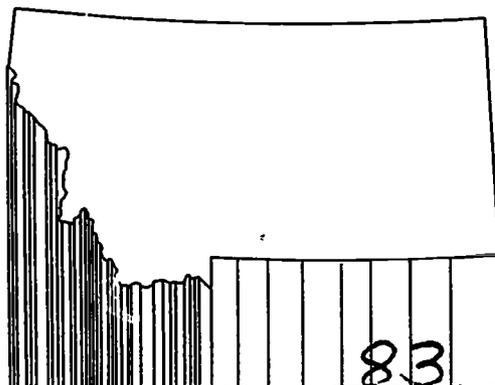
To Serve the Agricultural Industry
By improving the supply of well trained employees for current and emerging occupations.

To Serve Students
By providing valid information concerning career opportunities and educational requirements in the agricultural industry.

To Serve Agricultural Employees
By providing guidelines to establish programs of in-service training to meet their unique needs.

To Serve Agricultural Educators
By providing data measuring the knowledge, skills and attitudes needed by the work force in tomorrow's agriculture.

To Serve Montana's Economy
By increasing the efficiency of matching manpower supply with manpower demand in the agricultural industry.



Project Directors

Dr. Max L. Amberson
Head, Department of Agricultural Education
Montana State University

Dr. Douglas D. Bishop
Assistant Professor, Agricultural Education
Montana State University

Mr. Phillip Ward
Director of Research, Planning, Development
and Evaluation
Office of the Superintendent of Public Instruction

Agricultural Manpower Study
Department of Agricultural Education
313 Linfield Hall
Montana State University
Bozeman, Montana 59715
(406) 587-3121, ext. 314

If interested in a copy of the results of this research effort, please indicate the particular phase and return this form to the above address.

Phase I
 Phase II Phase IV
 Phase III Phase V

Name _____

Address _____

City, State _____ ZIP _____

Department of Agricultural Education
College of Agriculture

The Agricultural Manpower Study questionnaire which we recently telephoned you about is enclosed for your reply. A return envelope is enclosed for your convenience.

We would greatly appreciate your completing the form and returning it to us at your earliest convenience. The information that you are providing is important to the success of our study and of course a well trained manpower source for agricultural production and agri-business.

We are aware that this is an extremely busy time for you and regret that we could not have contacted you at a more opportune time.

We thank you in advance for your reply.

Sincerely,

Dr. Joe Asleson, Dean
College of Agriculture
Montana State University
Bozeman, Montana 59715

JA/bsa

#

FORMAT FOR CODING DATA ON CARD ONE

Col 1-9 code number for response and card number (e.g.: 1)

Question 1 - Col 11 code for farm operation (1-4)

Question 2 - Col 12 code for level of education (1-5) 5 added for other

Question 3 - Col 13 code for age (1-8)

Question 4 - Col 14 code for retirement time (1-4)

Question 5 - Col 15 code for gross farm sales (1-9)

Question 6 - Col 16-19 code for employee benefits (1-4)

Question 7 - Col 20-21 number of seasonal employees in 1971

Question 8 - Col 22-23 number of full-time employees in 1971

Question 9 - Col 24-25 number of seasonal jobs listed

Question 10 - Col 26-27 number of full-time jobs listed

Question 11 - Col 28 number of full-time job openings

Question 12 - Col 29 number of full-time jobs difficult to fill

Question 13 - Col 30 number of seasonal jobs difficult to fill

Col 31 place a 1 here if there are employees listed,
requiring additional cards. If there are no
employees listed, code a zero.

FORMAT FOR CODING DATA ON CARD TWO
Seasonal Jobs

- Question 9
- Col 1-9 code number for response and card number 2
 - Col 11-12 job code
 - Col 16-17 number of employees in this title in 1971
 - Col 18-19 number of employees expected in 1974
 - Col 20-21 code for reason of change. Place 0 if no response
 - Col 22-33 months that employees in that position worked in 1971. Place a 1 in the column corresponding with the month. If the job were only filled in January and December, columns 22 and 33 would contain a 1, the rest would be 0.
 - Col 34-37 salary in wages. (compute on 4.3 weeks per month and the median hours in the span)
 - Col 38-40 value of house or room, if provided (zeros if not provided)
 - Col 41-43 value of meals if provided (Zeros if not provided)
 - Col 44 educational requirements for job (1-6)
(no requirement-1, 8th grade-2, high school grad.-3, 2 yr. vo-tech-4, col. degree-5, other-6)
 - Col 45 average hours per week for the job (1-8 as coded)
1-13 hrs.-1, 14-26 hrs.-2, 27-39 hrs.-3, 40-44 hrs.-4, 45-49 hrs.-5, 50-54 hrs.-6, 55-59 hrs.-7, 60 or more hrs.-8
 - Col 46-47 job code for next job
 - Col 51-52 number of employees in this title in 1971
 - Col 53-54 number of employees in this title in 1974
 - Col 55-56 reason for change code
 - Col 57-68 months of the year (see description for cols. 22-23)
 - Col 69-72 salary in wages (see Col 34-37)
 - Col 73-75 value of house or room (zeros if not provided)
 - Col 76-78 value of meals
 - Col 79 educational requirements for the job (1-6 as coded)
 - Col 80 average hours per week for the job (1-8 as coded)

FORMAT FOR CODING DATA ON CARD THREE

Full-time Jobs

Question 10: Col 1-9 code number for response and card no. (e.g.3)
 Col 11-12 job code
 Col 16-17 number of employees in this title in 1971
 Col 18-19 number of employees in this title in 1974
 Col 20-21 reason code
 Col 22-25 wages (compute hourly wage to months by 4.3 wks.)
 Col 26-28 housing or room value (zeros if not provided)
 Col 29-31 value of meals if provided by employer (zeros if not provided)
 Col 32 educational code (1-6), no requirement-1, 8th grade-2, high school grad-3, 2 yr. vo-tech-4, college degree-5, other-6
 Col 33-34 job code
 Col 38-39 number of employees in this title in 1971
 Col 40-41 number of employees in this title in 1974
 Col 42-43 reason code
 Col 44-47 wages (compute hourly wage to months by 4.3 wks.)
 Col 48-50 value of house or room (zeros if not provided)
 Col 51-53 value of meals (zeros if not provided)
 Col 54 educational requirement code (1-6) see Col 31
 Col 55-56 job code
 Col 60-61 number of employees in this title in 1971
 Col 62-63 number of employees in this title in 1974
 Col 64-65 reason code
 Col 66-69 wages (see directions on Col 22-24)
 Col 70-72 housing (zeros if not provided)
 Col 73-75 meals (zeros if not provided)
 Col 76 educational requirement code (1-6) See Col 31

FORMAT FOR CODING DATA ON CARD FOUR

Question 11: Col 1-9 code number for response and card number(e.g.4)
Col 11-12 job code
Col 16-17 reason code
Col 18-21 salary/month
Col 22-23 job code
Col 27-28 reason code
Col 29-32 salary
Col 33-34 job code
Col 38-39 reason code
Col 40-43 salary
Col 44-45 job code
Col 49-50 reason code
Col 51-54 salary
Col 55-56 job code
Col 60-61 reason code
Col 62-65 salary
Col 66-67 job code
Col 71-72 reason code
Col 73-76 salary

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FORMAT FOR CODING DATA ON CARDS FIVE AND SIX
Card five- full-time difficulties
Card six-seasonal difficulties

Question 12:	Col 1-9	code number for response and card number (e.g.5)
	Col 11-12	job code
	Col 16-17	year, if only 1 year
	Col 18-19	reason code
	Col 21-23	job code
	Col 26-27	year
	Col 28-29	reason code
	Col 31-32	job code
	Col 36-37	year
	Col 38-39	reason code
	Col 41-42	job code
	Col 46-47	year
	Col 48-49	reason code
	Col 51-52	job code
	Col 56-57	year
	Col 58-59	reason code
	Col 61-62	job code
	Col 66-67	year
	Col 68-69	reason code
	Col 77-80	year if more than 1 year.
Question 13:	Card Six	same format as above

JOB TITLES

10 GENERAL FARM WORKER (unspecified)

11 Combination livestock and crops

12 Livestock (general)

13 Sheep

14 Beef

15 Poultry

16 Dairy

17 Hogs

18 Apiarist ass't.

19 Painter or maintenance

21 FIELD CROPS (general)

22 Hay

23 Grain

24 Sugar Beets

25 Vegetables

26 Fruit trees

27 Potatoes

30 FARM MACHINERY OPERATOR

31 Agricultural mechanic

32 Irrigator

JOB TITLES (con't)

40 FARM AND RANCH FOREMAN

41 Livestock

42 Crops

43 Unspecified

44 Combination livestock and crops

50 ARTIFICIAL INSEMINATOR

51 Herdsman

52 Milker

53 Sheep herder

54 Apiarist

55 Cowboy

60 TRUCK DRIVER

70 FARM AND RANCH COOK

71 Farm and ranch general household assistant

80 FORESTRY

90 Horticulture, greenhouse, etc.

f

REASONS FOR JOB VACANCIES OR DIFFICULTY IN
FILLING JOB VACANCIES

- 01 Expansion of operations
- 02 Normal turnover
- 03 Retirement
- 04 Loss of family labor
- 05 Employees not trained for specific jobs
- 06 Cannot compete with alternatives
- 07 Unsatisfactory employee performance
- 08 Salary scale
- 09 Current labor laws
- 10 Geographic isolation
- 11 Low status of job
- 12 Employees unwilling to work within job conditions
- 13 Housing inadequate
- 14 Fringe benefits not adequate - insurance, hospitalization etc.
- 15 Employees not available at the time needed
- 16 Addition of family labor
- 17 Reduction of operation
- 18 Selling out/sold out
- 19 Mechanization

END