5-1967

A Study of the Off-Farm Agriculture Occupations of Millard, Beaver, Iron, and Washington Counties in Utah, to Determine Educational Needs

Thales C. Brown
Utah State University

A STUDY OF THE OFF-FARM AGRICULTURE OCCUPATIONS OF MILLARD, BEAVER, IRON, AND WASHINGTON COUNTIES IN UTAH, TO DETERMINE EDUCATIONAL NEEDS

by

Thales C. Brown

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Agricultural Education

UTAH STATE UNIVERSITY
Logan, Utah

1967

ACKNOWLEDGMENTS

The author wishes to express his sincere appreciation to Professor Stanley S. Richardson under whose direction this study was undertaken and completed. Appreciation is also extended to Dr. Eldon M. Drake, and Professor Von Jarrett, members of the graduate committee.

I am grateful to many individuals who have given me much helpful advice, assistance, and encouragement while completing this study. I wish to express my appreciation to those who participated, including businessmen, firms, companies, and organizations, in the four counties surveyed.

I wish to express my thanks to my wife, Edna, and family for their support and sacrifices in completing this thesis.

Thales C. Brown

TABLE OF CONTENTS

LIST OF TABLES

LIST OF TABLES (Continued)

LIST OF FIGURES

Figures Page

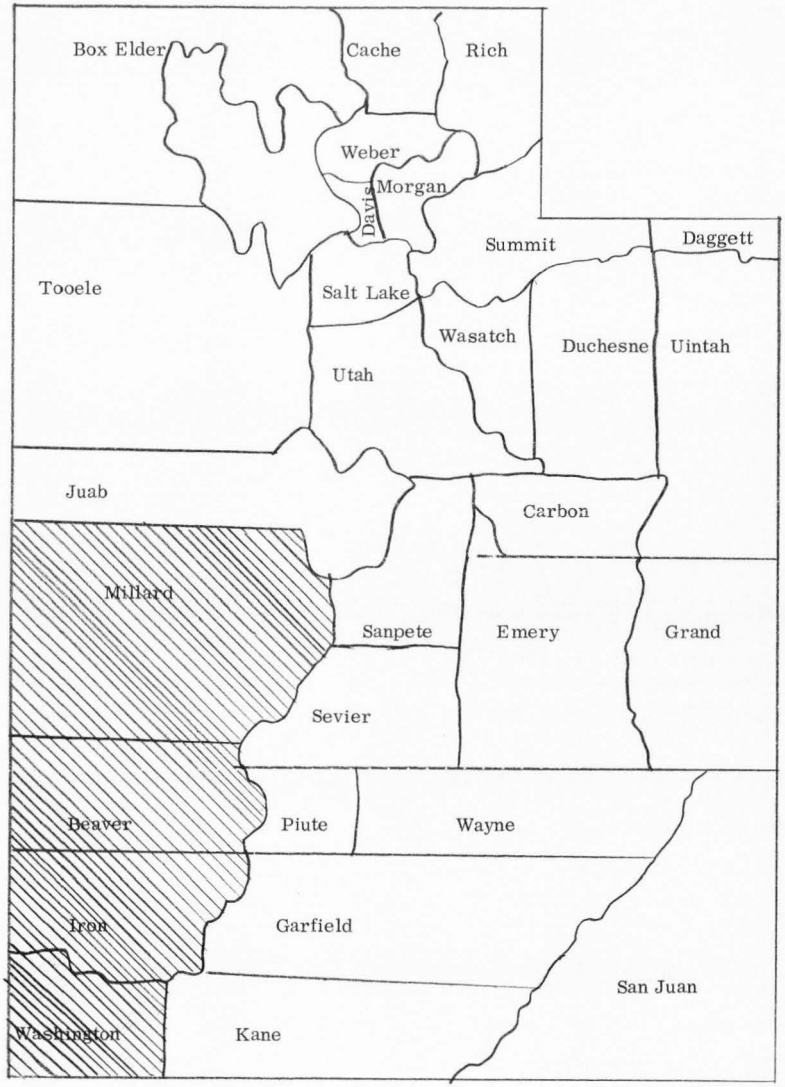

Figure 1. Shaded area on map indicates the counties included in this survey.

ABSTRACT

A Study of the Off-Farm Agriculture Occupations in Millard,

Beaver, Iron, and Washington Counties in Utah,

to Determine Educational Needs

by

Thales C. Brown, Master of Science

Utah State University, 1967

Major Professor: Dr. Stanley S. Richardson
Department: Agricultural Education

The objectives of this study were to gather information concerning the off-farm agricultural occupations of Millard, Beaver, Iron and Washington Couties.

A list was made of present and anticipated number of employees in these occupations with the numbers involved in full-time, part-time, and female work.

Occupations with similar backgrounds were clustered into four main areas. These were further classified into individual jobs.

Comments were made concerning the competencies needed for entry and satisfactory performance in these occupations.

Some of the characteristics of these occupations as to salary, required experience, labor laws and education requirements were reported.

An attempt was made to identify all present and emerging off-farm agricultural occupations for which vocational agricultural education should be available.

It was noted that each county in the area surveyed had many similar occupations and each had its own distinct problem differences.

Correlating the survey study, the author concluded personal contact was a good technique to secure needed information. Also, telephoning the businesses proved to be a successful and time conserving method of securing desired information. Obtaining data through correspondence, an interesting observation was noted. Business of off-farm agricultural occupations located where higher educational institutions are established a quick response was noted as compared to other areas, in which virtually, no reply came by correspondence, until contacted personally.

Employers perferred employees with rural background but it was not essential for employment. They considered it valuable to be able to have a speaking knowledge of the business served.

The author traveled over 1100 miles in making this survey.

(82 pages)

INTRODUCTION

Statement of Problem

The well being of the nation, a nation of approximately 180 million people, is dependent upon agriculture the basic and most essential industry. Tremendous changes have taken place in the agricultural industry in recent years. A broad complex of businesses and services has evolved to facilitate the work of production of agricultural commodities. Agricultural educators and administrators are becoming increasingly aware that agriculture and farming are no longer synonymous in terminology, that agriculture is much more than farming.

During the past several years the thinking of many of the school administrators, the public and press have questioned the need for vocational agricultural classes to be continued in the high schools. With the downward trend in the percentage of people actually engaged in the production of agricultural products, and the increase of the number of people engaged in the off-farm agricultural jobs, vocational agriculture in schools is at the crossroads for a needed change in the curriculum. The original purpose ". . . to establish young men in farming" is now obselete. There are great changes of population concentration taking place in this modern society. Developments in technology and automation have caused tremendous increase in the number of people needed to service the production phase of agriculture.

These technology improvements and educational innovations make it imperative that agricultural education move ahead in these challenging times.

It's true, the need to help prepare the youth who want to be established in farming is imperative. Also, there is a need for the preparing of those interested in the new area of off-farm agricultural occupations.

Delimitation

This study is limited to off-farm agriculture occupations of Millard, Beaver, Iron and Washington counties in the southwestern part of Utah.

Purpose of Study

The purpose of this study is to obtain information concerning off-farm agricultural occupations in Millard, Beaver, Iron, and Washington counties of Utah:

1. To identify present and emerging agricultural occupations other than farming and ranching, for which vocational and technical agricultural education should be available.
2. To determine present and anticipated number of employees in these occupations.
3. To estimate the annual entry opportunities in each by occupational classification.
4. To determine competencies needed for entry and satisfactory performance in these occupations.

5. To determine other characteristics of these occupations such as minimum age for entry, required experience, formal education.
6. To cluster occupations with similar educational backgrounds.
7. To propose suggestions as to areas of instruction that could be used in an educational program to better prepare students for the off-farm occupations in the different counties.

Need of Study

Taylor (1963, p. 16) made this comment concerning vocational agriculture today: "Both the agricultural industry and the educational profession are in a healthy state of ferment. Recent technological improvements and educational innovations make it imperative that agricultural education move ahead . . . "

Agriculture has changed and is continuing to change rapidly. Vocational agriculture must change to keep up with the every changing need. With the increased demands for skills in the many off-farm agricultural occupations, agri-business is looking to the vocational agricultural department for competent workers. These occupations comprise a great many jobs that require a multiplicity of occupational competencies. Perhaps in many cases, a knowledge or awareness of agriculture is important in order for the worker to competently hold the job; however, it may not be essential that he have specific agricultural competencies in terms of skills, abilities and knowledge relative to technical agriculture.

The agriculture services and business job aspects in the agricultural industry have evolved fairly recently. This points up a distinct need to be able to identify those jobs where knowledge and skills in agriculture are essential for the person to successfully hold the position.

If vocational agriculture is going to serve better the needs of its students and community then a survey of the needs of the community should be taken, and this information related back to the program. Studying surveys taken in other parts of the state prompted the survey study of Millard, Beaver, Iron and Washington counties.

Definition of Terms Used

"Agricultural occupations" occupations in which competencies are needed in the production of plants or animals, or in which competencies are needed in agricultural areas other than production.

"Agri-business and agri-industries" are those businesses and industries that exist primarily for the purpose of providing services and supplies, either directly or indirectly, to those producing plants and animals. Many businesses and industries provide supplies and service to producers of plants and animals, but they also exist for the purpose of serving many other consumers. Whenever the channel process of function ceases to provide services to the producer, then it is no longer classified as an off-farm agricultural occupational, agri-business or agri-industry.

"Agriculture technology" is the application of scientific knowledge, method, or research to agriculture as well as to non-farming agricultural

occupations. Agriculture is here used in the broad sense to include farming and non-farming agricultural occupations.

"Off-farm agricultural occupations" are those that provide supplies, or services, to the individual in the production of plants and animals and may include handling and processing. The plants and animals include those used for feed, food, fiber, shelter, and pleasure.

"Service agriculture" is concerned with providing services or products or products for farmers, or one which is concerned with the processing, transportation, storage or distribution of farm products wherein the major portion of products handled or service rendered is of an agricultural nature.

"Vocational Education Act of 1963" is a public law enacted December 18, 1963 to strengthen and improve the quality of vocational education and to expand the vocational education opportunities in the nation. This act eliminates the "farm practice requirement" and broadens the definition of vocational agriculture in the Smith-Hughes and George-Barden Acts so as to permit Federal funds to be expended in agricultural training programs for off-farm occupations in which a knowledge and skill of agricultural subjects is involved.

REVIEW OF LITERATURE

Introduction

A review of literature in this field of agriculture dealing with the off-farm occupations other than the direct production of the food and fiber is stimulating and challenging. It is designed to take a look at the past, the present, and perhaps the future concerning what might be expected in the future of vocational agriculture.

History of Vocational Agriculture in the United States

Mays (1948, p. 119) states agriculture is not only one of the oldest vocations, but one of the most significant in the development of civilized life. Like all the basic occupations, industry, homemaking, mining, barter, etc., agriculture is at once a cause and an effect of social progress.

The first society for the promotion of agriculture in the United States was organized at Philadelphia on March 1, 1785, and on the 4th of July following that date George Washington and Benjamin Franklin were elected members. In January 1794 a committee appointed by the Philadelphia Society for the Promotion of Agriculture met to prepare a plan for the establishing of the State Society for the promotion of agriculture in connection with the education of youth in the knowledge of that most important art. One suggestion the committee made was to use the common school system of the state to educate the farmer in his business. The legislature may enjoin these schoolmasters

the combination of the subject of agriculture with other parts of education. This is, as far as known, the first formal effort made in the United States to present the claims of agriculture education to a legislature and to incorporate instruction in agriculture in the common schools.

The demand for scientific and technical education did not cease as the years passed by, but grew louder and louder with the development of the country. The friends of the movement secured the interest and cooperation of Justin S. Morrill, then a member of the House of Representatives from the state of Vermont. This man became known as the father of agricultural colleges. His first bill was introduced in December 14, 1857 and passed in 1862 and the last one in August 30, 1890. His bills established a college in each state in the union, known as the Land Grant Colleges.

This act has played an important part in the development of vocational agriculture and preparing teachers to teach agriculture in the local schools.

Vocational Agriculture had its birth nation-wide in 1917 with the passing of the Smith-Hughes Act. The bill is stated this way ". . . that such education should be of less than college grade and be designed to meet the needs of persons over fourteen years of age who have entered upon or who are preparing to enter upon the work of the farm or of the farm home." (Stimson, p. 506)

As the program grew and developed changes were needed to meet the growing demand of it. To supplement the Smith-Hughes Act, the following have been passed by Congress, they are:

George-Reed Act 1929

George-Ellzey Act 1934

George-Deen Act 1936

George-Barden Act 1946

The Vocational Education Act of 1963 (Perkins)

The Vocational Education Act of 1963 was passed because of the accummulating evidence that the old Federal programs of assistance to vocational education, the one begun by the Smith-Hughes Act in 1917 and augmented and supplemented over the years by the Acts listed above was not broad enough, or flexible enough, or rich enough to meet the needs of today, much less the needs of tomorrow. The Vocational Act of 1963 eliminates the "farm practice requirement" and broadens the definition of the vocational agriculture in the Smith-Hughes and George-Barden Acts so as to permit Federal funds to be expended in agricultural training programs for off-farm agricultural occupations in which a knowledge and skill of agricultural subjects are involved.

Doctor James B. Conant in his book "The American High School Today" makes the statement "To my mind it is desirable for as many boys and girls in high school as possible to have an ultimate vocational goal. There is less tendency for such committed student to waste his time or have a negative attitude toward schoolwork."

The authors of the 1963 Vocational Education Act recognized this situation and stipulated that vocational agriculture funds may be used to

train for any occupation involving knowledge and skills in agricultural subjects whether or not such occupations involve work of the farm or the farm home. Furthermore, this legislation provides for directed supervised practice, either on-farm or non-farm, and that vocational agriculture be broadened to include non-farm agricultural occupations as well as the farming occupations. As a result vocational agriculture should grow in enrollment and in the scope of its offerings. Furthermore, it should serve urban as well as rural students both boys and girls.

Things were different at the time the Smith-Hughes Act was passed in 1917; it was with the idea of solving a problem that existed at the time. Juergenson wrote concerning the era that:

> Agriculture production was low. It took approximately five people working on the farm to support one person in the city. Free land in the ordinary sense was not available, yet anyone willing to work hard could become actively engaged in production agriculture, as the trend was for large tracts of land and large farms to be broken into smaller farms. Surpluses were not evident and greater production was the prime need. The machine age, as far as farming was concerned, was still a long way off. (Juergenson, 1953, p. 16)

In view of these conditions it is not hard to understand that the basic framework of the Smith-Hughes Act was to limit training to those boys who were already in or about to become involved in production farming.

In the early development of agriculture in this nation there were only a few different types of occupations. These were mostly along the lines of production agriculture. Eaton listed the occupations of his time as:

> General farming, dairy farming, fruit farming, grain farming, may be cited as exemplifying one class of agricultural occupations; egg farming, bee farming, tobacco farming, onion farming, as a second; the occupation of stallioneer, herdsman, shepherd, drain builder, a third; of budder, packer, shearer, thresher, a fourth. The first two classes are distincly entrepreneurial occupations involving the assumption of responsibility, risk, and control of capital. The third and fourth are of the employee group, dependent upon the acceptability of service to others, and involving less of assumption of responsibility, risk and control of capital. . . . . Classes one and two are professional in their exigencies; classes three and four trade occupations. (Eaton, 1923, p. 61)

Agriculture and farming were terms which were quite synonymous. Most of the work of agriculture was in production with little done in the line of servicing. Ideals of vocational agriculture did not change and the letter of the law seemed to prevail. Phipps (1959, p. 19) quoted the purpose of vocational agriculture as, "The primary aim of vocational education in agriculture is to train present and prospective farmers for proficiency in farming." This, of course, was the wording of the Smith-Hughes Act. Even though the Smith-Hughes Act was then in its 42nd year, little deviation was made from this basic purpose.

With the advent of a growing population and a shift into urban living, those involved in farm production were in less demand. Clark pointed out the chance in economy:

> We are all aware of the population chances taking place in our society. Changes in technology have caused readjustment in the occupational distribution of the population. A smaller proportion of workers are needed in production and a greater proportion are therefore engaged in service occupations than ever before. At the same time, many of the tasks formerly done on the farm are now being done in the cities, in factories, and other kinds of business concerns. Examples are perhaps unnecessary; however, let's look at

> one. Fifty years ago power on farms was largely provided by horses and the fuel was produced as part of the cropping program on the farm. Today our power is provided by the tractor and the electric motor and the fuel is delivered by truck or on wires. This has caused a shift of labor off the farm to other places where many tasks are performed to serve farmers directly or indirectly. (Clark, 1962, p. 9)

Juergenson saw the need for a change when he wrote:

> Agriculture still needs to train farm boys who are preparing to enter farming or take over a farm through inheritance. It also must provide training for the host of skilled workers needed to service agriculture through allied industry . . . Nowhere in our secondary school system except vocational agriculture, is there any real semblance of training available to this mass of non-farm students who will be associated with farming but no directly engaged in it. Vocational agriculture has the choice of maintaining its relatively narrow field or broadening its concept to meet the challenge and demands of a changing rural economy. (Juergenson, 1953, p. 17)

A difference was noticed between farming and agriculture. Wall wrote:

> If by occupation related to farming we mean such things as teachers of agriculture, agricultural agents, farm implement dealers, and various agricultural fieldmen, than a good program of farmer training is fundamental to his vocation. A boy or young man who has the opportunity to learn good farming (opportunity to practice good farming) can secure the other training that is fundamental to his vocation. (Wall, 1955, p. 244)

Sutherland saw the importance of broadening the program when he wrote:

> This is not a plea that we abandon our standards, throw overboard our objective, and drift with the tide; but rather, that we restudy them, bring them up to date, and make them realistic guides to a modern program of vocational education in agriculture. This is a plea that we recognize in our objectives

> that farming is not the agricultural occupation today, but that it is just one of the agricultural occupations; certainly the most important, but still not the only one; that while training for farming is and should be our primary aim, it should not be our only aim; that we recognize the difference between vocational education in agriculture and vocational education in farming. Let's quit kidding ourselves, and let's give our teachers guide posts which they can subscribe to and follow in guiding, counseling, and training students in a vocational program of education in agriculture. (Sutherland, 1956, p. 227)

The leaders in vocational education could see the need for this new area of off-farm agricultural occupations. Many articles appeared pertaining to this area, our own state director Mark Nichols wrote concerning this:

> While the farmer of yesterday was to a great degree a man of self-sufficiency, today he relies on the services and activities of many others engaged in occupations related to farming to help him succeed in the farming business. Occupations related to farming have been numerous, and the list is growing. Vocational training preparatory to entering these occupations usually involves agriculture, business and distributive education, and mechanics. Such a high school curricular offering, in addition to the general education basics, may include some agriculture along with farm and business law . . . A new program might be called "Agribusanics" (AGRIculture, BUSiness, and mechANICS). It would be something different than any programs of vocational education which are operated at present. This should strengthen the quality of vocational agriculture day programs by providing an educational outlet for farm boys with limited farming opportunities. (Nichols, 1956, p. 244)

Public Law 88-210 - New Vocational Act of 1963, Perkins

The Public Law 88-210, 88th Congress, H. R. 4955, dated December 18, 1963, is an Act to strengthen and improve the quality of vocational education and to expand the vocational education opportunities in the Nation, to

extend for three years the National Defense Education Act of 1958 and Public Laws 815 and 874.

Public Law 88-210 states:

Section 104.60 Vocational education in agriculture. Vocational education in agriculture education under the state plan shall be designed to meet the needs of persons over 14 years of age who have entered upon or are preparing to enter: (a) Upon the work of the farm or farm home, or (b) any occupation involving knowledge and skills in agricultural subjects, whether or not such occupations involves work of the farm or the farm home.

Section 104.61 Agricultural occupations defined. An agricultural occupation means an occupation involving knowledge and skills in agricultural subjects, which has the following characteristics: (a) The occupation includes the functions of producing, processing, and distributing agricultural products and includes services related thereto. (b) The occupation requires competencies in one or more of the primary areas of plant science, soil science, animal science, farm management, agricultural mechanization and agricultural leadership.

Section 104.62 Plan requirements for agricultural education. In addition to the general state plan requirements for vocational instruction in section 104.13 the State plan shall describe how the following essential characteristics of the program of instruction are to be met.

(a) The instruction deals with practical agricultural problems and includes subject matter and learning experience necessary in the production and marketing of plants and animals or their products.

(b) Preparatory programs of instruction shall provide for:

(1) Directed or supervised practice on a farm for those persons who are engaged in or preparing for farming.

(2) Practical field, laboratory or cooperative work experience as provided in Section 104.13 (h) (5) for other occupations involving knowledge and skills in agricultural subjects. (Public Law 88-210 p. 12353)

The bill authorizes the following appropriations for vocational education:

	Total	Utah's Allocation
For fiscal year ending June 30, 1964	$ 60,000,000	$ 327,996
For fiscal year ending June 30, 1965	118,500,000	647,805
For fiscal year ending June 30, 1966	177,500,000	970,341
For fiscal year ending June 30, 1967 and each year thereafter	225,000,000	1,230,010

The above authorizations are in addition to the present vocational educational annual appropriations of $57,000,000 (of which Utah receives $262,000).

Johnson reported on the President's Panel of Consultants Report on Vocational Education which recognized that vocational agriculture has made a great contribution toward America's status as the world leader in agricultural production.

Thinking in terms of the groups of people to be served in agriculture under the proposed new legislation they could be stated as follows:

1. High School youth who are preparing to become farmers or to enter the labor market in occupations related to agriculture.

2. High school youth who have special needs and require special programs to attain occupational competency or to become farmers.

3. Youth who have left high school and who are enrolled, full-time, in courses which prepare them for farming or off-farm agricultural employment, or for entrance into the general labor market.

4. Youth and adults who are already engaged in farming or other related employment . . . . (Johnson, 1965, p. 89)

Willis (1963, p. 223), the chairman of the Panel of Consultants on Vocational Education, reported that vocational education through the Smith-Hughes Act was being financed and administrated by occupational categories. Agriculture, trade and industry, home economics, and distributive education were separate and distinct departments. This had been a convenient and satisfactory administrative organization. Organization categories, however, were no longer so isolated from each other. Agriculture, for instance, was becoming more complex and was no longer based on production alone. It now depends upon an increased emphasis in management, finance, farm mechanization, conservation, transportation, processing, marketing of products on the farm, and similar areas.

The complete administration of the program of vocational agriculture had to be changed. The complete answer would come only with the passage of a new law for vocational education allowing money to be allocated in these related areas.

The late Dr. M. D. Mobley, the Executive Secretary of the American Vocational Association, and one of the most dedicated men in securing enactment of the bill, said:

> The Vocational Education Act of 1963 is the most comprehensive vocational measure that has become law in the history of the program in our nation. It will result in a greatly expanded and improved program of vocational education in all the states in our nation . . . To assure more flexibility in vocational education programs the Perkins Act amends the Smith-Hughes and George-Barden Acts to permit the Federal funds to be expanded in agricultural training programs for occupations related to agriculture for which knowledge and skill of agricultural subjects are involved. (Mobley, 1964, p. 5)

With the new era of off-farm agricultural occupations upon us a national center for Advance Study and Research in Agriculture Education was set up at the Ohio State University under the direction of Robert E. Taylor. Much material has been gathered by the workers there.

Many states have planned or are planning programs of instruction in off-farm agricultural occupations. One of the nations pilot school is at Paducah, Kentucky, which has furnished guide lines to follow in outlining a program of off-farm agricultural occupation instruction. Also, the center at Ohio State has been very helpful in disseminating information.

Fraser (1965, p. 174) reports that in the fall of 1965 Massachussets students will enroll in one of four major courses suited to comply with a particular line of study. The four major subjects are horticulture, agriculture science, service technology, and food distribution.

The present program of vocational agriculture in high schools in Virginia does not turn out enough young men who have completed two or more years of training in vocational agriculture to meet the replacement needs in farming and related occupations according to results of a study recently compiled by J. M. Campbell, State Supervisor of Agricultural Education and A. L. Yeatts, Jr., Assistant Supervisor of Agricultural Education reported Bass (1965, p. 97).

In Freehold, New Jersey, according to Kopf (1965, p. 62), starting in September 1964, the department will off the following courses: Freshmen - (1) Exploratory Agriculture--elective 2 1/2 credits, (2) Technical

Agriculture--for agriculture majors--5 credits. Sophomores - Agricultural Science. Juniors - choice of (1) Agricultural Production and Farm Mechanics Technology, (2) Horticultural Production and Horticultural Mechanics Technology. Seniors - Agricultural Business Management and Advanced Agricultural Mechanics. There is a superivsed agricultural occupation experience program required for all agricultural majors. Students may elect either farm or horticultural production projects, or placement for occupational experience in approved agricultural occupations.

In North Manchester, Indiana, Sparrow (1964, p. 228-229) reported a program which was being used for the senior students in vocational agriculture. Realizing that the average Indiana farmer produces enough for himself and thirty others, the need for instruction in off-farm agricultural occupations was well known. The students were asked to list six establishments in some phase of agriculture of which they had an interest. The establishments selected included veterinarians, feed elevators, implement dealers, a meat market, a bank, an insurance agent, a hog market, a livestock equipment manufacturer, a bulk fuel delivery service, and a lumberyard.

The students spent two hours during the school day and one hour after school working at the establishments. They had the opportunity to working at four different establishments during the school year. The students were required to present written reports of their experiences and accomplishments.

In Los Angeles, Matthews reports of agricultural education being taught in secondary schools of a metropolitan area. They feel that a subject

area of agriculture can contribute very directly to these objectives of a good education because:

1. Agriculture is basically indispensable to human welfare and should be understood by all students.

2. Acquaintance with agriculture develops in the student an understanding and appreciation for the fundamental underlying wealth and strength of communities, states, and nations.

3. Agriculture applied skills, basic facts, and scientific knowledge aid in the development of means for better living.

4. Every citizen is dependent upon agriculture for food and to a substantial degree the raw materials for clothing and shelter.

5. Greater understanding between city and rural people is essential to continuing solutions for changing American economic and social patterns. (Matthews, N. D., p. 5)

The course of study for the Los Angeles schools is an orientation into the broad subject matter of agriculture including economic considerations, trends in modern agriculture, social significance, relation of sciences to agriculture, consumer education and job opportunities, agricultural sciences and agricultural engineering.

Junior high school curriculums include gardening and floriculture, both having basic and advanced courses. The senior high school has basic advanced courses in animal husbandry, general agriculture, horticulture, and vocational agriculture.

In Cleveland, Ohio, Fick and Wotowiec (1963, p. 14-15) reported on a class in vocational horticulture. The purpose of the program was to provide training for students interested in future employment in the twelve

million dollar a year Cleveland horticulture industry. This program received funds from the Smith-Hughes Act because it had on-the-job training in the schools' greenhouses. The program differed from the vocational agriculture program in course content, farming program occupational experience, and sex of students (both male and females were included). Course content was oriented toward the needs of local horticulture industry. The students were all from the city.

Taft (1963, p. 220) in a study of off-farm occupational training in vocational agriculture classes in the New England States observed that the number of off-farm jobs in agriculture has been increasing to offset the decline in the number of farm opportunities for work. In spite of the increased emphasis of specialized training given in horticulture, we cannot meet all requests for trained graduates in such areas as floriculture, landscape gardening, and arboriculture. These jobs are found primarily in urban areas.

Woodin states:

> That high school vocational agricultural programs preparing students for off-farm agricultural occupations, need to be planned in terms of these concerns of parents. The concerns are:
>
> (1) Strong, personal relationship will need to be maintained between the teacher, the student, and their parents.
> (2) We must plan a broad type of vocational education which will open several doors of opportunity rather than provide only narrow specialized training of single careers.
> (3) This program must be made as much a part of the high school curriculum as the traditional vocational agriculture program.

(4) Off-farm agricultural occupations students need the experience provided by the FFA Chapter plus a suitable awards program for them. (Woodin, 1965, p. 163)

Bjoraker (1965, p. 21) observed that an agricultural background is not essential in agricultural businesses, but it is very valuable. Persons with such a background have a better understanding of the end product, and "speak the language" with farm people, and usually know the meaning of work.

Procedure for Organizing an Agri-Occupation Program

Colorado State Board of Vocational Education list the following steps to follow in setting up an instructional program:

1. The vocational agriculture instructor and appropriate school administrators (including the superintendent) should discuss the program and agree that one or more of the following steps of the organizational procedure should be carried out.

2. A local survey should be made to determine the number and kinds of business or films in the field of agriculture that are in the community. A suggested procedure to assist in this step may be found in Sec. IV.

3. The vocational agriculture instructor should make a preliminary survey of the high school student body to determine the number of prospective students. See Section IX.

4. The Vo-Agri division of State Board for Vocational Education should be contacted for any assistance they may be able to offer. A member of the State Staff will meet with the local school officials to explain the States reinbursement services which the local school may desire.

5. An advisory council should be appointed. See Section V.

6. The public should be informed. See Section VI.

7. The school should develop and adopt a policy statement which will serve as an operational guide for administration of agricultural occupations program. See Section VII.

8. Arrangements for the necessary facilities and equipment should be made.

9. Trainees should be selected. See Section IX.

10. Training centers should be selected. See Section X.

11. Trainees should be placed in training centers. See Section VIII.

12. Training programs should be developed. See Section XI.

13. The necessary forms and certificates should be completed.

14. Arrangements should be made with the school administration concerning class schedules, travel allowance, and other factors so that an adequate job of coordination can be accomplished. See Section XIII.

15. The program should be evaluated. See Section XV. (Linson, 1964, p. 67)

The Agricultural Education Department of the University of Kentucky Has just released a course of study outline in Agricultural Occupations which the author preferred to the outline printed at Ohio State.

Comments and Conclusions Based on Review of Literature

A combination of more farm land, fewer people on the farm and tremendous population growth has brought about a great challenge to the future of vocational agriculture. Major problems arise because:

1. The image of agriculture persists in many persons minds as a matter of tilling the soil and wrestling a meager living from the reluctant earth. (Silvard, 1963, p. 121)

2. Few young people really understand the demands and opportunities which exist for them in a modern agriculture. (Silvard, 1963, p. 121)

3. Far-related agricultural occupations vary with each community. Surveys must be made in every area before full effectiveness of any agricultural program can be realized. (Clark, 1960, p. 89)

4. There is a need for a re-definition and a more realistic interpretation of the primary objectives of vocational agriculture. Vocational agriculture courses should be continually modernized and intensified in keeping with technological changes. (Tenney, 1963, p. 217)

5. Teaching "about" and teaching "for" agricultural occupations are two different things. "About" indicates guidance, while "for" implies the teaching of skills, abilities, and knowledge required to perform the duties of the occupation. In order for vocational agriculture to fulfill its goal we must teach "for" these related occupations. (Hoover, 1962, p. 220)

6. There is a place for high school courses in agriculture that are not vocational. (Wall, 1955, p. 244)

7. Additional education opportunities should be provided for individuals who are already employed in the off-farming agricultural occupations, as well as for those who wish to enter such occupations. (Blackburn & Dawson, 1961, p. 22)

8. The rapid growth of vocational education during recent years has brought about a need for adjustments in the school curriculum where students can study the off-farm agricultural occupations in high school.

9. Even though man power requirements for production in agriculture is decreasing, it is clear that the off-farm agriculture

occupations are demanding more employees and higher trained personnel in this area.

10. Opportunities for both boys and girls in off-farm agricultural occupations is increasingly evident, as the literature of Cleveland and Los Angeles indicates.

METHODS AND PROCEDURES

Designing a Plan

The first step in this study was to review the work done on similar problems in other geographical areas of Utah. A review of literature pertaining to this study on a national basis gave the author a basic understanding of what information to obtain.

Information from studies undertaken in Ohio, Pennsylvania, and Illinois was coordinated at the Ohio State University Conference co-sponsored by the National Center of Advance Study and Research in Agricultural Education and Agricultural Education Board of the United States Office of Education. Standard survey forms were developed from this conference to better help coordinate future state studies. It was from these conference reports on agricultural occupations and the survey forms used that the objectives, procedures, methods and reference materials for this study were derived. These forms were identified as Forms I and II.

Procedure Used in Study

Steps:

1. Review literature.
2. Studied original survey forms.
3. Adapted survey forms I and II to secure the information (see appendix).

4. Studied and reviewed Dean Shank's and Lee Olsen's thesis. on off-farm agricultural occupations of Salt Lake, Davis and Weber counties.
5. Secured names and addresses, from the United State Employment Security Offices and the vocational agricultural instructors, of businesses in area included in survey.
6. Sent letters to businessmen along with form I and II.
7. Made personal interviews where possible.
8. Made telephone interviews with those not contacted personally.

RESULTS AND DATA DISCUSSION

Organization for Presenting Results and Data

For presenting the information found in the survey the data collected were classified as follows:

1. Occupational code numbers as set up by the United States Department of Employment Security Service.
2. Job title
3. Number of full-time employees
4. Number of female employees
5. Part-time workers
6. Anticipated number of additional employees in two and five years
7. Total new openings
8. Clustered occupations with similar backgrounds
9. Analysis data
10. Draw conclusions and give recommendations

Clustering of Occupations With Similar Educational Backgrounds

The employment opportunities for off-farm agricultural occupations for Millard, Beaver, Iron and Washington counties were clustered into four general categories. Each of these categories can be further classified into the following more specific areas.

1. Animal Science
    a. Livestock
    b. Dairy
    c. Poultry
2. Farm machinery, sales, services, and farm supplies
    a. Sales
    b. Services
    c. Mechanics
    d. Clerks
3. Agricultural Services and professional work in agriculture
    a. Forest Service
    b. Bureau of Land Management
    c. Soil Conservation
    d. Agricultural Stabilization and Conservation Service
    e. Federal Housing Administration
    f. Professional Services
4. General Agriculture

Each of the counties in this survey has some major similarities and some major differences. For this reason the survey has been compiled on a county basis according to the four categories shown above.

There was only one labor union operating in the area studied. This was in Washington County and only one company was employing union labor. So no further mention will be made on this except in reporting Washington County.

In all cases employers preferred people of rural backgrounds, but it was not required. In the case of the clerks employers wanted people who had a speaking knowledge of terms used by people in their field. In all cases they preferred high school graduates over non-graduates. In some cases a college degree was required.

On-the-job training was offered in most of the business concerns because of the lack of available skilled labor.

Millard County

Animal science

Seven businesses were surveyed in Millard County in the field of animal science. The data collected are shown in Table 1.

Table 1. Employees working in the livestock, dairy and poultry areas in Millard County, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
294.258	Auction, livestock	0	0	3	0	0	0
413.684	Brand inspector	0	0	2	0	0	0
529.886	Cheesemaker	7	0	1	0	0	0
153.228	Horse trainer	2	0	2	0	0	0
162.158	Livestock buyers	2	0	1	0	0	0
316.884	Meat cutter	7	0	1	0	0	0
	Totals	18	0	10	0	0	0

Workers in the livestock, dairy and poultry area comprise fourteen per cent of the off-farm labor force. The part-time labor force makes up thirty-six per cent of this group. The areas of cheesemaking and meat cutting had the largest number of full-time employees. The cheesemakers are on a salary making $400 per month. Some meat cutters work on a salary of $2.00 per hour, others work on a cost per pound basis for custom meat cutting.

Farm machinery, sales, service and farm supplies

There were seventeen business firms surveyed in Millard County in the areas of farm machinery, sales, servic, and farm supplies. The data collected are shown in Table 2.

Employees working in the farm machinery, sales service and farm supplies comprise thirty-one per cent of the labor force in off-farm agricultural occupations. The large seed processing plants and feed mills in Millard County include eighty per cent of this group leaving about twenty per cent in agricultural mechanics, sales and services.

Most of the workers are paid by the hour ranging from $1.50 to $2.00 per hour. The managers and foreman receive $400 to $500 per month. Employment opportunities are better in the mechanics field .

Agricultural and professional services

Eight businesses were surveyed in Millard County in the field of agricultural services and professional work in agriculture. The Bureau of Land Management has a regional office located in Fillmore that services

Table 2. Employees working in the farm machinery, sales service and farm supplies areas in Millard County, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
209.388	Clerk	0	2	0	0	0	0
905.883	Feed truck driver	1	0	0	0	0	0
529.132	Feed mill manager	3	0	1	0	0	0
520.886	Feed mill labor	5	0	12	0	0	0
620.381	Mechanics	8	0	3	2	0	2
210.388	Parts, bookkeeper	2	0	1	0	0	0
187.168	Sales equipment	1	0	0	0	0	0
277.358	Sales manager	0	0	0	1	0	1
920.887	Seed, labor warehouse	3	0	19	0	0	0
162.168	Seed manager	3	0	0	0	0	0
	Totals	26	2	36	3	0	3

Juab, Millard and Beaver counties. The Soil Conservation Service has a unit in both Fillmore and Delta.

Agricultural and professional service areas have thirty-two per cent of the off-farm agricultural labor force of the county. The strongest opportunities for employment are with the Forest Service, Bureau of Land Management and Soil Conservation work; these areas require a four year college degree. The starting salary is based on the government pay scale

and usually start out with a GS-4 at $4760 per year. Part-time employees who work for $2.24 per hour make up about fifty per cent of this group.

Table 3. Employees working in the areas of agricultural and professional services in Millard County, May 1967

Occ. code	Title	Full-time	Total time	Part-time	2 yrs. hence	5 yrs. hence	Total new
209.288	Clerk	0	2	1	1	0	1
202.388	Clerk-steno.	0	2	0	0	1	1
209.288	Clerk-typist	0	1	0	0	0	0
040.081	County agents	2	0	0	0	0	0
196.283	Crop spraying	0	0	4	0	0	0
356.381	Horseshoer	0	0	3	0	0	0
153.248	Jockey	0	0	2	0	0	0
409.883	Land leveling	0	0	3	0	0	0
169.168	Office manager	1	0	0	0	0	0
040.081	Range conservationist	13	0	0	0	0	0
040.081	Ranger, forest	1	0	0	0	0	0
441.384	Ranger, forest tech.	1	0	9	2	0	2
040.081	Ranger, technician	0	0	10	0	0	0
040.081	Soils, conservationist	1	0	0	0	0	0
040.081	Soils, conservationist work unit dirc.	2	0	0	0	0	0
040.081	Soils, engineer aid	3	0	1	0	0	0
029.381	Soils, scientist	3	0	0	0	0	0
091.228	Teachers, Voc. Agric.	2	0	0	0	0	0
	Totals	27	5	33	3	6	9

Agricultural services area offers the greatest opportunity for employment in the county, so far as off-farm agriculture is concerned.

General agriculture

Seven businesses were surveyed in Millard County in the general agriculture areas. The data collected are shown in Table 4.

Table 4. Employees working in the general agriculture off-farm area Millard County, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
921.885	Grain storage	1	0	4	0	0	0
522.885	Honey processor	2	0	6	0	0	0
163.118	Potato pit manager	1	0	0	0	0	0
529.687	Potato sorters	0	0	16	0	0	0
637.281	Pump sales & service	2	0	0	0	0	0
451.781	Trapper, gov.	2	0	0	0	0	0
184.168	Water master	0	0	7	0	0	0
859.782	Well drilling	3	0	0	0	0	0
869.887	Well drilling helper	3	0	0	0	0	0
	Totals	14	0	33	0	0	0

General off-farm agricultural area represent twenty-three per cent of the off-farm agricultural labor force. Two-thirds of this group are on a part-time basis working on an hourly pay scale of $1.50 to $2.00 per hour. The full-time employees are self-employed. The preparation for this group is usually done on-the-job according to those interviewed.

Beaver County

Animal science

Six businesses were surveyed in Beaver County in the field of animal science. Partnership of father and son buying and selling livestock was in evidence as a self-employed occupation in the area. The data collected are shown in Table 5.

Table 5. Employees working in the livestock, dairy and poultry areas in Beaver County, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
413.684	Brand inspection	0	0	1	0	0	0
529.782	Bookkeeper	1	0	0	0	0	0
467.384	Inseminator	0	0	3	0	0	0
162.158	Livestock buyers	4	0	0	0	-0	-0
184.168	Locker plant	1	0	0	0	-1	-1
316.884	Meat cutters	2	0	0	0	0	0
529.887	Meat slaughter	1	0	0	0	0	0
316.884	Meat wrapper	0	1	0	0	0	0
529.782	Milk, butter	2	0	1	0	0	0
529.886	Milk, cheesemaker	2	0	0	0	0	0
529.886	Milk, deliver	1	0	3	0	0	0
529.886	Milk, laborer	2	0	1	0	0	0
222.687	Milk, powdered	1	0	0	0	0	0
222.687	Milk, receiver	1	0	0	0	0	0
469.381	Milk, tester	1	0	1	0	0	0
406.884	Nursery laborer	0	0	2	0	0	0
466.887	Rodeo stock	0	0	6	0	0	0
	Totals	19	1	18	0	-1	-1

Livestock, dairy and poultry area comprises twenty per cent of the labor force in off-farm agricultural occupations in Beaver County. The dairy industry comprises fifty per cent of the total labor force. Workers are paid $400 to $525 per month. On-the-job training is done, but the author indicates some college training could be useful in this area.

Employment is found mainly in livestock buying, selling, custom slaughtering, and cutting of meats. Income varies.

Supplying of stock for rodeos is on a self-employment basis. Salaries vary greatly in this area

Farm machinery, sales, service and farm supplies

Five businesses were surveyed in Beaver County in the areas of farm machinery, sales, service, and farm supplies. The data collected are shown in Table 6.

Employees working in the areas of farm machinery, sales, service, and farm supplies has ten per cent of the labor force of the county. It is divided about equal as to machinery and allied work, and the handling of feeds and farm supplies.

Feed mill employees work on a varied salary scale. Some receive $1.50 to $2.00 per hour to $400 per month. They are trained on the job.

Mechanics wages range from $400 to $500 per month. Additional technical training beyond high school degrees would be helpful for employment, but sometimes not required.

Beaver County

Animal science

Six businesses were surveyed in Beaver County in the field of animal science. Partnership of father and son buying and selling livestock was in evidence as a self-employed occupation in the area. The data collected are shown in Table 5.

Table 5. Employees working in the livestock, dairy and poultry areas in Beaver County, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
413.684	Brand inspection	0	0	1	0	0	0
529.782	Bookkeeper	1	0	0	0	0	0
467.384	Inseminator	0	0	3	0	0	0
162.158	Livestock buyers	4	0	0	0	-0	-0
184.168	Locker plant	1	0	0	0	-1	-1
316.884	Meat cutters	2	0	0	0	0	0
529.887	Meat slaughter	1	0	0	0	0	0
316.884	Meat wrapper	0	1	0	0	0	0
529.782	Milk, butter	2	0	1	0	0	0
529.886	Milk, cheesemaker	2	0	0	0	0	0
529.886	Milk, deliver	1	0	3	0	0	0
529.886	Milk, laborer	2	0	1	0	0	0
222.687	Milk, powdered	1	0	0	0	0	0
222.687	Milk, receiver	1	0	0	0	0	0
469.381	Milk, tester	1	0	1	0	0	0
406.884	Nursery laborer	0	0	2	0	0	0
466.887	Rodeo stock	0	0	6	0	0	0
	Totals	19	1	18	0	-1	-1

Table 7. Employeed working in the agricultural service areas in Beaver County, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
160.188	Accounting	0	0	1	0	0	0
040.081	Agriculture Stabilization & Conservation	1	0	0	0	0	0
209.388	Clerk	0	2	1	0	0	0
096.128	County Agri. Agent	1	1	0	0	0	0
169.268	Farm Home Administration	1	0	1	0	0	0
356.381	Horseshoer	0	0	2	0	0	0
419.884	Horse trainer	0	0	1	0	0	0
153.228	Horse trainer, race	0	0	1	0	0	0
153.248	Jockey	0	0	2	0	0	0
040.081	Ranger, forest	1	0	0	0	0	0
040.081	Ranger, staffmen	3	0	0	0	0	0
187.118	Recreational, forest	0	0	3	0	2	2
040.081	Soil conservationist	1	0	0	0	0	0
040.081	Soil engineer aid	1	0	0	0	0	0
091.228	Teacher, Voc. Agri.	1	0	0	0	0	0
040.081	Timber technician & fire control	0	0	7	0	2	2
040.081	Work unit conservationist	1	0	0	0	0	0
	Totals	11	3	19	0	4	4

Some interesting information was brought to light in this area. Services for training and riding horses went as high as $1200 per month, with working periods ranging from five to six months; thus making a good income.

General agriculture

There were three businesses surveyed in the areas of general agriculture in Beaver County, May 1967. The data collected are shown in Table 8.

Table 8. Employees in the general agriculture off-farm areas, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
940.884	Christmas tree	2	0	25	0	0	0
413.887	Post, wood	10	0	50	0	0	0
451.781	Trapper, government	1	0	0	0	0	0
407.884	Grounds keeper	0	0	1	0	0	0
859.782	Well drillers	2	0	0	0	0	0
869.887	Well driller helpers	1	0	0	0	0	0
	Totals	16	0	76	0	0	0

General agriculture area comprise fifty per cent of the labor force of the county, with about ninety per cent of them working on a part-time basis. Ths group of employees cut cedar posts and christmas trees most of the year. Salaries are paid on a unit harvest basis, other times on a $1.50 per hour scale. Full-time employees are self-employed, receiving incomes from $400 up per month.

Iron County

Animal science

Ten businesses were surveyed in Iron County in the field of animal science. The data collected are shown in Table 9.

Table 9. Employees working in the livestock, dairy and poultry areas May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
294.258	Auction livestock	0	0	1	0	0	0
466.887	Auction yard worker	0	0	4	0	0	0
413.684	Brand inspector	0	0	2	0	0	0
529.381	Cheesemaker	1	0	0	0	0	0
529.886	Dairy processing plant workers	11	0	0	0	0	0
529.782	Ice cream maker	1	0	0	0	0	0
529.131	Foreman, plant	1	0	0	0	0	0
162.158	Livestock buyer	2	0	1	0	0	0
316.884	Meat cutter	5	0	2	0	0	0
168.284	Meat inspector	0	0	2	0	0	0
529.887	Meat slaughter	4	0	0	0	0	0
525.131	Meat slaughter foreman	2	0	0	0	0	0
316.884	Meat wrappers	1	0	0	0	0	0
529.782	Milk receiver	1	0	0	0	0	0
529.782	Milk pasturizer	1	0	0	0	0	0
209.388	Office Clerk	0	1	0	0	0	0
163.118	Office manager	1	0	0	0	0	0
163.118	Sale manager	1	0	0	0	0	0
905.883	Salesmen route	2	0	0	0	0	0
905.883	Truck drivers	3	0	4	0	0	0
162.158	Wool buyer	0	0	2	0	0	0
	Totals	37	1	18	0	0	0

Employees working in the livestock, dairy, and poultry areas comprise eleven per cent of the off-farm occupational labor force. The dairy industry offers fifty per cent of this force, with a grade "A" milk processing plant located there to service this area. The salary scale is $2.58 to $2.77 per hour for those on hourly basis and up to $650 per month on the monthly scale. The turn over is small, therefore, on-the-job training is given.

Meat processing has about twenty per cent of the labor in this area. Most businesses are self-employed and income varies greatly with the amount of meat processed.

Farm machinery, sales, service and farm supplies

Nine businesses were surveyed in Iron County in the areas of farm machinery, sales, service and farm supplies. The data collected are shown in Table 10.

Farm machinery, sales, service and farm supplies comprise nine per cent of the work force in Iron County. Farm machinery contains sixty-two per cent of this area. Employees are self-employed with salaries ranging from $5000 up.

The feed mill area employees thirty-six per cent of this group. Feed mill managers are paid $400 to $500 per month; workers receive $2.00 to $2.50 per hour.

Table 10. Employees working in the farm machinery, sales, service and farm supplies areas in Iron County, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
601.381	Blacksmith	2	0	0	0	0	0
209.388	Clerks	0	1	0	0	0	0
520.132	Feed-mill labors	5	0	4	0	0	0
529.132	Feed-mill manager	3	0	0	0	0	0
163.118	Manager, shop	3	0	0	0	0	0
276.158	Parts	2	0	1	0	0	0
276.158	Salesmen	4	0	1	0	1	1
624.281	Mechanics	1	0	2	2	0	2
210.388	Bookkeeper	2	0	1	0	1	1
922.887	Warehouse	2	0	3	0	0	0
	Totals	25	1	12	2	2	4

Agricultural and professional services

Ten businesses were surveyed in Iron County in the field of agricultural services and professional work. The data collected are shown in Tables 11a to 11e.

Cedar City, the largest city of the southwestern portion of the state, has many of the government offices located in it; because of this unique situation, the author has separated these services into separate tables dependent upon which branch of service they serve.

Agricultural services and professional employees comprise sixty-four per cent of the labor force in Iron County, listed in Tables 11a to 11e.

Table 11a. Employees working in the agricultural and professional service areas Iron County, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
040.081	Agri. Stabilization Conservation Service	1	0	2	0	0	0
209.388	Clerk	0	4	0	0	0	0
219.388	Clerk-typist	0	1	0	0	0	0
096.128	County Agri. Agent	1	1	0	0	0	0
356.381	Horseshoer	0	0	3	0	0	0
419.884	Horse trainer	0	0	3	0	0	0
158.248	Jockey	0	0	2	0	0	0
169.268	F. H. A. County Assist.	1	0	0	0	0	0
169.268	F. H. A. County Super.	1	0	0	0	0	0
091.228	Teacher, Voc. Agri.	1	0	0	0	0	0
469.884	Sheep shearer	0	0	12	0	0	0
424.883	Sprayer	0	0	3	0	0	0
073.108	Veterinarian	2	0	0	0	0	0
356.874	Veterinarian helper	0	0	1	0	0	0
465.781	Weed inspector	0	0	1	0	0	0
	Totals	7	6	26	0	0	0

Several employees in Table 11a are professional college graduates with salaries ranging from $5500 to $12000 per year.

Part-time workers are mostly sheep shearers and this varies from year to year. Training is on the job.

Employees in the Forst Service number 201, by far the largest single place of employment. Employees comprise clerks, construction, and part-time workers; skilled and semi-skilled laborers. Salaries start with GS-4

Table 11b. Employees working for the Forst Service, Cedar City office, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
169.168	Administration office	1	0	0	0	0	0
169.168	Administration assistant	2	0	0	0	0	0
202.388	Clerk-stenographer	0	1	0	0	0	0
209.388	Clerk-typist	0	10	0	1	1	2
869.887	Construction	41	0	18	44	21	65
005.187	Engineer	1	0	6	0	1	1
017.281	Engineer assistant	2	0	30	0	2	2
869.883	Equipment operator	8	0	0	1	2	3
899.122	Foreman	3	0	0	0	1	1
168.168	Land-transfer	1	0	0	0	0	0
019.081	Landscape architect	1	0	0	0	0	0
187.118	Recreation	2	0	20	30	10	40
040.081	Rangers, staffmen	4	0	0	1	2	3
162.168	Supervisor	1	0	0	0	0	0
040.081	Timber technician & fire control	2	0	40	10	5	15
905.883	Truck drivers	6	0	0	1	3	4
040.081	Watershed manager	1	0	0	0	0	0
	Totals	76	11	114	88	48	136

at $460 to $12,000. Part-time employees start at $2.24 per hour and many of these are students planning to enter into the field of forestry. This area offers the largest opportunity for employment, for approximately seventy-two per cent of all new jobs in off-farm agricultural occupations are with this service.

Table 11c. Employees working for the Bureau of Land Management, Cedar City office, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
040.081	Area manager	2	0	0	0	0	0
169.138	Administration office	1	0	0	0	0	0
219.388	Clerks	0	2	1	0	0	0
869.887	Construction	1	0	0	0	0	0
040.081	District manager	1	0	0	0	0	0
005.187	Engineer	0	0	1	0	0	0
441.887	Fire control	0	0	4	0	0	0
869.883	Heavy eqpt. operator	3	0	0	0	0	0
040.081	National resource	2	0	0	1	0	1
441.384	Range technician	2	0	0	1	0	1
970.081	Sign maker	1	0	0	0	0	0
040.081	Wildlife biologist	1	0	0	0	0	0
	Totals	14	2	6	2	0	2

Table 11c includes employees of the Bureau of Land Management. Of the full-time employees, fifty per cent are professional people with the clerks and maintenance personnel making up the other fifty per cent. Four new job openings are in the offering in the next two to five years. Vacancies in these opening are usually filled with transferred personnel.

Table 11d. Employees working for the Soil Conservation Service, Cedar City office, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
209.288	Clerk	0	1	0	0	0	0
040.081	Engineer, soils	1	0	0	0	0	0
040.081	Range specialist	1	0	0	0	0	0
040.081	Soil conservationist	3	0	0	1	0	1
029.381	Soil scientist	1	0	0	0	0	0
040.081	Work unit conservationist	1	0	0	0	0	0
	Total	7	1	0	1	0	1

Table 11d includes the employees in the Soil Conservation Service. They are all professional except the clerk. GS-4, $4760, is the starting salary of this group.

Table 11e. Employees working for the Fish and Game, Cedar City office, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
379.168	Conservationist, wildlife	5	0	0	0	2	2
041.168	Fishery manager	1	0	0	0	0	0
379.168	Game manager	1	0	0	0	0	0
041.168	Hatchery superintendent	1	0	0	0	0	0
436.181	Hatchery assistant	1	0	0	0	0	0
379.168	Law enforcement	1	0	0	0	0	0
209.388	Secretary	0	1	0	0	0	0
162.168	Supervisor	1	0	0	0	0	0
	Totals	11	1	0	0	2	2

Table 11e comprise the employees of the Utah State Fish and Game Department with headquarters in Cedar City. The four counties in this survey are reported from this one office. The requirements for new employees is graduation from college, however, some of the older employees have been trained on the job. Salaries in the department start at $449 per month to $797 per month.

General agriculture

Six businesses were surveyed in Iron County in the field of general agriculture. The data collected are shown in Table 12.

Table 12. Employees working in the general agriculture off-farm areas, in Iron County, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
526.130	Bakery foreman	1	0	0	0	0	0
299.587	Bakery girl	2	0	0	0	0	0
929.886	Bakery labor	1	0	0	0	0	0
210.388	Bookkeeper	0	2	0	0	0	0
040.081	Florist	2	0	1	0	0	0
406.884	Florist helper	1	0	2	0	0	0
407.884	Grounds keeper	0	0	1	0	0	0
168.287	Potato inspector	1	0	0	0	0	0
899.133	Potato-pit foreman	2	0	0	0	0	0
921.885	Potato processing	0	0	0	0	50	50
529.687	Potato sorter	3	0	57	0	0	0
276.158	Sales, potato	2	0	0	0	0	0
859.782	Well driller	2	0	1	0	0	0
869.887	Well driller helper	2	0	1	0	0	0
	Totals	19	2	63	0	50	50

General services of off-farm agricultural occupations of Iron County comprise sixteen per cent of the off-farm agricultural labor force. Seventy-six per cent is part-time employees. The large potato industry in the Beryl or Escalante Valley is probably the largest potato area of any place in the state. They are planning a future processing plant to process frozen potatoes for table use; ready marketable produce. When this takes place it will employ approximately fifty more personnel.

Salaries for the part-time employees start at $1.25 per hour. Training is done on-the-job. Other scattered occupations are self-employed.

Washington County

Animal science

Three businesses were surveyed in Washington County in the field of animal science. The data collected are shown in Table 13.

Livestock, dairy and poultry in Washington County comprises twenty-eight per cent of the off-farm labor force. Turkey processing includes ninety per cent of the labor force, this is part-time employment. Training is done on the job, with salaries on a $1.50 per hour scale.

The milk from the dairies in Washington County is processed out of the county and then shipped back to the central depot for delivery. However, a small grade "B" operation service is in Hurricane, and St. George has a grade "A" plant serving the community.

Table 13. Employees working in the areas of livestock, dairy and poultry in Washington County, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
413.684	Brand inspector	0	0	3	0	0	0
467.384	Inseminator	0	0	2	0	0	0
905.883	Milk deliver	3	0	0	0	0	0
529.782	Milk processor	1	0	1	0	0	0
412.887	Turkey hatchery labor	0	0	2	0	0	0
429.168	Turkey hatchery mgr.	1	0	0	0	0	0
168.287	Turkey inspector	1	0	0	0	0	0
525.887	Turkey processing labor	2	0	50	0	0	0
529.123	Turkey processing manager	1	0	0	0	0	0
	Totals	9	0	58	0	0	0

Farm machinery, sales, services and farm supplies

Five businesses were surveyed in Washington County in the areas of farm machinery, sales, services and farm supplies. A large feed mill serves the area with feeds and farm supplies. The data collected are shown in Table 14.

Farm machinery sales, services and farm supplies comprise fourteen per cent of the labor force in Washington County, with about eighty per cent in the area of feeds and supplies. No skill is required other than safety training and on-the-job training.

Salaries start at $1.50 to $2.50 per hour. Mechanics make up the rest of the labor group. Technical training beyond a high school education is desirable. Wages are from $2.50 to $3.50 per hour.

Table 14. Employees working in the areas of farm machinery, sales, services and supplies in Washington County, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
209.388	Clerk	0	2	0	0	0	0
520.886	Feed mill labors	14	0	2	0	5	0
529.132	Feed mill manager	4	0	0	0	0	0
624.281	Mechanic	4	0	0	0	0	0
163.118	Repair shop supt.	2	0	0	0	0	0
624.281	Small engine service	1	0	0	0	0	0
276.158	Tractor sales	0	0	1	0	0	0
	Totals	25	2	3	0	5	5

The agricultural mechanical needs are serviced by the existing automotive repair shops. It appears that one good agricultural mechanical repair shop would be of worth to the area.

Agricultural and professional services

Nine businesses were surveyed in Washington County in the field of agricultural and professional services. Part of the services for this county are furnished out of the Cedar City offices. The data collected are shown in Table 15.

Employees working in the agriculture and professional service area of Washington County comprise eleven per cent of the labor force; of this group fifty per cent are professional. Salaries start at $4760. Plans for the Dixie Reclamation Project, will offer additional employment opportunities.

Table 15. Employees working in agriculture and professional service area, in Washington County, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
209.388	Clerk	0	2	1	0	0	0
096.128	County Agric. Agent	1	1	0	0	0	0
169.268	Farm Home Admin.	1	0	0	0	0	0
356.381	Horseshoer	0	0	3	0	0	0
520.886	Seed mill labor	2	0	0	0	0	0
162.168	Seed mill manager	1	0	0	0	0	0
040.081	Soils conservationist	1	0	0	0	5	5
040.081	Soils engineer aid	1	0	4	0	3	3
029.381	Soils scientist	1	0	0	0	3	3
040.081	Soils work unit dirc.	1	0	0	0	1	1
040.081	Teachers, Voc. Agric.	3	0	0	0	0	0
073.108	Veterinarian	1	0	0	0	0	0
	Totals	13	3	8	0	12	12

General agriculture

Five businesses were surveyed in Washington County in the area of general agriculture. The data collected are shown in Table 16.

This survey does not include small fruit stands where various fruits are sold during the summer months. At the time this survey was taken these people were not available for coverage of survey. This is an important source of income to the people of these small communities in the Washington County area.

A large produce company doing business over several state lines hires seventy-eight per cent of the employees in this area, there is a ten per cent annual turnover of employees. This is the only company controlled by labor

Table 16. Employees working in the general agriculture off-farm areas, in Washington County, May 1967

Occ. code	Title	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new
219.388	Clerk	0	2	0	0	0	0
209.388	Clerk, produce	0	4	0	0	0	0
407.884	Grounds keeper	1	0	0	0	0	0
183.118	Manager	2	0	0	0	0	0
620.281	Mechanics	4	0	0	0	0	0
406.884	Nursery worker	4	2	2	0	0	0
163.118	Potato pit mgr.	2	0	0	0	0	0
529.687	Potato sorters	2	0	7	0	0	0
929.128	Produce, fruits & veg. warehouse foreman	4	4	0	0	10	10
451.781	Trapper, government	1	0	0	0	0	0
905.883	Truck driver	30	0	0	0	0	0
922.887	Warehouse workers	36	0	0	0	0	0
859.782	Well driller	1	0	0	0	0	0
869.887	Well driller helper	2	0	1	0	0	0
	Totals	89	12	10	0	10	10

union policies in the four counties of this survey. There are some opportunities in the nursery industry in Washington County.

SUMMARY AND CONCLUSIONS

Summary of Objectives

The objectives of this study were to gather information concerning the off-farm agricultural occupations of Millard, Beaver, Iron and Washington Counties.

A list was made of present and anticipated number of employees in those occupations with the numbers involved in full-time, part-time, and female work.

Occupations with similar backgrounds were clustered into four main areas. These were further classified into individual jobs.

Comments were made concerning the competencies needed for entry and satisfactory performance in these occupations.

Some of the characteristics of these occupations as to salary, required experience, labor laws and education requirements were reported.

An attempt was made to identify all present and emerging off-farm agricultural occupations for which vocational agricultural education should be available.

Table 17. Summary of business firms and individuals surveyed in Millard, Beaver, Iron, and Washington Counties

County	Animal science	Farm machinery, etc.	Agricultural services	General agriculture
Millard	7	17	8	7
Beaver	6	5	8	3
Iron	10	9	10	6
Washington	5	5	9	5
Totals	28	36	35	11

Table 18. Summary of tables

Occupational areas	Full-time	Total female	Part-time	2 yrs. hence	5 yrs. hence	Total new	Per cent of labor	Per cent new labor
Livestock, dairy and poultry	83	2	104	0	-1	-1	18	0
Farm machinery, etc.	92	5	54	7	12	19	14	8
Agric. services	156	32	206	94	64	158	37	67
General agric.	138	14	182	0	60	60	31	25
Totals	479	53	546	101	135	236	100	100

The author noted each county in the area surveyed had many similar occupations and each had its own distinct problem differences.

Many of the opportunities in Millard county were in the professional service area. Namely: Forest Service, Soil Conservation Service and the

Bureau of Land Management. College degrees are required to enter these professions. Encouragement for students to continue their education is evident by the salaries, tenure and retirement of these services.

The low income occupations are filled by personnel with little or no training beyond a high school education. This training is usually done on the job.

Beaver County's survey indicated that a number of jobs were developed by self-employed individuals. Buying, and selling of livestock, furnishing rodeo livestock, and custom meat slaughter, and cutting of meats. Agricultural services offer opportunities for employment in the area. Agricultural mechanics offered an area for some employment. The cutting of cedar posts and Christmas trees is a growing business in this area.

The agricultural and professional areas in Iron County offered the most opportunities for summer employment, for those training in the respective field of employment. This area also furnishes part-time employment for other employees. The agricultural mechanics area indicated some opportunities were available in this field for those who prepared themselves. Part-time employment in the potato industry furnished supplemental farm incomes.

In Washington County, the study indicated part-time employment was available in three areas of employment. Turkey processing, potato marketing, and feed mill employment offered the largest number of available jobs. The opportunities in the professional areas are limited and are dependent upon the future development of the Dixie Reclamation Project.

Correlating the survey study, the author concluded personal contact was a good technique to secure needed information. Also, telephoning the businesses proved to be a successful and time conserving method of securing desired information. Obtaining data through correspondence, an interesting observation was noted. Business of off-farm agricultural occupations located where higher educational institutions are established a quick response was noted as compared to other areas, in which virtually, no reply came by correspondence, until contacted personally.

All but one person surveyed were cooperative in furnishing the desired information.

Employers preferred employees with rural background but it was not essential for employment. They considered it valuable to be able to have a speaking knowledge of the business served.

The author traveled over 1100 miles in making this survey.

RECOMMENDATIONS

Vocational agriculture is a component of general education, tending to strengthen the whole education process. It complements the instruction in other subjects by providing opportunities for practical application. The strong emphasis on work experience, "learning by doing" should be maintained as the core of the program. The values attained through this practical experience, such as good work habits, decision making, ability, and responsibility are lifetime assets.

A survey should be made in each high school center, to gather data concerning local needs, so that a correct impression can be made in determining the needs of training for off-farm agricultural occupations. All enrollees in off-farm agricultural occupation classes should be placed with agricultural businesses for work experience.

Based upon the experience of the author an advisory council is an important functional part of the vocational agriculture program and should be used by the teacher to make the program a success.

Students in the area surveyed have opportunities in the professional field of Forestry, Land Management, Soil Conservation, and Wildlife Conservation. Also, agricultural mechanics offer opportunities for employment and general agriculture business should be given to students in high school vocational agriculture classes who plan to enter these off-farm agricultural occupations. Leadership opportunities through the Future Farmers of America

organization should be a part of the off-farm agricultural training program for those engaged in this pursuit.

Any educational programs related to occupational life are dependent upon development of schools that are closely identified with the community it serves.

LITERATURE CITED

Bass, B. C. 1965. Inadequate Number of Students Receiving Vo-Ag Training in Virginia. The Agricultural Education Magazine 37:97.

Bjoraker, Walter. 1965. Opportunities for Agricultural Education--Heard Among Agriculturalists at the Convention. American Vocational Journal 40:21-22.

Blackburn, John and Dawson, Cleburn C. 1961. Need for Training for Non-Farming Agricultural Occupations. Vocational Division. North Carolina Department of Public Education. Raleigh, North Carolina. p. 21-22.

Clark, Raymond M. 1960. Training for Non-farm Agricultural Occupations. Agricultural Education Magazine. 38:88-89.

Clark, Raymond M. 1962. The Nature of Non-farm Agricultural Occupations. New Dimensions In Public School Education in Agriculture. Interstate Printers and Publishers, Danville, Illinois. p. 9.

Conant, James B. Dr. 1959. The American High School Today. McGraw-Hill, New York.

Eaton, Theodore H. 1923. Vocational Education in Farming Occupations. Lippincotts Rural Education Series. Philadelphia, Pennsylvania. p. 61.

Fick, Vincent and Wotowiec, Peter. 1963. Vocational Horticulture in Cleveland. American Vocational Journal 38:14-15.

Fraser, George E. 1965. A Four Phase Curriculum for Farm Related Occupations. The Agricultural Education Magazine 37:220.

Hoover, Norman K. 1962. Teaching About Agricultural Occupations: How to Begin. Agricultural Education Magazine 37:220.

Johnson, Floyd. 1963. A Vocational Agriculture Teacher Looks at the Panel Report. Report of a National Seminar on Agricultural Education. Ohio State University. Columbus, Ohio. p. 89-90.

Juergenson, Elwood M. 1953. Lets Bring Vo-Ag Up-To-Date. Agricultural Education Magazine 26:16-17.

Kopf, Robert A. 1965. We Adjust Our Program to Urbanization. The Agricultural Education Magazine 37:62-63.

Linson, Marvin G. 1964. Handbook for Developing and Operating Agricultural Occupations Program. Colorado State Board for Vocational Education. Colorado State University. Fort Collins, Colorado.

Matthews, Lester O. ND. General Agriculture in Los Angeles City Secondary School. Los Angeles City School District, Division of Secondary Education p. 1-7. (Mimeographed)

Mays, Arthur B. 1948. Principles and Practices of Vocational Education McGraw-Hill, New York. p. 119.

Mobley, M. D. Dr. 1964. Latest Word From Washington. American Vocational Journal. 39:5-6.

Nichols, Mark. 1956. Agribusanics -- Can This Be One of the Answers? Agricultural Education Magazine 28:224.

Olsen, Lee E. 1965. A Study of the Off-farm Agriculture Occupations of North Davis, Morgan, and Weber Counties of Utah and a Recommended Program to Meet Educational Needs. Master Thesis. Utah State University. Logan, Utah.

Perkins, Carl. 1963. Vocation Education Public Law 88-210, 88th Congress. H. R. 4955, December 18, 1963. Selected Education Acts of 1963 prepared for the subcommittee on Education of the Committee on Labor and Public Welfare United States Senate. U. S. Government Printing Office, Washington. p. 67, 88.

Phipps, Lloyd. 1959. Purpose of Agriculture. Agriculture Education Magazine 32:19.

Schank, Dean R. 1964. A Study of the Off-farm Agriculture Occupations of Utah, Salt Lake, and South Davis Counties to Determine Educational Needs. Master Thesis. Utah State University. Logan, Utah.

Silvard, C. D. 1963. Agriculture - Abundance or Shortage: Report of a National Seminar on Agricultural Education. Ohio State University. Columbus, Ohio. p. 121.

Sparrow, Richard L. 1964. Exploring Farm Related Occupations. Agricultural Education Magazine 36:288-9.

Stimson, Rufus W., and Lathrop, Frank W. 1954. History of Agricultural Education of Less Than College Grade in the United States. Vocational Division Bulletin No. 217. Agricultural Series No. 55. p. 506.

Sutherland, S. S. 1956. Lets Quit Kidding Ourselves. Agricultural Education Magazine. 28:227.

Taft, Jesse A. 1963. Meeting Agriculture Educational Needs in Urban Areas. Report of a National Seminar on Agriculture Education. Design for the Guture. Ohio State University. Columbus, Ohio. p. 220.

Taylor, Robert E. 1963. The National Center: A New Dimension in Agricultural Education. American Vocational Journal. 38:16.

Tenny, A. W. 1963. Agricultural Occupations: The Educational Needs In The United States. Agricultural Education Magazine. 35:211.

Wall, Stanley. 1955. Changing The Program of Vocational Agriculture. Agriculture Education Magazine. 27:244.

Willis, Benjamin C. 1963. The Need for Change. Education for a Changing World of Work. Report of the Panel of Consultants on Vocational Education. U. S. Department of Health, Education and Welfare, Office of Education. U. S. Government Printing Office. Washington D. C. p. 223.

Woodin, R. J. 1965. What Parents Want. The Agricultural Education Magazine. 37:163.

APPENDIX

The Vocational Act of 1963, which was passed by Congress, broadens greatly the concept of vocational agriculture. Heretofore, vocational agriculture at the high school level has been designed primarily for young men who planned to farm. The new legislation not only includes the farm boy, but the young man who is training for agricultural occupations off the farm as well as the young man who plans to enter professional agriculture. We realize that in many areas, off-farm agricultural jobs exceed those on the farm.

I am making a survey of the four southern counties, Beaver, Millard, Iron, and Washington, to determine a need for occupational training in the field of agriculture. I would appreciate it if you would take a few minutes and complete the enclosed survey, answering only those questions that apply to you. I have enclosed a self-addressed envelope for your convenience. I would appreciate a prompt reply.

Your truly,

Thales Brown
Vo. Ag. Instr.

jd
Enc.

EMPLOYMENT OPPORTUNITIES AND NEEDED COMPETENCIES
IN
AGRICULTURAL OCCUPATIONS

Form 1

_____ (Code) Interviewer Date _____

I. Company, firm, organization, or agency

A. Name of firm, agency, etc. _____ Code_____

B. Address _____

C. Name of Person interviewed _____

Telephone Number _____

Position of person being interviewed

_____ 1. Owner
_____ 2. Owner - manager
_____ 3. Manager (hired)
_____ 4. Personnel director
_____ 5. Sales Manager
_____ 6. Office Manager
_____ 7. Supervisor (dist., area, etc)
_____ 8. Other

D. Main function of firm, organization, or agency

_____ 1. Sales
_____ 2. Service
_____ 3. Purchasing
_____ 4. Manufacturing
_____ 5. Processing
_____ 6. Wholesaling
_____ 7. Other

E. Major products, service, etc. (specific)

_____

_____

_____

F. Type of business

_____ % of gross income agriculturally oriented

G. Years in business _____

EMPLOYMENT OPPORTUNITIES AND NEEDED COMPETENCIES
IN
AGRICULTURAL OCCUPATIONS

Form 2

Date_____

Interviewer_____ Firm Code_____ (same as Form 1)

Job Title_____ Code_____

Alternative Titles_____

I. Characteristics

A. Total number of employees_____

1. Number of full-time employees_____

2. Number of part-time employees_____

B. Number of employees needing supplemental training

1. Number of full-time employees_____

2. Number of part-time employees_____

C. Level of employment_____(See Code)

Level Code

1. Professional
2. Technical
3. Proprietors and managers
4. Sales
5. Clerical
6. Skilled
7. Semi-skilled
8. Service (unskilled)

D. Monthly salary

Full-time employees			Part-time Employees	
_____	1. Start	(Convert to monthly if paid by week)	_____	1. Start
_____	2. Top		_____	2. Top

E. Outlook for employment

1. Number employed last year_____

2. Anticipated number to be employed next year_____

3. Anticipated number to be employed in 19___ (Five years from date)___

4. Average annual turnover (employment opportunities)_____

II. Requirements for entering the occupation

A. Residential background

_____ 1. Farm Background

_____ 2. Rural, non-farm background

_____ 3. Urban background

_____ 4. No preference

B. Minimum formal education

_____ 1. High school

_____ 2. Post high school or technical school

_____ 3. B.S. degree

_____ 4. M.S. degree

_____ 5. Ph.D. degree

_____ 6. Doesn't matter

C. Age

_____ 1. Minimum

_____ 2. Maximum

D. Labor Union requirements

_____

_____

_____.

E. Labor Laws

F. Work experience required

G. Licensing or certification

H. Other (specify)

III. Activities and duties of job title (job analysis)

(List those major activities and duties that are performed in this job. What does a person in this job do?)

A.

B.

C.

D.

E.

IV. Agricultural enterprises associated with job title

(Which agricultural enterprises are most nearly associated with this job title?)

1._____ Beef Cattle, 2._____ Dairy Cattle, 3._____ Swine, 4._____ Sheep,

5._____ Goats, 6._____ Horses, 7._____ Poultry, 8._____ Corn, (field),

9._____ Potatoes, 10._____ Sugar Beets, 11._____ Wheat, 12._____ Vegetables,

13._____ Melons, 14._____ Tomatoes, 15._____ Barley, 16._____ Oats,

17._____ Rye, 18._____ Sorghums, 19._____ Grasses, 20._____ Alfalfa,

21._____ Sweet Clover, 22._____ Clovers, 23._____ Wild hay, 24._____ Berries,

25._____ Soils, 26._____ Timber, 27._____ Fruits, 28._____ Nursery Stock

29._____ Flowers, 30._____ Canning crops, (other than Tomatoes),

31._____ Other, (list other).

V. Competencies associated with job title

(To what degree are the following competency areas needed for successfully fulfilling this job title?)

Code: 1. Essential 2. Highly desirable 3. Useful 4. Unnecessary

A. Agricultural competencies

1. Plant Science

a._____ Plant Breeding

b._____ Soils and fertilization

c._____ Controlling insects, diseases, and weeds

d,_____ Conservation of natural resources

e._____ Harvesting, storing, marketing, and processing

f._____ Plant identification

g._____ Irrigation and drainage

h._____ Other production practices (specify)_____

i._____ Other (list)

2. Animal Science

   a._____ Selection and breeding

   b._____ Nutrition and feeding

   c._____ Health and sanitation

   d._____ Housing and equipment

   e._____ Marketing and processing

   f._____ Other production practices (specify)_____

   g._____ Other (list)

3. Agricultural business management and marketing

   a._____ Budgeting, records, and analysis

   b._____ Farm financing (credit, insurance)

   c._____ Farm layout

   d._____ Labor management

   e._____ Marketing practices and research

   f._____ Agricultural policy

   g._____ Specialist

   h._____ Other (list)

4. Agricultural mechanization

   a._____ Farm power and machinery

   b._____ Farm buildings and conveniences

   c._____ Rural electrification

   d._____ Soil and water management

   e._____ Agricultural construction and maintenance

   f._____ Other (list)

B. Supporting competencies

_____1. Salesmanship

_____2. Customer relations

_____3. Accounting

_____4. Communications

_____5. Office procedures

_____6. Bookkeeping

_____7. Buying and selling

_____8. Displaying and packaging

_____9. Advertising

____10. Government regulations (taxes, etc.)

____11. Supervisory and management training

____12. Market analysis

____13. Electronics

____14. Auto mechanics

____15. Mechanical drafting and design

____16. Sheet metal work

____17. Building trades

____18. Industrial chemistry

____19. Transportation

____20. Other (specify)

Three Digit Occupational Code Numbers

Professional occupations (codes 0-00 through 0-39)

This group includes occupations that predominantly require a high degree of mental activity by the worker and are concerned with theoretical or practical aspects of complex fields of human endeavor. Such occupations require for the proper performance of the work either extensive and comprehensive academic study, or experience of such scope and character as to provide an equivalent background, or a combination of such education and experience. School teachers, trained nurses, pharmacists, and engineers and typical occupations in this category.

Semi-professional occupations (codes 0-40 through 0-69)

Included in this group are occupations concerned with the theoretical or practical aspects of fields of endeavor that require rather extensive education or practical experience, or a combination of such education and experience for the proper performance of the work; such fields of endeavor, however, are less demanding with respect to background or the need for initiative or judgment in dealing with complicated work situations than those fields which are considered as "professional." Draftsmen, laboratory technicians, photographers, professional entertainers, aviators, athletic coaches, radio announcers, and commercial artists are occupations representative of this division.

Managerial occupations (codes 0-79 through 0-99)

This group includes occupations that are involved primarily with responsible policy-making, planning, supervising, coordinating, or guiding the work-activity of others, usually through intermediate supervisors. Typical of these occupations are managers or presidents of business enterprises, superintendents of construction projects, and purchasing and advertising agents.

Clerical occupations (code 1-00 through 1-49)

This group includes occupations concerned with the preparation, transcribing, transferring, systematizing, or preserving of written communications and records in offices, shops, and other places of work where such functions are performed. Other occupations, such as collectors, telegraph messengers, and mail carriers, although not strictly of this

character are included because of their close relationship to these activities. Most of these occupations are performed by mental and manual processes but a few include a part or in whole the operation of such machines as bookkeeping machines and calculating machines.

Sales occupations (codes 1-50 through 1-99)

Included in this group are occupations concerned with the sale of commodities, investments, real estate, and service, and occupations that are very closely identified with sales transactions even though they do not involve actual participation in such transactions. The magnitude of this group is so comprehensive that both the corner newsboy and the salesman of railroad rolling stock are included, but they have in common the contact with prospective customers with the objective of effecting sales transactions.

Personal service occupations (codes 2-2 through 2-5)

Included in this group are occupations concerned with performing services for persons that require predominately either direct contact or close association with the individual. Typical examples are barbers, waiters, bootblacks, and practical nurses. A few, however, such as kitchen workers and maids in hotels, may have little or no contact with this recipient of the service.

Other service occupations (codes 2-00 through 2-20 and 2-60 through 2-99)

Domestic, protective, and building service occupations are included in this group. Domestic workers perform duties in private homes; building service workers perform routine cleaning of offices, stores, and shops; and protective service workers are concerned with protecting the county or its political units, buildings, other property, and individuals.

Skilled occupations (codes 4-00 through 5-99)

This group includes craft and manual occupations that require predominantly a thorough and comprehensive knowledge of processes involved in the work, the exercise of considerable independent judgment, usually a high degree of manyal dexterity, and, in some instances, extensive responsibility for valuable product or equipment. Workers in these occupations usually become qualified by serving apprenticeships or completing extensive training periods.

Semi-skilled occupations (codes 6-01 through 7-99)

Characteristic of this division is the exercise of manipulative ability of a high order, as in the skilled group, but being restricted to a fairly well-defined work routine. These occupations require the performance of part of a craft or skilled occupation, but usually to a more limited extent. Craft helpers, machine tenders, equipment operators and production-line workers are included in this group.

Unskilled occupations (codes 8-00 through 9-99)

This group includes occupations that involve the performance of simple manual duties which may be learned within a short period of time and which require the exercise of little or no independent judgment. The occupations vary from those involving a minimum of bodily exertion to those characterized by heavy physical work.

Agricultural and forestry occupations (codes 3-00 through 3-49)

The occupations included in this group are those that are directly associated with various phases of horticultural and animal husbandry activities under covered industries. It also includes occupations concerned with the development and care of forests and the growing and gathering of forest products, but does not include logging occupations.

VITA

Thales C. Brown

Candidate for the Degree of

Master of Science

Thesis: Off-Farm Agricultural Occupations of Millard, Beaver, Iron, and Washington Counties in Utah to Determine Educational Needs.

Major Field: Agriculture Education

Biographical Information:

Personal Data: Born at Springville, Utah, September 2, 1920, son of Guy Edward and Sarah Childs Brown; married Edna Wiscombe November 5, 1941; three children--Dean Thales, Phyllis, and James Edward.

Education: Attended elementary school in Springville, Utah; graduated from Springville High School in 1938; attended Brigham Young University in 1938-39; Graduated from Utah State University in 1942; with a major in Animal Husbandry-minor in Agronomy; did graduate work at Utah State University in Agriculture Educatioh. Completed requirements for the Masters of Science degree, specializing in education and agriculture, at Utah State University in 1967.

Professional Experience: 1944 to present, instructor of Vocational Agriculture and Biology of the Parowan High School; 1962-4, secretary of the Utah Vocational Agriculture Teachers Association; 1966-7, vice-president of the U.V.A.T.A.; 1967-8, president of the U.V.A.T.A.

Merit: 1948, Jr. Chamber of Commerce Distinguished Service award Parowan, Utah; 1959, Vocational Agriculture Distinguished award for the state of Utah.