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CURRICULA IMPLICATIONS FOR NON-FARM AGRICULTURAL EMPLOYMENT IN CONNECTICUT.

BY- MASLEY, PHILIP T.
CONNECTICUT STATE DEPT. OF EDUCATION, HARTFORD

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A SURVEY WAS CONDUCTED TO ASCERTAIN OFF-FARM AGRICULTURAL EMPLOYMENT OPPORTUNITIES AND IDENTIFY DISTRIBUTION OF THOSE OCCUPATIONS OR JOB CLUSTERS WITH IMPLICATIONS FOR VOCATIONAL AGRICULTURE CURRICULUM DEVELOPMENT. OF 1,170 FIRMS IDENTIFIED IN A 25 PERCENT SAMPLE OF TOWNS IN CONNECTICUT, 685 WERE CONTACTED AND 480 USABLE RESPONSES WERE OBTAINED BY INTERVIEWERS USING TWO INTERVIEW SCHEDULES. TWO HUNDRED AND NINETY JOB TITLES WERE IDENTIFIED, PRIMARILY IN THE SEMISKILLED AND SALES LEVEL OF EMPLOYMENT. FOOD HANDLING AND PROCESSING, ORNAMENTAL HORTICULTURE, AND LIVESTOCK INDUSTRY WERE THE OCCUPATIONAL FAMILIES HAVING THE MOST EMPLOYEES. IT WAS PREDICTED THAT OVER 17,000 EMPLOYEES IN THE STATE WOULD NEED AGRICULTURAL COMPETENCIES IN 1970. PROJECTIONS OF NEED FOR EMPLOYEES IN 1970 EXCEEDED 10 TIMES THE ANNUAL NUMBER OF VOCATIONAL AGRICULTURE GRADUATES IN 1965. EMPLOYERS PREFERRED HIRING HIGH SCHOOL GRADUATES BETWEEN 17 AND 24 YEARS OLD WITH SOME OCCUPATIONAL EXPERIENCE AND PROFICIENCY IN AGRICULTURE. BECAUSE 51 PERCENT OF THE FIRMS AND 59 PERCENT OF THE EMPLOYEES WERE LOCATED IN CITIES WITH POPULATIONS OVER 25,000, FOCUS ON PROGRAMS NEAR THESE CITIES SEEMED ADVISABLE. RECOMMENDATIONS WERE MADE FOR THE USE OF FINDINGS OF THE STUDY, ESPECIALLY THOSE RELATING TO CLUSTERS OF JOB AND COMPETENCIES. (JM)

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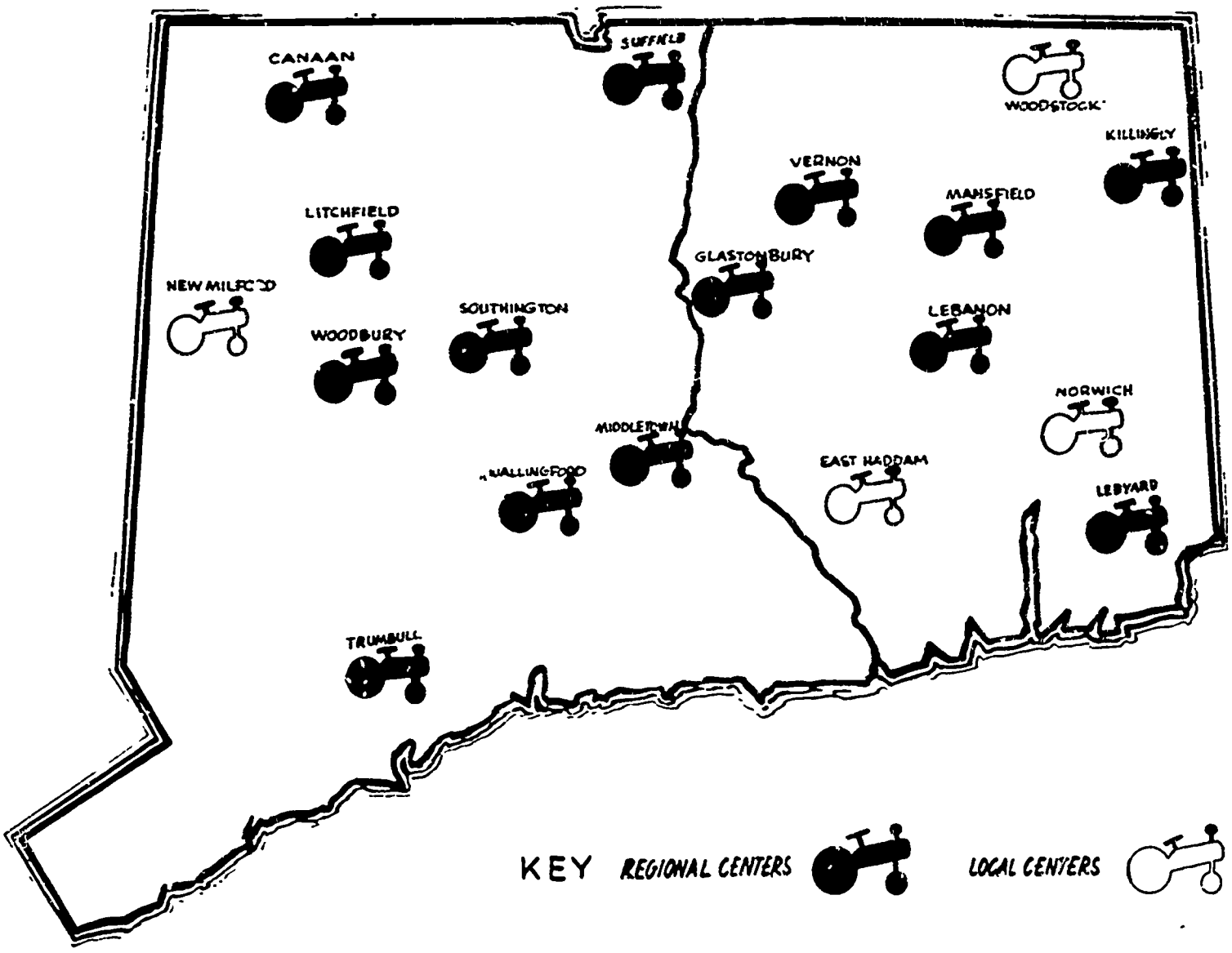
CURRICULA IMPLICATIONS FOR *Connecticut*



NON-FARM AGRICULTURAL EMPLOYMENT

DIVISION OF VOCATIONAL EDUCATION
CONNECTICUT STATE DEPARTMENT OF EDUCATION
HARTFORD, CONNECTICUT

VT001267

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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FOREWORD

More than ten years ago, the Connecticut State Department of Education realized that any agricultural education program limited solely to training for farming was no longer adequate; that 'Agriculture' is involved not only with production but also in the allied fields where agricultural competencies, skills, and knowledges are either necessary or highly desirable.

In 1955, Connecticut, through legislation, provided for the establishment of Regional Vocational Agriculture Centers based on this broadened concept of what agricultural education should be. With the passage of the Vocational Education Act of 1963, an exciting new pattern for Vocational Agriculture was emerging.

If Connecticut's program in agricultural education were to be realistic in terms of competencies needed and employment opportunities available in the fields allied to agriculture, it was necessary that a detailed study be made which would provide this needed information.

This summary of a doctoral dissertation by Dr. Philip Masley does point out that in this highly industrialized State of Connecticut there are more than 17,000 full-time jobs, plus an additional 5,000 projected over the next five years in fields closely allied to agriculture. Many of these jobs are on the semi-skilled and skilled levels requiring agricultural competencies as well as abilities in such areas as Merchandising, Business Organization, and Management.

In making use of these findings, we in Agricultural Education have the tremendous responsibility in bringing about change in our programs to meet the challenge of the seventies for preparing students for employment in the allied fields of Agriculture.

Llewellyn L. Turner
Consultant
Agricultural Education

CURRICULA IMPLICATIONS FOR NON-FARM AGRICULTURAL EMPLOYMENT IN CONNECTICUT

by

Philip T. Masley

Consultant in Research

Research Coordinating Unit

Bureau of Vocational Services

September, 1966

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DEFINITION OF TERMS

The following definitions are necessary to clarify some of the basic concepts as they relate to the study:

1. Agricultural occupation. An agricultural occupation is one in which the worker needs some competency in one or more of the primary areas of plant science, animal science, soil science, agricultural mechanization and agricultural business management.

2. Non-farm agricultural occupations. Non-farm agricultural occupations are limited to those which in the opinion of the employer require the employee to possess agricultural competence, but are occupations other than farming or ranching.

3. Job Cluster. A job cluster is formed by grouping job titles for each of eight occupational families in one of nine levels of employment. (See Pages 30-45)

4. Competency Cluster. A competency cluster is composed of from two to seven competencies commonly regarded as closely related. (See Pages 46-47)

INTRODUCTION -

In February 1961 the late John F. Kennedy directed the Secretary of Health, Education and Welfare to appoint an advisory body drawn primarily from the education profession, labor, industry and agriculture. This advisory body, commonly known as the Panel of Consultants on Vocational Education, was charged with the responsibilities of reviewing and evaluating the current National Vocational Education Acts and making recommendations for improving and redirecting the programs set forth by the Acts.

A recommendation included in the Panel's summary report pertaining to some areas of non-farm agricultural occupations was that vocational agriculture under Federal reimbursement should broaden its program to include instruction and increased emphasis on management, finance, farm mechanization, conservation, forestry, transportation, marketing products of the farm, and other similar topics.

As a result of the Panel's recommendation, the National Vocational Education Act of 1963 amended the Smith-Hughes and George-Barden Acts to permit Federal funds to be expended in agricultural training programs for non-farm agricultural occupations for which knowledge and skill of agricultural subjects are involved.

STATEMENT OF THE PROBLEM

The purpose of this study was to ascertain non-farm agricultural employment opportunities in Connecticut and to identify distributions of those occupations or job clusters which have potential with regard to curriculum developments in vocational agriculture. More specifically the purposes of this study were:

1. To determine the occupational data pertaining to non-farm agricultural occupations in Connecticut:
   a. Job titles, present employment numbers, trends of annual entries into non-farm agricultural occupations.
   b. Competencies needed for entry and advancement into these agricultural occupations.
   c. Job characteristics, age, labor laws, union restrictions, educational requirements and experience, certification and licensing.
   d. Relationship of non-farm agricultural occupations in an area and density of populations.
2. To derive a basis for the development of new instructional programs in non-farm agricultural occupations.
   a. Analysis of common elements in agricultural occupations as a basis for instruction.
   b. Projection of the needs for number and levels of programs in Connecticut.
   c. Identification of occupational areas for which pilot programs of instructions should be developed.
   d. Recommendation for guidelines and principles for development of instructional programs.

SUMMARY OF RESULTS

A total of 1170 firms were identified in the sample area of forty-three towns in Connecticut. Of these 1170 firms, 685 were contacted with 480 useable responses obtained which represented fifty-nine percent of the sample.

Sixty-nine percent of the firms reporting were in operation for ten years or more. The majority of the firms were located in urban communities with populations of 25,000 or more. These firms employed fifty-nine percent of the employees in non-farm agricultural occupations.

Employers and paid interviewers classified job titles in one of nine levels of employment in eight occupational families. The occupational families included in this study were: (1) Agricultural and Farm Service, (2) Crops, Forestry and Soil Conservation, (3) Farm Machinery Sales and Service, (4) Farm Supplies and Equipment, (5) Food Handling and Processing, (6) Livestock Industry, (7) Ornamental Horticulture, and (8) Wildlife and Recreation.

There was a total of 290 job titles identified in the study. The largest number of employees per job title were included at the semi-skilled and sales levels of employment in the Food Handling and Processing, Ornamental Horticulture, and Livestock Industry families.

Projections as to the need for employees in non-farm agricultural occupations for the next five years indicated that seventy-two percent would be hired at the semi-skilled level of employment. Likewise, over eighty percent of the part-time employees would be hired at the semi-skilled level.

Projections of the number of full-time employees in Connecticut indicated that over 17,000 (Table 1) needed some knowledge and competency in agriculture. Estimates of the number of full-time employees needed by 1970 requiring competencies in agriculture exceeded ten times the number of annual graduates in Connecticut Programs in 1965.

Employers showed preference in hiring employees with a high school education between seventeen and twenty-four years of age and with some occupational experience. There were indications that farm background, although important in some instances, was not necessary for most employment opportunities in non-farm agricultural jobs. However, seventy-four percent of the employers responding, indicated that proficiency in agriculture was either essential, highly desirable, or useful for gaintul employment. Legal and union restrictions were the largest barriers to employment opportunities.

With regard to offerings in vocational agriculture, most agricultural education departments in Connecticut may consider offerings oriented to the occupational families of Livestock Industry, Ornamental Horticulture, and Food Handling and Processing. Some departments may consider special programs in other areas. Curricula which focus on agri-business, with secondary stress on Agricultural and Mechanical competencies seem indicated (Figure 1).

TABLE I

ESTIMATED CURRENT EMPLOYMENT AND FUTURE DEMAND
FOR FULL-TIME AND PART-TIME EMPLOYEES
WITH COMPETENCIES IN AGRICULTURE
FOR OCCUPATIONAL FAMILIES

Occupational Families	Current Employment		Number of Employees to be Hired by 1970	
	Full-Time	Part-Time	Full-Time	Part-Time
Agricultural and Farm Service	568	156	36	167
Crops, Forestry and Soil Conservation	1200	29	88	15
Farm Machinery Sales and Service	949	146	196	165
Farm Supplies and Equipment	882	90	151	106
Food Handling and Processing *	1108	510	603	1149
Livestock Industry	5852	717	1705	610
Ornamental Horticulture	6129	1965	2197	2536
Wildlife and Recreation	512	1891	328	776
Total	17,200	5504	5304	5524

*Based on a total count of four major food chain stores and eighteen wholesale fruit companies.

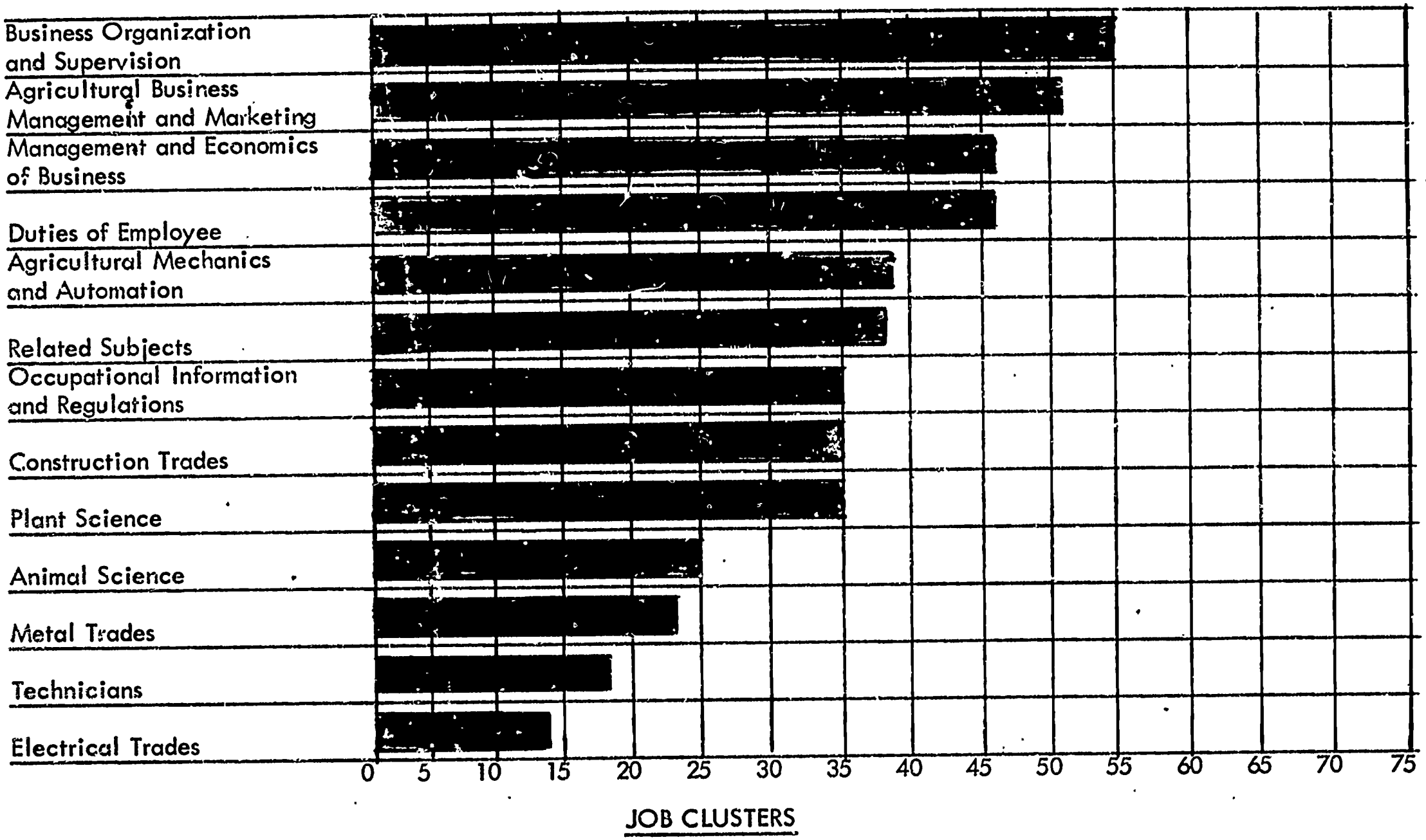

Figure 1. The Number of Job Clusters Associated with Competency Clusters in Nine Levels of Employment for Eight Occupational Families by Level of Standard Scores Ranging from One Standard Deviation Below and Two Standard Deviations Above the Mean.

CONCLUSIONS

1. The large number of persons employed in non-farm agricultural occupations justifies the expansion and development of programs in non-farm agricultural occupations in Connecticut. It was estimated that 17,200 full-time and 5404 part-time employees need some knowledge and competencies in agriculture.

2. Attention should be focused on the development of programs of instructions in non-farm agricultural occupations within close proximity of urban centers. Fifty-one percent of the firms and fifty-nine percent of the employees in the study were located in towns and cities with populations of 25,000 or over.

3. Most of the full-time and part-time employees expected to be hired by 1970 will be at the semi-skilled levels, their prospects for advancement will be enhanced by education in agriculture, which is important to their positions. Therefore, programs should give regard to advancement opportunities as well as entry level jobs.

4. Few or no restrictions with regard to place of residence are needed to regulate admission. There are employment opportunities demanding farm experience or background but the majority of jobs indicate no such need.

5. A high school education is preferred for entry into most full-time non-farm agricultural occupations. Additional training beyond high school is necessary for advancement to higher levels of employment in some instances.

6. Occupational experience as a part of the total instructional program in non-farm agricultural occupations is generally feasible and would aid in eventual full-time employment.

7. For the most part, instructional programs in non-farm agricultural occupations should be planned for older students, perhaps for third and fourth year high school students and adults. In some cases, however, there are advantages for some in obtaining introductory work in earlier years.

8. The largest numbers of employment opportunities in non-farm occupations are found in Ornamental Horticulture, the Livestock Industry, Food Handling and Processing, and Wildlife and Recreation families.

9. Many job clusters require competencies of a similar nature. The most general requirements involve business aspects of the job and specified agricultural competencies.

10. The common competency requirements provide a basis for planning instructional programs in non-farm agricultural occupations to prepare persons for a number of jobs.

11. The development of specific programs requires attention to careful definition of what is included within the competency area.

RECOMMENDATIONS

1. Consideration should be given to curricula offerings for a narrow range of occupations involving one to five job clusters. These require few competencies but a high level of mastery. Curricula of this type may involve specialized instruction for selected youths and adults for a year or less. Job clusters in Farm Supplies and Equipment and the Farm Machinery Sales and Service families are adaptable to curricula of this type.

2. The opportunity should be explored in determining occupational family curricula that are oriented to one or more family groups. The Ornamental Horticulture and the Wildlife and Recreation families indicate a need for employees with agricultural competencies at nearly all levels of employment. Curricula for these families should be designed for preparing persons for careers because of the employment opportunities available.

3. Consideration should be given to cross family curricula of wide spread importance involving several occupational families. Curricula of this type are associated with agri-business. Employees in Food Handling and Processing and the Livestock Industry indicate a need for agricultural competencies and specialized instruction in business. Curricula for these employees should be planned cooperately with the business and agriculture departments on the secondary level.

4. Multiple teacher departments in Connecticut should develop instructional programs for a variety of non-farm agricultural occupations. The programs developed should be based on the employment opportunities in the community and availability of work experience.

5. The State Department of Education should plan for a minimum of 1000 students enrolled in the program of vocational agriculture in order to meet the needs of present and future employees desiring competencies in agriculture.

6. Care must be exercised in coordination and initiating new programs in vocational agriculture. Policies and operational guidelines should be established by the State Department of Education before new programs are developed.

7. Based on information obtained from major chemical companies curricula should be developed in areas of biological science, business, and agriculture. The agricultural chemical industry has shown a need for persons trained in this field. Curricula pertaining to the agricultural chemical industry should probably be conducted on the junior college or technical institute level.

RESEARCH PROCEDURE

The selection of towns in Connecticut used in this study was effected through a system of random numbers. A twenty-five percent sample of towns was selected from each of the designated sixteen regions as developed by the State Department of Education. The sample included a total of forty-three towns with a population representation of 680,031 people.

Paid interviewers were employed in conducting the study. Two interview schedules, Forms I and II were developed for the purpose of obtaining data on employment opportunities and needed competencies in non-farm agricultural occupations. The basic design of Forms I and II was patterned from work of the Research Coordinators Conference on Agricultural Occupations at Ohio State University. Forms I and II were pre-tested by the paid interviewers under field conditions. Forms I and II are in Appendix A.

The yellow pages in the telephone directories were used as a main source in locating categories of firms in non-farm agricultural occupations in Connecticut. A jury made up of key personnel in the State was used to determine the listing of categories of firms which were judged likely to employ persons in non-farm agricultural occupations.

Vocational agricultural teachers in fifteen of the sixteen regions in Connecticut cooperated in the study. The teachers were asked to compile all firms listed under the categories previously selected by the jury. The instructors also included firms not previously identified which were known to employ people with agricultural competencies.

The principal investigator contacted some agencies on a State-wide basis. These agencies were made to correspond to a twenty-five percent sample. The number of employees in these firms was reduced to twenty-five percent of the original total.

Statistical treatment of the firms listed under categories was necessary in order to reduce the size of the initial sample. A minimum large scale sampling technique was utilized in this study. If a major category, previously selected by the jury included less than thirty firms, the entire lot was selected to be interviewed. If a category contained more than thirty firms for the forty-three towns the entire number was recorded but only thirty firms were selected to be interviewed. The selected thirty firms were obtained by alphabetizing the forty-three towns and numbering the firms consecutively in the categories. A table of random numbers was then used to determine the actual sample.

A procedure was also used in the study to remove categories of firms which did not employ persons needing a knowledge of agriculture. If six consecutive visits by interviewers to firms revealed no non-farm agricultural occupations, the category was removed from the sample.

The firms utilized in this study were classified into occupational families. Employees in the eight occupational families were then classified into one of nine occupational levels of employment. Employers in these firms helped interviewers with classification of employees in the various levels of employment. Changes in the classification of employees with regard to level of employment were made by the investigator only after consultation with the interviewers. The classification system and levels of employment were patterned after the work of the Research Coordination Conference at the Ohio State University. Two changes were made, however; the Food Handling and Processing family was added, and the Agricultural Service and Farm Service were combined.

The rationale for the selection of clusters was that curriculum choices in vocational agriculture in secondary and technical schools generally rest upon the following assumptions: (1) careers as well as jobs are open to students who are successful in the program; (2) the number of employment opportunities are substantial; and (3) there is a substantial body of teaching content for these jobs. For these reasons it seemed appropriate that an initial study of alternatives in curriculum should not concentrate on job titles, single skills or competencies but rather should involve large units.

Major emphasis was given to two primary units, a job cluster and a competency cluster (Appendix A). A job cluster is formed by grouping job titles for each of eight occupational families into one of nine levels of employment. These eight occupational families and levels of employment offer a potential number of seventy-two job clusters. The competency cluster is composed of from two to seven competencies commonly regarded as closely related. A total of thirteen competency clusters and sixty competencies was utilized in this study.

A measure of degree of competency was determined for the potential seventy-two job clusters. The measure of degree or percent of competency was determined by the following procedure: (1) The total number of employer responses for each job cluster was multiplied by the total number of competencies in the competency cluster and (2) the product was divided into the actual responses given by employers for competencies desired in the competency cluster for jobs in the job cluster. The percent or degree of competency was then multiplied by the number of employees in the job cluster. These two factors, number of employees and degree of competency were multiplied to obtain a curriculum index.

To facilitate comparisons, these curriculum indices, were organized to form a double matrix as standard scores for both rows (seventy-two job clusters) and columns (thirteen competency clusters). This was done primarily to determine the following: (1) the relative importance of thirteen competency clusters to a job cluster and (2) the relative importance of each competency cluster to seventy-two job clusters.

Two sets of standard scores were used in order to obtain a two-dimensional evaluation of the data. The first set of standard scores designated as A are read for rows. This constitutes a way of comparing thirteen competency clusters to each job cluster. The second set of standard scores designated as B are read for columns. This constitutes a way of comparing the relative need of employees in seventy-two job clusters for a particular competency cluster.

The following levels of standard scores were used in the study: A70-B65, A65-B60, A55-B60, A45-B60, A40-B55 and A40-B40. At the A40-B40 level, only those competencies identified as agricultural were included at this level. Standard scores designated as A are the same with regard to number of employees in the job cluster, differing only in degree of competency required. Standard scores designated as B are different in terms of numbers of employees in each job cluster and degree of competency required.

MAJOR FINDINGS

Employment Opportunities and Prospects - Summary of Results

1. A total of 1170 firms were identified in the sample area of forty-three towns in Connecticut. Of these 1170 firms, 685 contacts were made and 480 useable responses were obtained by interviewers. These 685 contacts represented 59 percent of the 1170 firms in the sample.

2. Fifty-one percent of the firms employing persons in non-farm agricultural occupations were located in urban communities with populations of 25,000 or over. These firms employed a total of fifty-nine percent of the full-time employees in the study.

3. Sixty-nine percent of the 375 firms reporting in the study were in operation for ten years or more. The Food Handling and Processing and Farm Machinery Sales and Service families showed an increase of new firms with twenty-one and eighteen percent, respectively.

4. The larger communities generally employ more people per firm than the suburban and rural areas in the state. The Livestock Industry and Crops, Forestry and Soil Conservation families include the largest average number of employees per firm. The urban communities include an average of more people per firm than either the suburban or rural areas. Two exceptions, however, are noted: Crops, Forestry and Soil Conservation and Farm Machinery Sales and Service, which include an average of twenty-five and five employees respectively, per firm.

5. There was a total of 290 job titles identified in the study. The largest number of job titles was included in the semi-skilled job clusters in the Ornamental Horticulture and Livestock family.

6. The largest average number of employees per job title was included in job clusters at the semi-skilled levels with 114 in Food Handling and Processing, fifty in Ornamental Horticulture, and forty-three in sales in the Livestock Industry family.

7. The total number of full-time and part-time workers employed in 480 firms was 3475 and 1081, respectively. The largest number of these full-time and part-time employees was employed at the semi-skilled level.

8. Employers' estimates of full-time and part-time employees needed by 1970 in these 480 firms were 1064 and 1089 respectively. Most of the new and replacement employees anticipated by employers would be hired at the semi-skilled levels. Seventy-two percent of the full-time employees were included in the semi-skilled job clusters. Likewise, eighty-one percent of the part-time employees were included in the semi-skilled job clusters.

9. Projections for the number of full-time employees in the estimated 3276 firms in the State were over 23,000. Of these 23,000 employees over 17,000 needed some knowledge of agriculture.

10. Estimates for the number of full-time employees needed by 1970 requiring competencies in agriculture exceeds ten times the number of annual graduates in vocational agriculture in 1965.

Employers' Preferences - Summary of Results

1. Employers indicated a preference for employees with a high school education for fifty-nine percent of the jobs in the study. However, eighty-three percent of ths jobs in this study could be entered by employees with a high school education or less (Table II).

2. Thirty-nine percent of the jobs in the study required no experience for entry. These jobs were predominantly at the semi-skilled levels. Respondents for sixty-one percent of the jobs indicated preference for employees with experience (Table III).

3. Most of the respondents expressed no preference with regard to type of residential experience of employees. Seventy-three percent of all jobs reported by employers required no particular kind of residential experience (Table IV).

4. Employers indicated that proficiency in agriculture was either essential, highly desirable, or useful for seventy-four percent of the jobs in the study (Table V).

5. The largest obstacle with reference to limitations on job entry as indicated by respondents was legal labor restrictions. Union restrictions were reported as a problem for entering eighteen percent of the jobs in Farm Machinery Sales and Service (Table VI).

6. The data collected on minimum age requirements for job entry indicate that employers prefer employees between the ages of seventeen and twenty-four for sixty-six percent of the jobs in the study (Table VII).

TABLE II

MINIMUM EDUCATION PREFERRED BY EMPLOYERS OF NON-FARM AGRICULTURAL EMPLOYEES

Minimum Preferred Educational Level	Percentage of Respondents
Elementary	19
Junior High	5
High School	59
Post High School	3
Some College	6
College Degree	7
Doctorate	1
TOTAL	100

TABLE III

NECESSARY EXPERIENCE PREFERRED BY EMPLOYERS OF NON-FARM AGRICULTURAL EMPLOYEES

Experience Necessary in Months	Percentage of Respondents
None	39
1	*
2 - 3	2
4 - 6	3
7 - 12	11
13 - 18	5
19 - 24	13
25 - 30	*
31 - 36	2
Over 36	25
TOTAL	100

*Less than one percent

TABLE IV

AGRICULTURAL PROFICIENCIES PREFERRED BY EMPLOYERS OF NON-FARM AGRICULTURAL EMPLOYEES

Proficiencies	Percentage of Respondents
Essential	13
Highly Desirable	22
Useful	39
Unnecessary	26
TOTAL	100

TABLE V

RESIDENTIAL EXPERIENCE PREFERRED BY EMPLOYERS OF NON-FARM AGRICULTURAL EMPLOYEES

Residential Experience	Percentage of Respondents
Farm	19
Rural Non-Farm	3
Suburban	5
No Preference	73
TOTAL	100

TABLE VI

MINIMUM AGE PREFERRED BY EMPLOYERS OF NON-FARM AGRICULTURAL EMPLOYEES

Minimum Age Requirement	Percentage of Respondents
Under 14	*
15 - 16	15
17 - 19	34
20 - 24	32
25 - 29	16
Over 30	2
TOTAL	100

* Less than one percent

TABLE VII

EMPLOYERS' LIMITATIONS ON JOB ENTRIES FOR NON-FARM AGRICULTURAL EMPLOYEES

Limitation on Job Entry	Percentage of Respondents
Labor Restrictions Union	4
Labor Restrictions Legal	87
Licensing and Certification	3
Other	6
TOTAL	100

Curricula Determinants - Summary of Results

1. Six associations of job and competency clusters for the Agricultural and Farm Service were at the discriminatory level of A40-B55 or above. All of these associations of job and competency clusters were at the professional level. They included three of the agricultural, two of business, and one of the industrial. Sixteen associations of job and agricultural competency clusters were at the A40-B40 level or above but below the A40-B55 level (Table VIII).

2. Four associations of job and competency clusters for the Crops, Forestry and Soil Conservation family were at the discriminatory level of A40-B55 or above. These associations included the semi-skilled and managerial job clusters. The competency clusters associated with these job clusters were two of the business, one of the agricultural, and one of the industrial. Twenty associations of job and agricultural competency clusters were at the A40-B40 level or above, but below the A40-B55 level (Table IX).

3. The Farm Machinery Sales and Service family included seven associations of job and competency clusters at the discriminatory level of A40-B55 or above. These associations included the managerial, skilled and semi-skilled job clusters. The competency clusters associated with these job clusters were four of the industrial, two of the business and one of the agricultural. Sixteen associations of job and agricultural competency clusters were at the A40-B40 level or above, but below the A40-B55 level (Table X).

4. Four associations of job and competency clusters for the Farm Supplies and Equipment family were at the discriminatory level of A40-B55 or above. These associations included the managerial and sales job clusters. The competency clusters associated with these job clusters were two of the business, one of the agricultural and one of the industrial (Technicians). Twenty-one associations of job and agricultural competency clusters were at the A40-B40 level or above, but below the A40-B55 level (Table XI).

5. Five associations of job and competency clusters for the Food Handling and Processing family were at the discriminatory level of A40-B55 level or above. These associations included the supervisory and semi-skilled job clusters. Thirteen associations of job and agricultural competency clusters were at the A40-B40 level or above, but below the A40-B55 level (Table XII).

6. The Livestock Industry family included eighteen associations of job and competency clusters at the discriminatory level of A40-B55 or above. These associations included the managerial, supervisory, sales, skilled and semi-skilled job clusters. The competency associated with these job clusters were ten of the business, seven of the agricultural and one of the industrial. Twenty-two associations of job and agricultural competency clusters were at the A40-B40 level or above, but below the A40-B55 level (Table XIII).

7. Twenty-eight associations of job and competency clusters for the Ornamental Horticulture family were at the discriminatory level of A40-B55 or above. These associations included the protessional, managerial, supervisory, sales, skilled and semi-skilled job clusters. The competency clusters associated with these job clusters were twelve of the agricultural, nine of the business and seven of the industrial. Fifteen associations of job and agricultural competency clusters were at the A40-B40 level or above, but below the A40-B55 level (Table XIV).

8. Fifteen associations of job and competency clusters for the Wildlife and Recreation family were at the discriminatory level of A40-B55 level or above. These associations included the professional, supervisory, skilled and semi-skilled job clusters. Competency clusters associated with these job clusters were eight of the industrial, four of the agricultural, and three of the business. Fourteen associations of job and agricultural competency clusters were at the A40-B40 level or above, but below the A40-B55 level (Table XV).

9. Eighty-seven associations of job and competency clusters were identified at the A40-B55 level or above. These eighty-seven associations of job and competency clusters have important implications for curriculum development in vocational agriculture on a state-wide basis (Figure II).

10. A total of 138 associations of job and agricultural competency clusters * were identified at the A40-B40 level or above, but below the A40-B55 level. This was done in order to determine to what extent agricultural competency clusters were needed by employees in job clusters for eight occupational families (Figure II).

11. A total of 462 associations of job and competency clusters were identified for all levels of employment for all occupational families. The competency cluster Business Organization and Supervision was associated with the greatest number of job clusters with a total of fifty-five. The competency cluster Electrical Trades was associated with the least job clusters with only fourteen (Figure II).

*Agricultural competency clusters include the four designated as Agricultural and also "Technician" in the industrial group.

TABLE VIII

ASSOCIATIONS OF JOB AND COMPETENCY CLUSTERS BY LEVEL OF STANDARD SCORES FOR THE AGRICULTURAL AND FARM SERVICE FAMILY

Level of Employment or Job Cluster	Standard Scores A Indicate Relative Importance of a Competency Cluster for a Job Cluster	Standard Scores B Indicate Relative Importance of a Competency Cluster for All Job Clusters	Competency Cluster
1. Professional	A 65	B 60	Related Science
	A 40	B 55	Animal Science
	A 40	B 55	Agricultural Business Management and Marketing
	A 40	B 55	Occupational Information and Regulations
	A 40	B 55	Management and Economics of Business
	A 40	B 55	Agricultural Mechanics and Automation
	A 63	B 50	Plant Science
2. Technical	A 73	B 52	Animal Science
	A 49	B 45	Agricultural Business Management and Marketing
	A 42	B 44	Farm Mechanics and Automation
3. Service	0	0	
4. Managerial	A 59	B 45	Plant Science
	A 70	B 44	Agricultural Business Management and Marketing
	A 43	B 44	Farm Mechanics and Automation
5. Supervisory	A 48	B 45	Plant Science
	A 59	B 44	Agricultural Business Management and Marketing
6. Sales	0	0	
7. Clerical	A 51	B 44	Agricultural Business Management and Marketing
8. Skilled	A 52	B 45	Farm Mechanics and Automation
	A 43	B 43	Agricultural Business Management and Marketing
9. Semi-Skilled	A 72	B 50	Animal Science
	A 50	B 45	Plant Science
	A 42	B 44	Farm Mechanics and Automation
	A 41	B 42	Agricultural Business Management and Marketing

TABLE IX

ASSOCIATIONS OF JOB AND COMPETENCY CLUSTERS BY LEVEL OF STANDARD SCORES FOR THE CROPS, FORESTRY AND SOIL CONSERVATION FAMILY

Level of Employment of Job Cluster	Standard Scores A Indicate Relative Importance of a Competency Cluster for a Job Cluster	Standard Scores B Indicate Relative Importance of a Competency Cluster for All Job Clusters	Competency Cluster
10. Professional	A 65	B 45	Plant Science
	A 55	B 44	Agricultural Business Management and Marketing
	A 41	B 44	Agricultural Mechanics and Automation
	A 42	B 43	*Technicians
11. Technical	A 66	B 46	Plant Science
	A 58	B 46	Agricultural Business Management and Marketing
	A 47	B 46	Agricultural Mechanics and Automation
	A 42	B 44	Animal Science
12. Service	0	0	
13. Managerial	A 40	B 55	Occupational Information and Regulations
	A 58	B 51	Agricultural Business Management and Marketing
	A 42	B 47	Agricultural Mechanics and Automation
14. Supervisory	A 47	B 46	Agricultural Mechanics and Automation
15. Sales	A 48	B 46	Agricultural Business Management and Marketing
	A 40	B 46	Agricultural Mechanics and Automation
16. Clerical	A 41	B 43	Agricultural Business Management and Marketing
17. Skilled	A 61	B 47	Agricultural Mechanics and Automation
	A 43	B 45	Plant Science
	A 43	B 43	Animal Science
	A 48	B 43	Agricultural Business Management and Marketing
	A 43	B 43	*Technicians
18. Semi-Skilled	A 45	B 60	Construction Trades
	A 40	B 55	Agricultural Mechanics and Automation
	A 40	B 55	Business Organizations and Supervision
	A 43	B 45	Agricultural Business Management and Marketing

* This competency cluster refers, in most cases, to the specific competency "quality control" and generally pertains to food or plant products rather than an industrial cluster.

TABLE X

ASSOCIATIONS OF JOB AND COMPETENCY CLUSTERS BY LEVEL OF STANDARD SCORES FOR THE FARM MACHINERY SALES AND SERVICE FAMILY

Level of Employment or Job Cluster	Standard Scores A Indicate Relative Importance of a Competency Cluster for a Job Cluster	Standard Scores B Indicate Relative Importance of a Competency Cluster for All Job Clusters	Competency Cluster
19. Professional	0	0	
20. Technical	A 41	B 49	Technicians
	A 64	B 44	Agricultural Mechanics and Automation
21. Service	A 50	B 42	Agricultural Business Management and Marketing
22. Managerial	A 40	B 55	Management and Economics of Business
	• A 40	B 55	Related Subjects
	A 56	B 54	Agricultural Business Management and Marketing
	A 45	B 51	Agricultural Mechanics and Automation
	A 43	B 46	Plant Science
	A 40	B 45	Occupational Information and Regulations
23. Supervisory	A 51	B 44	Agricultural Business Management and Marketing
	A 41	B 44	Agricultural Mechanics and Automation
24. Sales	A 44	B 48	Agricultural Mechanics and Automation
	A 45	B 46	Agricultural Business Management and Marketing
25. Clerical	A 53	B 44	Agricultural Mechanics and Automation
	A 53	B 43	Agricultural Business Management and Marketing
26. Skilled	A 65	B 60	Metal Trades
	A 55	B 60	Related Subjects
	A 40	B 55	Agricultural Mechanics and Automation
	A 44	B 46	Agricultural Business Management and Marketing
	A 40	B 44	Plant Science
27. Semi-Skilled	A 40	B 55	Metal Trade
	A 43	B 47	Agricultural Mechanics and Automation
	A 40	B 44	Agricultural Business Management and Marketing

TABLE XI

ASSOCIATIONS OF JOB AND COMPETENCY CLUSTERS
BY LEVEL OF STANDARD SCORES FOR THE
FARM SUPPLIES AND EQUIPMENT FAMILY

Level of Employment or Job Cluster	Standard Scores A Indicate Relative Importance of a Competency Cluster for a Job Cluster	Standard Scores B Indicate Relative Importance of a Competency Cluster for All Job Clusters	Competency Cluster
28. Professional	0	0	
29. Technical	A 64	B 45	Plant Science
30. Service	0	0	
31. Managerial	A 40	B 55	Agricultural Business Management and Marketing
	A 40	B 55	Management and Economics of Businesss
	A 40	B 55	*Technicians
	A 55	B 52	Animal Science
	A 50	B 47	Plant Science
32. Supervisory	A 40	B 52	* Technicians
	A 49	B 45	Plant Science
	A 58	B 45	Agricultural Business Management and Marketing
	A 44	B 44	Animal Science
	A 40	B 44	Farm Mechanics and Automation
33. Sales	A 40	B 55	Management and Economics of Business
	A 51	B 51	Animal Science
	A 57	B 49	Plant Science
	A 46	B 49	Agricultural Business Management and Marketing
34. Clerical	A 43	B 45	Plant Science
	A 43	B 44	Animal Science
	A 54	B 44	Agricultural Business Management and Marketing
35. Skilled	A 41	B 44	Plant Science
	A 47	B 44	Farm Mechanics and Automation
36. Semi-Skilled	A 53	B 49	Animal Science
	A 51	B 47	Plant Science
	A 49	B 47	Agricultural Business Management and Marketing
	A 43	B 46	Farm Mechanics and Automation
	A 41	B 43	*Technicians

* This competency cluster refers, in most cases, to the specific competency "quality control" and generally pertains to food or plant products rather than an industrial cluster.

TABLE XII

ASSOCIATIONS OF JOB AND COMPETENCY CLUSTERS BY LEVEL OF THE STANDARD SCORES FOR THE FOOD HANDLING AND PROCESSING FAMILY

Level of Employment of Job Cluster	Standard Scores A Indicate Relative Importance of a Competency Cluster for a Job Cluster	Standard Scores B Indicate Relative Importance of a Competency Cluster for All Job Clusters	Competency Cluster
37. Professional	0	0	
38. Technical	0	0	
39. Service	0	0	
40. Managerial	A 65	B 53	Agricultural Business Management and Marketing
	A 40	B 45	Plant Science
41. Supervisory	A 40	B 55	Occupational Information and Regulations
	A 40	B 55	Duties of Employee
	A 40	B 55	Business Organization and Supervision
	A 48	B 53	Agricultural Business Management and Marketing
	A 41	B 47	*Technicians
	A 41	B 45	Plant Science
42. Sales	A 42	B 44	Plant Science
	A 43	B 42	Agricultural Business Management and Marketing
	A 44	B 40	*Technicians
43. Clerical	A 52	B 43	Agricultural Business Management and Marketing
44. Skilled	0	0	
45. Semi-Skilled	A 65	B 60	Duties of Employee
	A 65	B 60	Business Organization and Supervision
	A 44	B 50	*Technicians
	A 46	B 47	Agricultural Business Management and Marketing
	A 44	B 45	Agricultural Mechanics and Automation
	A 44	B 43	Animal Science

* This competency cluster refers, in most cases, to the specific competency "quality control" and generally pertains to food or plant products rather than an industrial cluster.

TABLE XIII

ASSOCIATIONS OF JOB AND COMPETENCY CLUSTERS
BY LEVEL OF STANDARD SCORES FOR THE
LIVESTOCK INDUSTRY FAMILY

Level of Employment or Job Cluster	Standard Scores A Indicate Relative Importance of a Competency Cluster for a Job Cluster	Standard Scores B Indicate Relative Importance of a Competency Cluster for All Job Clusters	Competency Cluster
46. Professional	A 50	B 44	Animal Science
47. Technical	A 49	B 50	*Technicians
	A 67	B 46	Animal Science
	A 42	B 43	Agricultural Business Management and Marketing
48. Service	A 80	B 46	Animal Science
	A 45	B 44	Plant Science
	A 52	B 43	Agricultural Business Management and Marketing
	A 43	B 43	Agricultural Mechanics and Automation
	A 45	B 40	Technicians
49. Managerial	A 55	B 60	Animal Science
	A 55	B 60	Agricultural Business Management and Marketing
	A 55	B 60	Duties of Employee
	A 55	B 60	Business Organization and Supervision
	A 55	B 60	Management and Economics of Business
	A 45	B 60	Occupational Information and Regulations
	A 40	B 49	*Technicians
	A 40	B 46	Agricultural Mechanics and Automation
50. Supervisory	A 40	B 55	Agricultural Business Management and Marketing
	A 40	B 55	Management and Economics of Business
	A 51	B 49	Animal Science
	A 41	B 49	Technicians
	A 41	B 46	Agricultural Mechanics and Automation

TABLE XIII (Continued)

Level of Employment or Job Cluster	Standard Scores A Indicate Relative Importance of a Competency Cluster for a Job Cluster	Standard Scores B Indicate Relative Importance of a Competency Cluster for All Job Clusters	Competency Cluster
51. Sales	A 65	B 60	Duties of Employee
	A 55	B 60	Agricultural Business Management and Marketing
	A 55	B 60	Business Organization and Supervision
	A 45	B 60	Management and Economics of Business
	A 40	B 55	Related Subjects
	A 42	B 51	Animal Science
	A 40	B 51	Agricultural Mechanics and Automation
52. Clerical	A 56	B 49	Agricultural Business Management and Marketing
	A 40	B 44	Animal Science
53. Skilled	A 40	B 55	*Technicians
	A 45	B 45	Agricultural Mechanics and Automation
	A 45	B 44	Agricultural Business Management and Marketing
	A 44	B 43	Animal Science
54. Semi-Skilled	A 65	B 60	Business Organization and Supervision
	A 55	B 60	Animal Science
	A 55	B 60	Duties of Employee
	A 40	B 55	Agricultural Business Management and Marketing
	A 43	B 51	Agricultural Mechanics and Automation

* This competency cluster refers, in most cases, to the specific competency "quality control" and generally pertains to food or plant products rather than an industrial cluster.

TABLE XIV

ASSOCIATIONS OF JOB AND COMPETENCY CLUSTERS BY LEVEL OF STANDARD SCORES FOR THE ORNAMENTAL HORTICULTURE FAMILY

Level of Employment or Job Cluster	Standard Scores A Indicate Relative Importance of a Competency Cluster for a Job Cluster	Standard Scores B Indicate Relative Importance of a Competency Cluster for All Job Clusters	Competency Cluster
55. Professional	A 55	B 60	*Technicians
	A 74	B 48	Plant Science
	A 40	B 44	Agricultural Mechanics and Automation
	A 40	B 43	Agricultural Business Management and Marketing
56. Technical	A 66	B 49	Plant Science
	A 43	B 47	*Technicians
	A 47	B 45	Agricultural Business Management and Marketing
57. Service	0	0	
58. Managerial	A 65	B 60	Duties of Employee
	A 55	B 60	Agricultural Business Management and Marketing
	A 55	B 60	Plant Science
	A 45	B 60	Occupational Information and Regulations
	A 45	B 60	Management and Economics of Business
	A 45	B 60	Related Subjects
	A 40	B 55	Agricultural Mechanics and Automation
59. Supervisory	A 55	B 60	Related Subjects
	A 40	B 55	Occupational Information and Regulations
	A 40	B 55	Plant Science
	A 40	B 55	Agricultural Business Management and Marketing
	A 45	B 54	Agricultural Mechanics and Automation
60. Sales	A 40	B 55	Duties of Employee
	A 52	B 51	Agricultural Business Management and Marketing
	A 61	B 50	Plant Science
	A 40	B 47	*Technicians
	A 40	B 45	Agricultural Mechanics and Automation

TABLE XIV (Continued)

Level of Employment or Job Cluster	Standard Scores A Indicate Relative Importance of a Competency Cluster for a Job Cluster	Standard Scores B Indicate Relative Importance of a Competency Cluster for All Job Clusters	Competency Cluster
61. Clerical	A 67	B 47	Plant Science
	A 53	B 47	Agricultural Business Management and Marketing
62. Skilled	A 65	B 60	Plant Science
	A 45	B 60	Related Subjects
	A 40	B 55	Duties of Employee
	A 40	B 55	Business Organization and Supervision
	A 40	B 55	Construction Trades
	A 40	B 55	Agricultural Mechanics and Automation
	A 40	B 51	*Technicians
63. Semi-Skilled	A 70	B 65	Plant Science
	A 65	B 60	Business Organization and Supervision
	A 45	B 60	Construction Trades
	A 45	B 60	Metal Trades
	A 45	B 60	Duties of Employee
	A 45	B 60	Agricultural Mechanics and Automation
	A 45	B 60	Agricultural Business Management and Marketing
	A 40	B 55	*Technicians
	A 40	B 55	Related Subjects
	A 46	B 52	Management and Economics of Business

* This competency cluster refers, in most cases, to the specific competency "quality control" and generally pertains to food or plant products rather than an industrial cluster.

TABLE XV
ASSOCIATIONS OF JOB AND COMPETENCY CLUSTERS BY LEVEL OF STANDARD SCORES FOR THE WILDLIFE AND RECREATION FAMILY

Level of Employment or Job Cluster	Standard Scores A Indicate Relative Importance of a Competency Cluster for a Job Cluster	Standard Scores B Indicate Relative Importance of a Competency Cluster for All Job Clusters	Competency Cluster
64. Professional	A 40	B 55	Occupational Information and Regulations
	A 67	B 54	Animal Science
	A 64	B 49	Plant Science
	A 45	B 49	Agricultural Business Management and Marketing
65. Technical	A 40	B 47	Plant Science
66. Service	0	0	
67. Managerial	A 72	B 46	Plant Science
	A 47	B 45	Agricultural Mechanics and Automation
	A 47	B 44	Animal Science
	A 50	B 44	Agricultural Business Management and Marketing
68. Supervisory	A 55	B 60	Agricultural Mechanics and Automation
	A 45	B 60	Occupational Information and Regulations
	A 45	B 60	Construction Trades
	A 40	B 55	Plant Science
	A 40	B 55	Related Subjects
	A 48	B 54	Agricultural Business Management and Marketing
69. Sales	0	0	
70. Clerical	0	0	
71. Skilled	A 65	B 60	Construction Trades
	A 55	B 60	Metal Trades
	A 45	B 60	Electrical Trades
	A 51	B 52	Animal Science
	A 40	B 51	Agricultural Mechanics and Automation
72. Semi-Skilled	A 55	B 50	Plant Science
	A 65	B 60	Plant Science
	A 55	B 60	Construction Trades
	A 55	B 60	Agricultural Mechanics and Automation
	A 45	B 60	Metal Trades
	A 40	B 55	Business Organization and Supervision
	A 40	B 55	Electrical Trades
	A 42	B 48	Animal Science
	A 41	B 47	Agricultural Business Management and Marketing

* This competency cluster refers, in most cases, to the specific competency "quality control" and generally pertains to food or plant products rather than an industrial cluster.

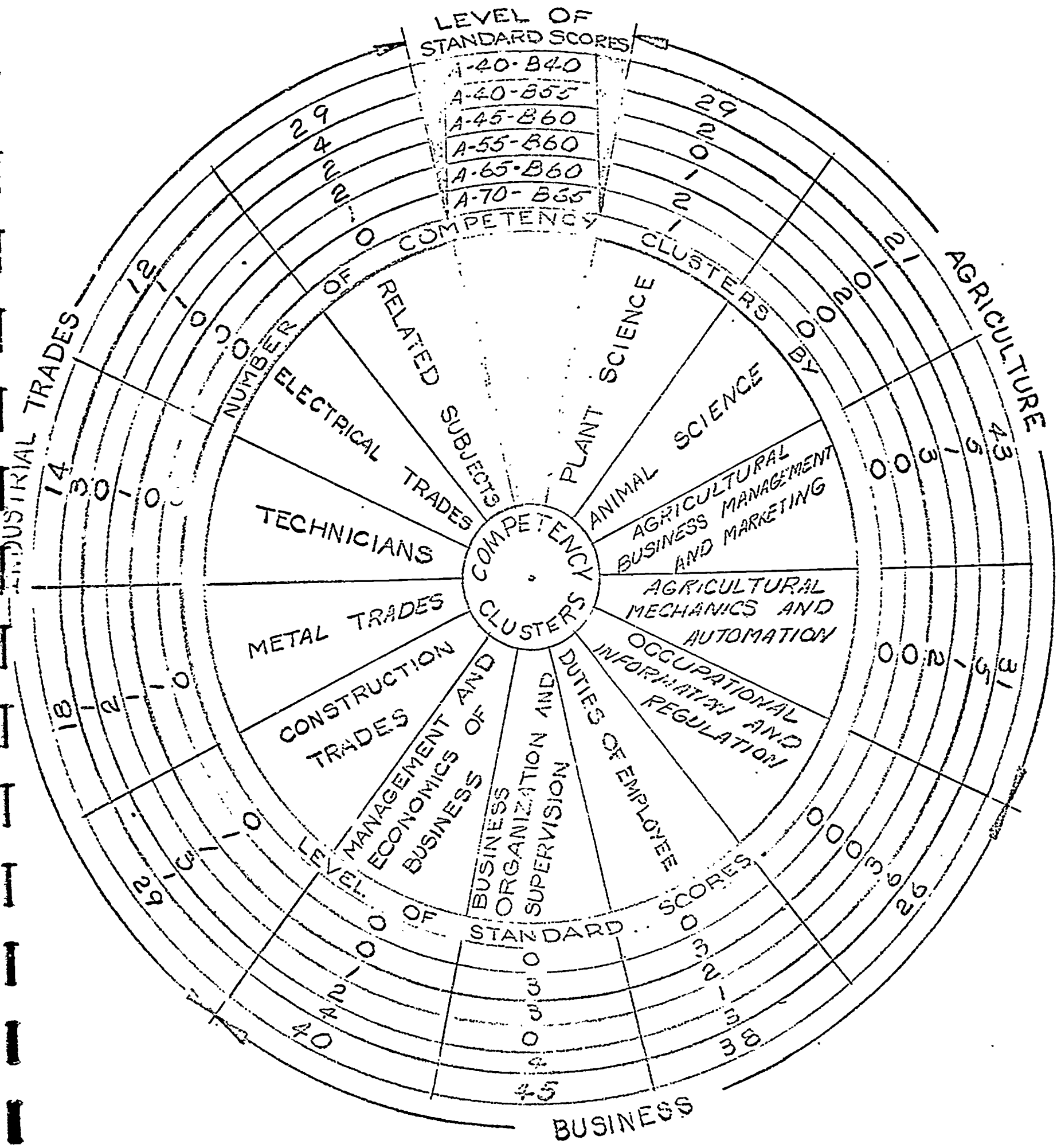

Figure 2. The Number of Job Clusters Associated with Competency Clusters by Level of Standard Scores for Eight Occupational Families

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APPENDIX A

1. Current and Projected Employment by Level of Employment and Job Title for Firms in the Sample

   a. Agricultural and Farm Service
   b. Crops, Forestry and Soil Conservation
   c. Farm Machinery Sales and Service
   d. Farm Supplies and Equipment
   e. Food Handling and Processing
   f. Livestock Industry
   g. Ornamental Horticulture
   h. Wildlife and Recreation

2. Competencies and Competency Clusters

3. Interview Schedules - Forms I and II

CURRENT AND PROJECTED EMPLOYMENT BY LEVEL OF EMPLOYMENT AND JOB TITLE FOR FIRMS IN THE SAMPLE

Level of Employment *		Currently Employed			Expected to be Hired During Next 5 Years		
		Full-Time	Part-Time		Full-Time	Part-Time	
A. Agricultural and Farm Service Occupational Family							
1. Professional							
Agricultural County Agent		6	0		0	0	
Agricultural Engineer		3	0		0	0	
Civil Engineer Soil Conservation		1	0		0	0	
County F.H.A. Supervisor		1	0		0	0	
Entomologist		6	0		0	0	
Landscape Architects		10	0		0	0	
Soil Conservationist		6	0		0	0	
Soil Scientists		2	0		0	0	
Veterinarian		11	0		0	0	
Sub-Totals	46		0	0		0	
2. Technical							
Agricultural Division Chief		1	0		0	0	
Agricultural Inspector		9	0		0	0	
Agricultural Stabilization and Conservation Reporter		2	2		0	5	
Senior Agricultural Inspector		1	0		0	0	
Soil Conservation Technician		3	2		0	0	
Veterinary Technician		4	1		1	1	
Sub-Totals	20		5	1		6	
3. Service		0	0		0	0	
Sub-Totals	0		0	0		0	
4. Managerial							
Custom Operator Manager		1	0		0	0	
Exterminator Manager		2	1		0	0	
Sub-Totals	3		1	0		0	

* Each level of employment for each occupational family constitutes a job cluster.

Level of Employment		Currently Employed				Expected to be Hired During Next 5 Years			
		Full-Time		Part-Time		Full-Time		Part-Time	
5. Supervisory									
Agriculture Stabilization and Conservation Assistant Manager		3		0		1		0	
Sub-Totals	3		0		1		0		
6. Sales		0		0		0		0	
Sub-Totals	0		0		0		0		
7. Clerical									
A.S.C. Office Clerk		3		0		1		0	
Entomologist Clerk, U.S.D.A.		1		0		1		0	
Exterminator Bookkeeper		1		0		0		0	
F.H.A. Office Clerk		1		0		0		0	
Veterinary Receptionists		1		2		1		2	
Sub-Totals	7		2		2		2		
8. Skilled									
Farm Products Inspector		0		1		0		6	
Exterminator		6		1		3		0	
Sub-Totals	6		2		3		6		
9. Semi-Skilled									
Groundsman Veterinary Hospital		0		2		0		1	
Pest Control Aid		0		3		0		1	
Truck Drivers Custom Service		0		6		0		3	
Veterinary Aids		3		1		0		0	
Veterinary Hospital Kennel Worker		7		4		1		9	
Sub-Totals	10		16		1		14		
TOTALS		95		26		8		28	
B. Crops, Forestry and Soil Conservation									
10. Professional									
Foresters		5		0		1		0	
Forestry Fire Control Officer		1		0		0		0	
Forestry Technician		1		0		0		0	
Sub-Totals	7		0		1		0		

Level of Employment		Currently Employed		Expected to be Hired During Next 5 Years	
		Full-Time	Part-Time	Full-Time	Part-Time
11. Technical					
Conservation Officer		1	0	0	0
Forest Ranger II		4	0	1	0
Forest Ranger I		6	0	0	0
Sub-Totals	11	0	1	0	
12. Service		0	0	0	0
Sub-Totals	0	0	0	0	
13. Managerial					
Forest Maintenance and Conservation Manager		5	0	0	0
Lumber Company Assistant Manager		3	0	0	0
Lumber Company Manager		16	2	0	0
Sub-Totals	24	2	0	0	
14. Supervisory					
Forest Maintenance and Conservation Supervisor		3	0	0	0
Lumber Yard Foreman		8	0	0	0
Sub-Totals	11	0	0	0	
15. Sales					
Lumber Company Store Salesman		21	0	0	0
Sub-Totals	21	0	0	0	
16. Clerical					
Lumber Company Bookkeeper and Clerk		7	2	0	3
Sub-Totals	7	2	0	3	
17. Skilled					
Assistant Ranger		1	0	0	0
Conservation Officer		5	0	0	0
Lumber Company Millman		3	0	0	0
Lumber Grader and Scaler		1	0	0	0

Level of Employment		Currently Employed				Expected to be Hired During Next 5 Years			
		Full-Time		Part-Time		Full-Time		Part-Time	
17. Skilled (Continued)									
Lumber Yard Workers		4		0		0		0	
Sawmill Edger		1		0		0		0	
Sawmill Equipment Operator		2		0		0		0	
Sawmill Log Cutter		2		0		0		0	
Sawyer		2		0		0		0	
Sub-Totals	21		0		0		0		
18. Semi-Skilled									
Forestry and Conservation Workers		21		0		0		0	
General Sawmill Employees		16		0		0		0	
Lumber Company Truck Drivers		13		0		2		0	
Lumber Yard Workers		50		2		10		0	
Park and Forest Maintainer III		6		0		0		0	
Park and Forest Maintainer II		29		0		2		0	
Park and Forest Maintainer I		9		0		2		0	
Sub-Totals	144		2		16		0		
TOTALS		246		6		18		3	
C. Farm Machinery Sales and Service									
19. Professional		0		0		0		0	
Sub-Totals	0		0		0		0		
20. Technical									
Assembler Milk Transfer Equipment		1		0		0		0	
Bench Assembler Milk Transfer Equipment		1		0		6		0	
Plastic Milk Equipment Assembler		1		0		6		0	
Sub-Totals	3		0		12		0		

Level of Employment		Currently Employed				Expected to be Hired During Next 5 Years			
		Full-Time		Part-Time		Full-Time		Part-Time	
21. Service									
Farm Machinery Serviceman		2		0		1		0	
Sub-Totals	2		0		1		0		
22. Managerial									
Farm Machinery and Equipment Manager		9		0		0		0	
Farm Machinery Service Manager		2		0		0		0	
Small Engine and Equipment Manager		26		3		3		4	
Sub-Totals	37		3		3		4		
23. Supervisory									
Farm Machinery Foreman		2		0		0		0	
Farm Machinery Office Manager		1		0		0		0	
Farm Machinery Parts Manager		3		0		0		0	
Small Gas Engine Foreman		1		0		0		0	
Sub-Totals	7		0		0		0		
24. Sales									
Farm Machinery Salesman		7		2		0		4	
Gas Engine and Equipment Store Salesman		24		2		3		4	
Sub-Totals	31		4		3		8		
25. Clerical									
Farm Machinery Clerk or Bookkeeper		3		0		0		0	
Small Engine Clerk		3		0		0		0	
Sub-Totals	6		0		0		0		
26. Skilled									
Farm Machinery Mechanic		36		0		2		0	
Farm Machinery Parts Clerk		6		0		0		0	
Farm Machinery Repairman		3		0		1		0	

Level of Employment		Currently Employed				Expected to be Hired During Next 5 Years			
		Full-Time		Part-Time		Full-Time		Part-Time	
26. Skilled (Continued)									
Farm Machinery Set-up Man		3		2		2		1	
Small Equipment Repairman		2		0		0		0	
Small Gas Engine Mechanic		41		13		12		10	
Small Gas Engine Parts Clerk		3		0		0		0	
Sub-Totals	94		15		17		11		
27. Semi-Skilled									
Farm Machinery Assistant Repairman		2		1		1		1	
Farm Machinery Mechanic Helper		5		0		1		1	
Small Engine Delivery Man		3		1		0		3	
Small Engine Parts Clerk		4		1		0		0	
Small Gas Engine Assistant Mechanic		10		3		2		6	
Small Gas Engine Mechanic		16		5		6		4	
Stock Clerk Store Employee		3		1		0		1	
Sub-Totals	43		12		10		16		
TOTALS		223		34		46		39	
D. Farm Supplies and Equipment									
28. Professional		0		0		0		0	
Sub-Totals	0		0		0		0		
29. Technical									
Feed Fieldman		1		0		0		0	
Fertilizer and Chemical Technicians		11		0		0		0	
Sub-Totals	12		0		0		0		
30. Service		0		0		0		0	
Sub-Totals	0		0		0		0		

Level of Employment		Currently Employed			Expected to be Hired During Next 5 Years		
		Full-Time	Part-Time		Full-Time	Part-Time	
31. Managerial							
Farm Equipment and Supplies Manager		2	0		0	0	
Feed and Farm Supplies Store Manager		22	0		0	0	
Feed Plant Manager		1	0		0	0	
Fence Installation Manager		3	0		0	0	
Fertilizer and Chemical Plant Manager		1	0		0	0	
Hardware Garden Supply Manager		7	0		1	0	
Sub-Totals	36		0	1		0	
32. Supervisory							
Chemical and Fertilizer Plant Supervisor		12	0		1	0	
Farm Equipment Foreman		1	0		0	0	
Feed and Farm Supplies Store Foreman		5	0		0	0	
Feed Plant Foreman		2	0		0	0	
Sub-Totals	20		0	1		0	
33. Sales							
Agricultural Chemical Salesman		40	0		0	0	
Farm Equipment and Supply Salesman		5	0		0	0	
Feed and Farm Supplies Salesman		12	4		0	4	
Fence and Equipment Salesman		1	0		0	0	
Garden and Hardware Store Salesman		2	1		2	0	
Sub-Totals	60		5	2		4	
34. Clerical							
Farm Equipment and Supplies Clerk		3	0		1	0	
Feed and Farm Supplies Clerk		8	4		0	1	
Feed Plant Clerk		2	0		1	0	
Sub-Totals	13		4	2		1	

Level of Employment		Currently Employed			Expected to be Hired During Next 5 Years		
		Full-Time	Part-Time		Full-Time	Part-Time	
35. Skilled							
Farm Equipment Serviceman		6	0		0	0	
Farm Equipment Welder		2	0		1	0	
Feed Mixers and Pelleter		4	0		2	0	
Fence Installation Workers		9	0		3	0	
Sub-Totals	21		0	6		0	
36. Semi-Skilled							
Farm Equipment and Supplies Worker		6	1		5	6	
Feed and Farm Supplies Store Worker		19	5		3	6	
Feed and Farm Supplies Trucker		34	4		7	5	
Feed Packers and Scoopers		5	0		4	0	
Feed Warehouseman		4	0		1	0	
Fence Installation Workers		7	2		1	3	
Fertilizer and Chemical Workers		21	5		11	6	
Sub-Totals	96		17	32		26	
TOTALS		258	26		44	31	
E. Food Handling and Processing							
37. Professional		0	0		0	0	
Sub-Totals	0		0	0		0	
38. Technical		0	0		0	0	
Sub-Totals	0		0	0		0	
39. Service		0	0		0	0	
Sub-Totals	0		0	0		0	
40. Managerial							
Wholesale Fruit Manager		20	0		0	0	
Sub-Totals	20		0	0		0	

Level of Employment		Currently Employed				Expected to be Hired During Next 5 Years			
		Full-Time		Part-Time		Full-Time		Part-Time	
41. Supervisory									
Retail Dairy Delicatessen Manager		2		0		0		0	
Retail Meat Manager		24		2		0		0	
Retail Produce Manager		26		5		0		0	
Wholesale Fruit Foreman		1		0		0		0	
Wholesale Fruit Office Manager		1		0		0		0	
Sub-Totals	54		7		0		0		
42. Sales									
Wholesale Fruit Salesman		4		0		0		0	
Sub-Totals	4		0		0		0		
43. Clerical									
Wholesale Fruit Bookkeeper		2		1		0		1	
Sub-Totals	2		1		0		1		
44. Skilled		0		0		0		0	
Sub-Totals	0		0		0		0		
45. Semi-Skilled									
Retail Meat Workers		97		55		81		135	
Retail Produce and Grocery Workers		87		65		78		175	
Wholesale Fruit Packers		20		5		4		1	
Wholesale Fruit Trucker		20		7		3		4	
Sub-Totals	224		132		166		315		
TOTALS		304		140		166		316	

F. Livestock Industry

46. Professional									
Animal Nutritionist		1		0		0		0	
Meat Plant Efficiency Specialists		2		0		0		0	
Sub-Totals	3		0		0		0		

Level of Employment		Currently Employed			Expected to be Hired During Next 5 Years		
		Full-Time	Part-Time		Full-Time	Part-Time	
47. Technical							
Artificial Inseminator		12	0		2	0	
Dairy Plant Computer Technician		2	0		0	0	
Dairy Plant Pasteurizers Technician		6	0		0	0	
Poultry Hatchery Technician		1	0		0	0	
Poultry Production Technician		3	0		1	0	
Sub-Totals	24	0		3	0		
48. Service							
Dog Groomer		3	2		0	0	
Dog Warden		1	0		0	0	
Horse Groomer		0	1		0	2	
Sub-Totals	4	3		0	2		
49. Managerial							
Abbatoir Manager		4	0		0	0	
Dairy Plant Manager		28	0		0	0	
Hatchery Manager		6	0		0	0	
Ice Cream Plant Manager		3	0		0	0	
Kennel Manager		8	6		1	0	
Livestock Auction Manager		1	0		0	0	
Livestock Buyer Manager		5	0		0	0	
Meat Locker Manager		1	0		0	0	
Meat Processing Plant Manager		19	0		0	0	
Pet Shop Manager		3	0		0	0	
Riding Stable Manager		8	4		2	2	
Store Poultry Dressing Manager		7	0		0	0	
Wholesale Egg Manager		9	0		0	0	
Sub-Totals	102	10		3	2		
50. Supervisory							
Dairy Plant Laboratory Supervisor		1	0		0	0	
Dairy Plant Member Relation Supervisor		1	0		0	0	

Level of Employment		Currently Employed		Expected to be Hired During Next 5 Years	
		Full-Time	Part-Time	Full-Time	Part-Time
50. Supervisory (continued)					
Dairy Plant Office Supervisor		1	0	0	0
Dairy Plant Supervisor		7	0	0	0
Ice Cream Plant Foreman		1	0	0	0
Kennel Supervisor		3	0	1	1
Meat Processing Plant Office Manager		1	0	0	0
Meat Processing Supervisor		13	0	0	0
Milk Route Supervisor		10	0	1	0
Pet Shop Supervisor		1	0	0	0
Poultry Meat Processing Foreman		8	0	2	0
Sausage Manager		3	0	0	0
Wholesale Egg Supervisor		4	0	0	0
Sub-Totals	54	0	4	1	
51. Sales					
Hatchery Salesman		8	0	4	0
Ice Cream Salesman		13	0	2	0
Live Poultry Buyer		1	0	0	0
Livestock Buyer		2	0	0	0
Meat Salesman		84	0	29	3
Milk Salesman (Driver)		233	1	81	1
Pet Shop Salesman		4	1	0	3
Wholesale Egg Salesman		1	0	0	0
Sub-Totals	346	2	116	7	
52. Clerical					
Dairy Plant Clerk or Bookkeeper		10	2	5	0
Hatchery Bookkeeper or Clerk		8	0	2	0
Ice Cream Bookkeeper or Clerk		3	1	0	0
Livestock Auction Bookkeeper		1	0	0	0
Meat Processing Bookkeeper or Clerk		20	6	10	5
Pet Shop Clerk		1	0	0	0
Wholesale Egg Bookkeeper		3	0	0	0
Sub-Totals	46	9	17	5	

Level of Employment		Currently Employed			Expected to be Hired During Next 5 Years		
		Full-Time	Part-Time		Full-Time	Part-Time	
53. Skilled							
Animal Skinners		18	0		0	0	
Butchers		19	0		0	0	
Dairy Plant Worker		5	2		5	6	
Ice Cream Maker		4	0		1	0	
Ice Cream Refrigerator Operator		3	0		1	0	
Meat Curing Worker		7	4		7	3	
Meat Cutters		34	2		14	1	
Milk Plant Maintenance Worker		8	0		0	0	
Milk Tank Truck Driver		60	0		0	0	
Sausage Makers		14	2		7	5	
Sub-Totals	172		10	35		15	
54. Semi-Skilled							
Dairy Plant Worker		91	9		21	5	
Egg Candlers		8	2		6	5	
Egg Packers and Graders		12	1		5	1	
Wholesale Egg Truck Driver		12	1		7	2	
Hatchery Truck Drivers		4	0		3	0	
Hatchery Workers		19	14		9	9	
Ice Cream Plant Workers		32	7		3	7	
Ice Cream Truck Drivers		14	0		2	0	
Kennel Worker		7	12		3	26	
Livestock Loaders		3	0		0	0	
Meat Processing Plant Truck Drivers		18	3		8	0	
Meat Processing Workers		156	37		99	15	
Pet Shop Workers		2	1		1	6	
Poultry Processing Plant Workers		216	39		37	26	
Riding Stable Workers		7	6		12	7	
Sub-Totals	601		132	216		109	
TOTALS		1352	166		394	141	

Level of Employment		Currently Employed		Expected to be Hired During Next 5 Years	
		Full-Time	Part-Time	Full-Time	Part-Time
G. Ornamental Horticulture					
55. Professional					
Assistant Highway Land-Scape Engineer		2	0	0	0
Florist		1	0	0	0
Highway Inspectors		6	0	0	0
Landscape Architects		2	0	0	0
Landscape Salesman		1	0	1	0
Nurseryman		1	0	0	0
Park Superintendent		1	0	0	0
Senior Highway Landscape Engineer		1	0	0	0
Sub-Totals	15	0		1	0
56. Technical					
Floral Designers		13	2	2	0
Florists		9	0	1	0
Landscape Designers		3	0	0	0
Landscape Technicians		2	0	0	0
Nurseryman		1	0	0	0
Sub-Totals	28	2		3	0
57. Service		0	0	0	0
Sub-Totals	0	0		0	0
58. Managerial					
Floral Shop Manager		23	2	0	0
Garden Center Manager		7	1	0	0
Greenhouse Manager		32	2	0	0
Grounds Manager		1	0	0	0
Landclearing Manager		2	0	0	0
Landscape Garden Manager		8	0	1	0
Municipal Park Manager		1	0	0	0
Nursery Manager		22	2	1	0
Tree Service Manager		13	1	1	1
Sub-Totals	109	8		3	1
59. Supervisory					
Floral Shop Supervisor		4	0	0	0
Garden Center Supervisor		2	0	0	0
Greenhouse Foreman		2	0	0	0

Level of Employment		Currently Employed			Expected to be Hired During Next 5 Years		
		Full-Time	Part-Time		Full-Time	Part-Time	
59. Supervisory (continued)							
Grounds Supervisor		15	0		0	0	
Landscape Gardener		8	0		1	0	
Landscape Garden Foreman		0	2		0	0	
Municipal Park Supervisor		9	0		0	0	
Nursery Foreman		17	2		6	0	
Roadside Foreman		1	0		0	0	
Top Soil Contracting Foreman		5	0		1	0	
Tree Service Foreman		2	0		0	0	
Sub-Totals	65	4		8	0		
60. Sales							
Floral Salesman		6	8		1	6	
Garden Center Salesman		13	5		12	9	
Greenhouse Salesman		7	2		3	6	
Nursery Salesman		3	12		0	16	
Sub-Totals	29	27		16	37		
61. Clerical							
Floral Shop Bookkeeper		1	0		0	0	
Garden Center Bookkeeper		5	0		0	0	
Greenhouse Bookeeper		6	0		1	1	
Nursery Bookkeeper		9	2		0	0	
Tree Service Bookkeeper		1	0		0	0	
Sub-Totals	22	2		1	1		
62. Skilled							
Floral Designers		33	6		6	0	
Florists		5	0		1	0	
Greenhouse Growers		16	2		4	3	
Grounds Equipment Operator		3	0		0	0	
Grounds Keeper		2	0		0	0	
Horticulturist		1	0		0	0	
Landscape Masons		3	0		0	0	
Landscape Planters		7	0		3	0	
Landscape Workers		25	0		3	0	
Nurserymen		5	0		8	12	
Nursery Propagator		1	0		0	0	
Tree Pruner		17	1		3	16	
Sub-Totals	118	9		28	31		

Level of Employment		Currently Employed			Expected to be Hired During Next 5 Years		
		Full-Time	Part-Time		Full-Time	Part-Time	
63. Semi-Skilled							
Floral Shop Workers		0	20		0	21	
Greenhouse, Floral Shop Deliveryman		6	5		0	4	
Greenhouse Workers		26	24		11	25	
Groundskeeper		66	20		65	40	
Highway Maintenance Workers		150	25		5	0	
Municipal Park Workers		34	40		24	36	
Nursery and Landscape Workers		174	95		114	163	
Roadside Truck Drivers		5	1		3	1	
Roadside Workers		16	3		5	8	
Tree Service Groundsmen		26	0		32	0	
Sub-Totals	503		233	259		298	
TOTALS		889	285		319	368	
H. Wildlife and Recreation							
64. Professional							
Fish Biologist I		1	0		0	0	
Game Biologist I		1	0		0	0	
Recreation Specialist		0	25		0	0	
Sub-Totals	2		25	0		0	
65. Technical							
Recreation Specialist		0	49		0	25	
Sub-Totals	0		49	0		25	
66. Service		0	0		0	0	
Sub-Totals	0		0	0		0	
67. Managerial							
Golf Course Manager		7	0		3	0	
Grounds and Building Maintenance and Manager		3	0		1	0	
Sub-Totals	10		0	4		0	

Level of Employment		Currently Employed			Expected to be Hired During Next 5 Years		
		Full-Time	Part-Time		Full-Time	Part-Time	
68. Supervisory							
Assistant Golf Course Manager		1	0		0	0	
Golf Course Foreman		8	0		1	0	
Grounds and Building Supervisor		5	1		0	0	
Recreation Specialist		0	85		0	35	
Sub-Totals	14		86	1		35	
69. Sales		0	0		0	0	
Sub-Totals	0		0	0		0	
70. Clerical		0	0		0	0	
Sub-Totals	0		0	0		0	
71. Skilled							
Grounds Maintenance		0	30		0	3	
Recreation Specialist		0	85		0	0	
Riding Instructor		0	1		0	0	
Sub-Totals	0		116	0		3	
72. Semi-Skilled							
Assistant Riding Instructor		0	1		0	0	
Camp Grounds Keeper		0	16		0	9	
Fish Culturist II		2	0		0	0	
Fish Culturist I		1	0		0	0	
Golf Course Greenskeeper		58	39		49	48	
Grounds and Building Maintenance Worker		21	6		15	1	
Recreation Specialist		0	60		0	42	
Sub-Totals	82		122	64		100	
TOTALS		108	398		69	163	

COMPETENCIES AND COMPETENCY CLUSTERS*

1. Plant Science

   Plant propagation, seed production
   Plant growth, fertilization
   Controlling insects, diseases, weeds
   Soils, types and conservation
   Additional production practices

2. Animal Science

   Animal breeding, selection
   Animal growth, feeding
   Health and sanitation
   Housing and equipment
   Additional production practice

3. Agricultural Business Management and Marketing

   Budgeting, records and analysis
   Farm financing (credit, taxes)
   Labor management
   Marketing practices
   Agricultural policy

4. Agricultural Mechanics and Automation

   Farm power and machinery
   Farm buildings and convenience
   Rural electrification and processing
   Soil structures (ditches, ponds, etc.)
   Farm construction and maintenance

5. Occupational Information and Regulations

   Job opportunities and trends
   Job applications, interviews
   Personal qualifications, preferences
   Worker welfare (insurance, retirement)
   Legal requirements of the job

6. Duties of Employee

   Receiving, marking, shipping
   Window and store display
   Salesmanship
   Customer relations
   Bookkeeping, business mathematics

COMPETENCIES AND COMPETENCY CLUSTERS* (Continued)

7. Business Organization and Supervision

Employee-supervisor relations
Employee relations with fellow workers
Buying and merchandising
Inventory, stock control, warehousing
Internal business organization

8. Management and Economics of Business

Capital management, financing
Accounting, taxes, legal relationships
Trade relationships, promotion, advertising
Government regulations
Buying and merchandising

9. Construction Trades

Building maintenance
Masonry
Carpentry and cabinetmaking
Sheet metal, tinsmith, coppersmith
Painting and finishing
Plumbing
Heating, ventilation, refrigeration and air-conditioning

10. Metal Trades

Engines, repair and maintenance
Machinist
Welding

11. Technicians

Drafting (design, building and elevations)
Hydraulics and pneumatics
Industrial chemistry
Quality control

12. Electrical Trades

Electrical wiring
Electrical power and distribution
Electronics
Appliance repair

13. Related Subjects

Blueprint reading
Technical and service manuals, handbooks, etc.

* Numbers (1-13) are codes for competency clusters.

Interviewer _____

Date of Interview _____

EMPLOYMENT OPPORTUNITIES AND NEEDED COMPETENCIES IN AGRICULTURAL OCCUPATIONS OTHER THAN FARMING IN CONNECTICUT

Form I

I BUSINESS or SERVICE

A. Name of Firm _____ Code No. _____ (from IBM name card)

Address _____ Township _____

B. Name of person interviewed _____

Telephone _____

Position of person interviewed:

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

C. Main function of firm, organization, or agency:

1. _____ Sales (Buying and/or Selling)
2. _____ Service
3. _____ Manufacturing
4. _____ Processing
5. _____ Specialized agriculture
6. _____ Recreational enterprises
7. _____ Professional services
8. _____ Other-Specify _____

D. Number of years in business in this locality _____

E. Agricultural functions of business or service _____

F. Percent of gross income that is agriculturally oriented _____

Form I

II EMPLOYEES

A. Total number of persons working in firm _____

1. Do you employ any high school students? No _____ Yes _____ (how many)

2. Would you employ high school students as trainees? No _____ Yes _____ (how many)

3. If you employed high school students would you prefer students studying Vocational Agriculture? No _____ Yes _____

B. Present job titles

Existing job titles	Number of Employees Full-time	Number of Employees Part-time	Level of Employment
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

(Additional titles may be listed on the back of this sheet)

C. New job titles foreseen in this firm in the next five years:

Anticipated new job titles	Number of Employees Full-time	Number of Employees Part-time	Level of Employment
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

Level of Employment Code

1. Professional Occupation
2. Technical
3. Service Occupations
4. Managerial
5. Supervisory
6. Sales
7. Clerical
8. Skilled Occupations
9. Semi-skilled Occupations

Interviewer _____

Date of Interview _____

EMPLOYMENT OPPORTUNITIES AND NEEDED COMPETENCIES IN AGRICULTURAL OCCUPATIONS OTHER THAN FARMING IN CONNECTICUT

Form II

1. Identification of Business or Service, Level of Employment and Job Title (be sure to make out cards coded with name of business or service)

2. Answer card (Form II)

A. Code Number. Use spaces 1 and 2 for township; note township requires two marks. (See List 1, page 10 in manual)

B. Interviewer Number–3A, 3E, 28A, 28C.

C. Sex of Employee:
Male 28D, Female 28E.

D. Level of Employment (See List 2, page 11 in manual)

List Job Titles

1	2	3	4	5	6	7	8	9	10	11	12

4A Professional
4B Technical
4C Service
4D Managerial
4E Supervisory
29A Sales
29B Clerical
29C Skilled
29D Semi-Skilled

E. Agricultural Occupation Families
(See List 3, page 13 in manual)

5A Farm Machinery Sales and Service
5B Farm Supplies and Equipment
5C Livestock Industry
5D Crops, Forestry and Soil Conservation
5E Ornamental Horticulture
30A Wildlife and Recreation
30B Farm Service
30C Agricultural Service
30D Other

Form II

F. Job Number (See Form 1):

	1	2	3	4	5	6	7	8	9	10	11	12
6A 1st												
6B 2nd												
6C 3rd												
6D 4th												
6E 5th												
31A 6th												
31B 7th												
31C 8th												
31D 9th												
31E 10th												
50A 11th												
50B 12th												
50C 13th												
50D 14th												
50E 15th												

G. Full-time employees presently on job

Code	Number	
7A	1	
7B	2	
7C	3	
7D	4	
7E	5	
32A	6-7	
32B	8-9	
32C	10-11	
32D	12-14	
32E	15 or more	

H. Part-time employees presently on job

Code	Number	
8A	1	
8B	2	
8C	3	
8D	4	
8E	5	
33A	6-7	
33B	8-9	
33C	10-11	
33D	12-14	
33E	15 or more	

Form 11

1	2	3	4	5	6	7	8	9	10	11	12

I. How many full-time replacement or additional employees do you expect in the next five years? This may be based on turnover in last five years and expected increase.

Code	Number
9A	1-2
9B	3-4
9C	5-6
9D	7-8
9E	9-10
34A	11-13
34B	14-17
34C	18-20
34D	21-24
34E	25 or more

J. How many part-time replacement or additional employees do you expect in the next five years?

Code	Number
10A	1-2
10B	3-5
10C	6-8
10D	9-12
10E	13-15
35A	16-19
35B	20-24
35C	25-29
35D	30-34
35E	35 or more

K. What is the average hourly rate you pay full-time employees?

Code	Amount
11A	$1.25 or less
11B	1.26 - 1.50
11C	1.51 - 2.00
11D	2.01 - 2.50
11E	2.51 - 3.00
36A	3.01 - 4.00
36B	4.01 - 5.00
36C	5.01 - 6.00
36D	6.01 - 7.00
36E	7.01 or more

Form II

L. What is the average hourly rate you pay part-time employees?

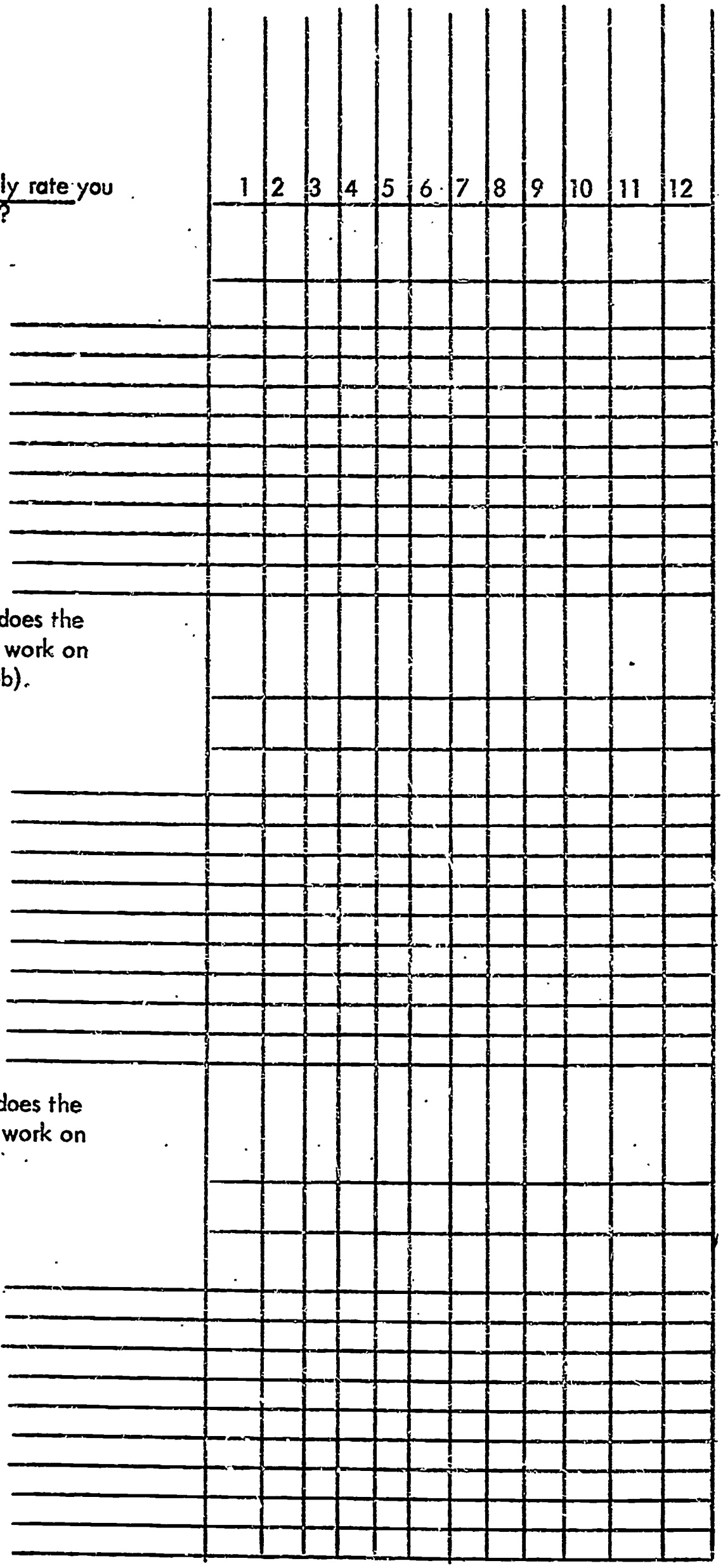
Code	Amount
12A	$1.25 or less
12B	1.26 - 1.50
12C	1.51 - 2.00
12D	2.01 - 2.50
12E	2.51 - 3.00
37A	3.01 - 4.00
37B	4.01 - 5.00
37C	5.01 - 6.00
37D	6.01 - 7.00
37E	7.01 or more

M. How much time per year does the average part-time person work on this job? (Use name of job).

Code	Time
13A	1 - 2 weeks
13B	3 - 4 weeks
13C	2 months
13D	3 months
13E	4 months
38A	5 months
38B	6 months
38C	7 - 8 months
38D	9 - 10 months
38E	11 - 12 months

N. How many hours per day does the average part-time person work on this job?

Code	Hours
14A	1 - 2
14B	3
14C	4
14D	5
14E	6
39A	7
39B	8
39C	9 - 10
39D	11 - 12
39E	13 or more



Form II

O. Is there a peak season for part-time help on this job? What month of the year is it?

Code	Month
15A	Jan. - Feb.
15B	March
15C	April
15D	May
15E	June
40A	July
40B	August
40C	September
40D	Oct. - Nov.
40E	December

P. For persons in this job title, agricultural knowledge and competency is:

Code	
16A	Essential
16B	Highly Desirable
16C	Useful
16D	Unnecessary

Q. Are there any limitations on entering this job title such as:

Code	
41A	Labor restrictions, union
41B	Labor restrictions, legal
41C	Licensing or certification
41D	Other (make a list, here, with code number):

1. _____

2. _____

3. _____

Form II

R. What is the minimum age for someone beginning to work as a _____?

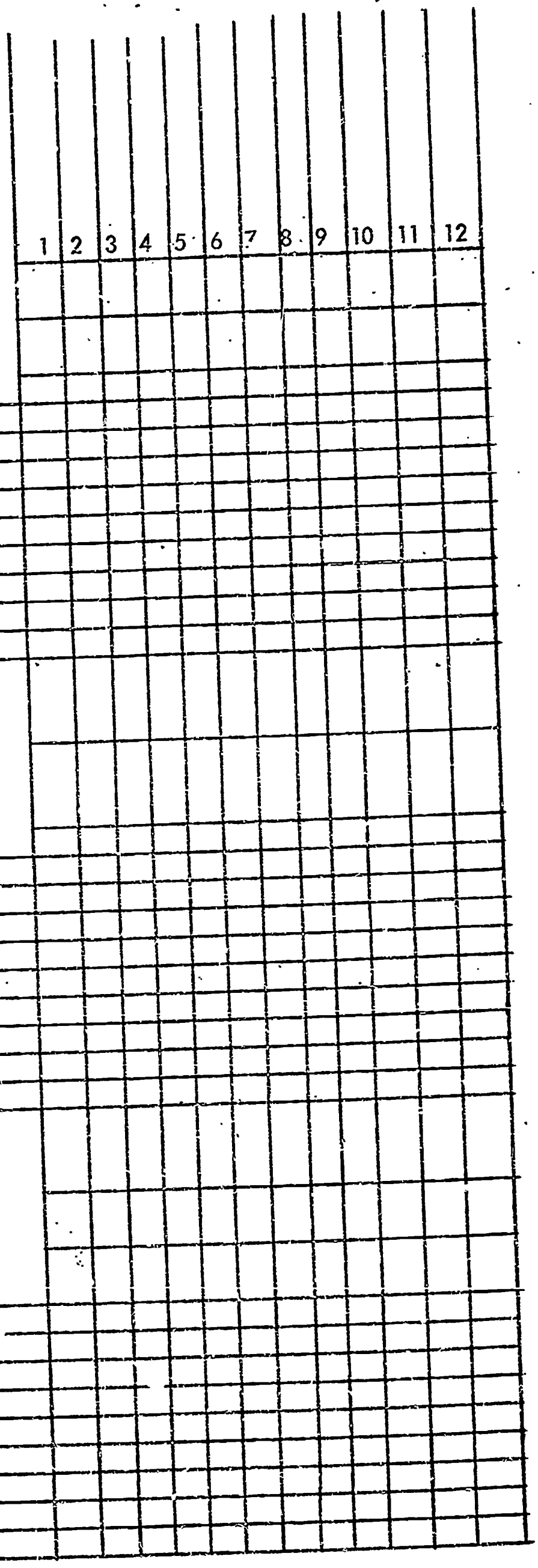
Code	Age
17A	under 14
17B	15 - 16
17C	17 - 19
17D	20 - 24
17E	25 - 29
42A	30 - 35
42B	36 - 40
42C	41 - 45
42D	46 - 50
42E	51 - 55

S. What is the maximum age for someone beginning to work as a _____?

Code	Age
18A	15 - 16
18B	17 - 19
18C	20 - 24
18D	25 - 29
18E	30 - 35
43A	36 - 40
43B	41 - 45
43C	46 - 50
43D	51 - 55
43E	56 - 65

T. What is the minimum educational limit for the job of _____?

Code	Education
19A	Elementary
19B	Junior High School
19C	High School
19D	Post High School Tech.
19E	Some College
44A	College degree
44B	Some graduate work
44C	Master's degree
44D	Special certificate
44E	Doctor's degree



Form II

	1	2	3	4	5	6	7	8	9	10	11	12

U. What kind of residential experience is preferable for an employee in this job?

Code	Experience
20A	Farm
20B	Rural, non-farm
20C	Suburban
20D	City
20E	No preference

V. How much experience is necessary to begin work as a _____?

Code	Experience
21A	None
21B	1 month
21C	2-3 months
21D	4-6 months
21E	7-12 months
46A	13-18 months (1 1/2 years)
46B	19-24 months (2 years)
46C	25-30 months (2 1/2 years)
46D	31-36 months (3 years)
46E	more than 3 years

W. Do you feel some of your employees need more training? If yes, how many full-time employees need more training?

Code	Number
22A	1
22B	2 - 3
22C	4 - 5
22D	6 - 8
22E	9 - 12
47A	13 - 15
47B	15 - 20
47C	21 - 25
47D	26 - 30
47E	more than 30

Form II

	1	2	3	4	5	6	7	8	9	10	11	12

X. How many part-time employees need more training?

Code	Number
23A	1
23B	2 - 3
23C	4 - 5
23D	6 - 8
23E	9 - 12
48A	13 - 15
48B	16 - 20
48C	21 - 25
48D	26 - 30
48E	more than 30

Y. Preferred method of training:

Code	Method
24A	Your business or industry
24B	On-the-job training
24C	Public school
24D	Agricultural college
24E	Private school
49A	Short course at a college
49B	Conferences
49C	Company school or training program
49D	Adult education courses
49E	Other

Z. Extent to which training programs are available. Check all which apply:

Code	
25A	Sufficient to meet all needs
25B	More training programs needed
25C	Training programs need to be established which are available to all employees
25D	Existing training programs need change in emphasis to meet present and future needs
25E	New types of training programs would be desirable

-- Turn card over --

Form II

a. Agricultural production enterprises most closely associated with job

Code	Enterprise	1	2	3	4	5	6	7	8	9	10	11	12
76A	Beef cattle												
76B	Dairy cattle												
76C	Swine												
76D	Sheep												
76E	Horses												
77A	Grasses												
77B	Hay crops												
77C	Silage												
77D	Small fruit												
77E	Tree fruit												
51A	Poultry												
51B	Corn												
51C	Vegetables												
51D	Tobacco												
51E	Meats												
52A	Floriculture												
52B	Apples												
52C	Nursery products												
52D	Forest products												
52E	Other												

AGRICULTURE

Code	Competency
PLANT SCIENCE	
53A	Plant propagation, seed prod.
53B	Plant growth, fertilization
53C	Controlling insects, diseases, weeds
53D	Soils, types and conservation
53E	Additional production practices
ANIMAL SCIENCE	
78A	Animal breeding, selection
78B	Animal growth, feeding
78C	Health and sanitation
78D	Housing and equipment
78E	Additional production practice

Form II

		1	2	3	4	5	6	7	8	9	10	11	12
AGRICULTURAL BUSINESS MANAGEMENT AND MARKETING													
54A	Budgeting, records and analysis												
54B	Farm financing (credit, taxes)												
54C	Labor Management												
54D	Marketing practices												
54E	Agricultural policy												
AGRICULTURAL MECHANICS AND AUTOMATION													
79A	Farm power and machinery												
79B	Farm buildings and convenience												
79C	Rural electrification and processing												
79D	Soil structures (ditches, ponds, etc.)												
79E	Farm construction and maintenance												
BUSINESS AND DISTRIBUTION													
OCCUPATIONAL INFORMATION AND REGULATIONS													
55A	Job opportunities and trends												
55B	Job applications, interviews												
55C	Personal qualifications, pref.												
55D	Worker welfare (insurance, retirement)												
55E	Legal requirements of the job												
DUTIES OF EMPLOYEE													
80A	Receiving, marking, shipping												
80B	Window and store display												
80C	Salesmanship												
80D	Customer relations												
80E	Bookkeeping, business mathematics												
BUSINESS ORGANIZATION AND SUPERVISION													
56A	Employee-supervisor relations												
56B	Employee relations with fellow workers												
56C	Buying and merchandising												
56D	Inventory, stock control, warehousing												
56E	Internal business organization												

Form II

		1	2	3	4	5	6	7	8	9	10	11	12
MANAGEMENT AND ECONOMICS OF BUSINESS													
81A	Capital management, financing												
81B	Accounting, taxes, legal relationships												
81C	Trade relationships, promotion, advertising												
81D	Government regulations												
81E	Buying and merchandising												
TRADE AND INDUSTRIAL COMPETENCIES													
CONSTRUCTION TRADES													
57A	Building maintenance												
57B	Masonry												
57C	Carpentry and cabinetmaking												
57D	Sheet metal, tinsmith, coppersmith												
57E	Painting and finishing												
82A	Plumbing												
82B	Heating, ventilation, refrigeration, and air conditioning												
METAL TRADES													
58A	Engines, repair and maintenance												
58B	Machinist												
58C	Welding												
TECHNICIANS													
83A	Drafting (design, building & elevations)												
83B	Hydraulics and pneumatics												
83C	Industrial chemistry												
83D	Quality control												
ELECTRICAL TRADES													
59A	Electrical wiring												
59B	Electrical power & distribution												
59C	Electronics												
59D	Appliance repair												
RELATED SUBJECTS													
84A	Blueprint reading												
84B	Technical and service manuals and handbooks, etc.												

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