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ABSTRACT

In a followup study to collect data which could be used for the evaluation and improvement of secondary occupational education programs in agriculture in New York State, questionnaires were sent to respondents of the original survey (agricultural graduates from the classes of 1968 and 1970 and their employers). From the 1968 class, questionnaires were sent to 537 graduates and 110 employers; response was 364 and 90, respectively. In the 1970 class, 268 graduates and 88 employers were sent questionnaires; returned questionnaires numbered 177 and 54 respectively. The items determined were: graduate occupational status; type of employment selected by graduates; graduate occupational promotions and pay raises; type and extent of on-the-job training; need for agricultural knowledges, skills, and attitudes in the occupation as perceived by employee and employer; reasons for graduate not entering field for which he was trained; graduates' job satisfaction; plans for future employment; and the image of agricultural occupations as perceived by graduates. Data pertaining to those items and additional demographic data are presented in tabular form. From this data, specific conclusions are drawn, and recommendations are made for curriculum revision. The seven questionnaire forms used and additional raw data are presented in several appendixes. (AG)

THE RELEVANCE OF SECONDARY OCCUPATIONAL EDUCATION IN AGRICULTURE TO OCCUPATIONAL PATTERNS AND IMAGES: PHASE II

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May, 1974

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FORWARD

This is the second of two reports on graduates of secondary Occupational Education in Agriculture and their employers. The first report* dealt with first-year occupational information on 1968 graduates. This report will provide similar data on the second year status of 1968 graduates, and the first and second year status of 1970 agricultural graduates.

The background of the problem review of related literature and methodology included in the first report will be reported in an abbreviated form in this publication.

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* The first report was: Berkey, Arthur L., et.al. Final Report: The Relevance of Secondary Occupational Training in Agriculture to Occupational Patterns. Cornell University/N. Y. S. Education Department. Ithaca. New York, June 1969. 77pp.

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INTRODUCTION

Statement of the Problem

The ultimate "payoff" for occupational education is the extent to which graduates are prepared for success and satisfaction in entry level jobs. In order to assess this "pay-off", comprehensive occupational follow-up data on graduates will be required.

Such data is not currently available for graduates of secondary occupational education in agriculture programs in New York State and therefore research to provide this information is needed.

Data regarding graduates is needed from both "employee" and "employer" if a realistic and comprehensive picture of the graduates' present status and satisfaction is to be provided.

The types of data needed include occupational status, type of job, wage level, any promotions and/or pay raises received -- i.e. advancement, job tenure and extent of qualification for the job held. The relevance of knowledges and abilities taught in the occupational education in agriculture courses is also important.

The graduates' feeling about their jobs and agricultural occupations as a whole can be judged by information on job satisfaction and the occupational image held for the farming and off-farm agricultural related industry. Also, employer judgements about the graduates' potential for occupational advancement provides insight into the graduates' occupational future.

In summary, there is a need for an up-to-date data based on the occupational patterns and images of graduates that can be used for the evaluation and improvement of occupational education programs in agriculture.

Purpose

The purpose of this study is to provide a basis that may be used for the evaluation and improvement of secondary occupational education programs in agriculture through a follow-up survey of agricultural graduates and their employers.

Objectives

The specific objectives to meet the purpose of the study are to determine:

1. The occupational status of graduates.
2. The types of employment selected by graduates.
3. Occupational promotions and pay raises received by graduates.
4. Type and extent of additional training received while employed.
5. The need for agricultural knowledges, skills and attitudes in the graduates' occupation as perceived by graduates and their employers.
6. The reasons why graduates may not enter the agricultural occupation for which they were trained.
7. The graduates' satisfaction with present occupational status.
8. The graduates' plans for future employment.
9. The image of agricultural occupations as perceived by graduates.

Assumptions

1. The graduates and their employers can distinguish between the training received through occupational education in agriculture and the training received on the job.
2. The ability of the graduate and his employer to evaluate the adequacy of the graduates' occupation in agriculture is limited to the knowledges, skills and attitudes needed in the job by the graduate.

Operational Definitions

1. Employers - Management representatives in business establishments reported by graduates as the firm in which they were employed.
2. Graduates - Persons graduating from New York secondary schools in 1968 and 1970 who earned four units of credit in occupational education in agriculture by completing 2 units in the same specialized agricultural area in both their junior and senior years.
3. Occupational Image - The sum total of an individual's knowledge and beliefs about farming, and off-farm agricultural related industry as measured by the 14 items on the image instruments.
4. Job Satisfaction - Attitudes (feelings) which an individual has about his job as measured by the 5 items on the job satisfaction instrument.
5. Specialized Area of Agriculture - The curricular areas of farm production and management, conservation, agricultural mechanization, and ornamental horticulture for which secondary occupational education in agriculture is provided in New York State Schools.

METHODOLOGY

This section reports the research methodology used to conduct the study.

Population and Sample

1968 Graduates - Second Year

The study population is graduates who completed four units of secondary level occupational education in agriculture at the junior and senior level in New York State in 1968 in one of the specialized areas of agricultural mechanics, ornamental horticulture, conservation, or farm production and management; and their employers. Agricultural business was excluded from the population due to the limited number of graduates.

The sample for the second year follow-up of 1968 graduates consisted of the 430 graduates who responded to the study the first year by completing a questionnaire, plus 107 graduates in military service. Graduates for which no current address was available although first-year status was reported by home schools were deleted. The total number of questionnaires sent out was 537.

Table 1 in the data collection section that follows show the sample size and percentage return.

1970 Graduates - First and Second Year

The population of 1970 graduates is defined similarly to that of the 1968 graduates. One hundred and two central schools and Boards of Cooperative Education Services (B. O. C. E. S.) were identified from the New York State Education Department Basic Educational Data System (B. E. D. S.) as offering occupational agriculture classes. Contact with the 102 schools determined that 15 either offered non-vocational

classes, had no graduates that qualified due to having a new program, or the school was incorrectly listed as offering occupational agriculture classes. Of the 87 school systems remaining, 11 declined to cooperate in the study. Thus the sample of 1970 graduates the first year consisted of all qualifying 525 graduates from 76 of 87 (87 percent) of school systems offering occupational classes in agriculture. No information was available as to the number of graduates meeting the criteria for the population in the 11 school systems declining to participate in the study.

The sample the second year of the follow-up of 1970 graduates consisted of the 268 graduates who responded to the study the first year by completing a questionnaire.

Table 2 in the data collection section shows the sample size and percentage return for both the first year and second year follow-up of 1970 graduates.

Construction of Instruments

Instruments to gather the data to meet the objectives of the study were constructed through modification of those already constructed in the first year. The instruments were pre-coded to allow coding of responses directly on the instrument, and keypunching of data on IBM computer cards directly from the instruments. Pretesting was carried out to provide reliability and validity. The instruments used are included as Appendices to this report.

A summary of the procedures used in development of the items to measure occupational status, image, job satisfaction, and the need for and adequacy of knowledges and abilities are presented below. A detailed description is provided in the report of the first year follow-up of 1968 graduates.

Occupational Status

The 8 categories used in the New York State Basic Education Data System (B. E. D. S.) were selected as occupational status categories in the study. The use of B. E. D. S. categories provides opportunity for comparison of the data from this study with data on non-vocational students. Also, as secondary school administrators and guidance personnel are currently reporting into B. E. D. S., this provides the possibility of individual school comparisons.

Image Scale

An instrument to measure image of agriculture (i.e. Farming and Non-Farm Related Agricultural Industry) was constructed using the following procedure:

1. A list of 90 short structured statements which represent favorable or unfavorable knowledge of beliefs about agriculture was compiled.

2. The list of statements was screened to eliminate duplication, provide items representative of an area of knowledge clearly different from any other item, and have general application to the population of the study. Fourteen items were selected for inclusion in the image scale. Six of the selected items were negative and eight were positive.

3. A 3 point agreement scale of "agree," "neutral," and "disagree," was devised for use by graduates in rating the image statements. The 3 points of the scale were arbitrarily assigned the values of 3, 2, and 1 respectively for positive image statements; and 1, 2, and 3 respectively for negative image statements.

Job Satisfaction

The five descriminably different areas of job satisfaction identified by Hulin[1] were chosen based on the selection of criteria of low verbal level, simplicity for a self-administered questionnaire, representative areas different from other areas, and general application to most jobs. These areas were (1) the people worked with, (2) the supervision received, (3) the work done, (4) promotions available in the job, and (5) the pay received.

A 5 point satisfaction scale was used for graduates to rate each of the 5 job satisfaction areas. Numerical values of 1-5 were arbitrarily assigned to the 5 point scale (satisfied was rated "5" and dissatisfied was rated "1").

List of Knowledges and Abilities

A representative list of 46 knowledges and abilities was synthesized from the longer list used in the 1968 first year follow-up instrument. The same list of knowledges and abilities was used for both graduates and employers.

Rating of Knowledges and Abilities

The knowledges and abilities were rated as to (1) need for the item in graduate's job and (2) the adequacy of agricultural training for the items needed in the graduate's job. The rating scales used were:

> Need for training - "E" (ESSENTIAL), "D" (DESIRABLE), and "U" (UNNECESSARY). The values of 3, 2, and 1 were assigned to the three responses respectively.

[1]Hulin, C. L. et.al., "Cornell Studies of Job Satisfaction. II. Model and Method of Measuring Job Satisfaction." Research Study conducted at Cornell University, Ithaca, New York, 1966.

Adequacy of training - "S" (SUPERIOR), "A" (ADEQUATE), "I" (INADEQUATE), and "N/A" (NOT APPLICABLE) - i.e., the knowledge or ability was not needed in the job and/or training was not provided in agriculture class. The values of 4, 3, 2, and 1 were respectively assigned to the four responses.

The need for training was rated by both employed graduates and their employers in the second year follow-up of the 1968 graduates and for both years of the 1970 follow-up. The adequacy of training was rated by employed 1970 graduates in the first year follow-up only. Values assigned to the scales used for rating need for the training were the same for both graduates and employers.

Pretesting of Instruments

The instruments used were essentially those used in the first year follow-up of 1968 graduates. Needed changes identified through this prior work were incorporated in the revised instruments.

The revised instruments were then pretested with a small group of 1968 graduates in each of the 4 specialized areas of agriculture to identify any unclear words, statements and/or instructions for completing the instruments. Personal interviews were held with each graduate taking part in the pretest.

The final revision of the instruments was made through incorporating the changes.

Instruments were then constructed in final form through incorporation of changes indicated by the results of the pretest.

Data Collection

The data for the study was collected from graduates and their employers through the use of self-administered mail questionnaires during 1970-1973.

Procedures

The basic steps used in data collection are described below.

1. The New York State Education Department Basic Education Data System (B. E. D. S.) was used to provide the names of secondary schools offering courses in occupational agriculture. Information regarding type of course, enrollment, and name of school administrator and agricultural teacher were also obtained.

2. The schools identified in (1) above were contacted to provide the names and addresses and occupational status (if known) of graduates in the sample. To increase the percent of returns, permission to list schools as sponsors of the study was also requested.

Limiting graduates in the study to those that completed two units of the same specialized area of Agriculture in both the Junior and Senior years considerably reduced the number of graduates included in the sample.

3. Questionnaires were pre-coded to identify graduates, schools, and specialized area of training.

4. The self-administered type questionnaires were sent to graduates by mail. Graduates reported by schools to be in military service were not sent questionnaires due to their temporary and overseas residence.

5. Three follow-up letters were sent to graduates who did not respond within a 14-day period.

6. Self-administered type questionnaires were mailed to employers as reported by employed graduates. As many as three letters were used to follow up employers not returning questionnaires.

An employer questionnaire was not applicable for graduates reporting self-employed status.

Percentage Return - 1968 Graduates

The number and percent of instruments returned by 1968 graduates in the study is presented in Table 1.

TABLE 1

Number and Percent of Questionnaires Returned by 1968 Graduates and Their Employers the First and Second Year by Specialized Area of Training

	Follow-up Year	Number of Persons								Total All Areas	
		FPM		CONS		AG MECH		ORN HORT			
		Graduates	Employers	Graduates	Employers	Graduates	Employers	Graduates	Employers	Graduates	Employers
No. Receiving Questionnaires	1	444	128	72	28	112	39	49	18	677	214
	2	332	65	54	11	110	28	41	6	537	110
No. Returning Questionnaires	1	294	80	41	14	61	22	34	10	430	126
	2*	228	57	36	8	74	20	26	5	364	90
		PERCENT									
Percent Return	1	66.2	62.5	56.9	48.3	54.5	56.4	69.4	55.6	63.5	58.9
	2*	68.6	87.6	65.0	72.6	67.4	71.5	63.4	83.3	67.6	82.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; ORN HORT - Ornamental Horticulture

* - Includes questionnaires which were returned by relatives indicating only that graduates' occupational status was military service.

Table 2 presents the number and percent of instruments returned by 1970 graduates.

TABLE 2

Number and Percent of Questionnaires Returned by 1970 Graduates and Their Employers the First and Second Year by Specialized Area of Training

	Follow-up Year	Number of Persons								Total All Areas	
		FPM		CONS		AG MECH		ORN HORT			
		Graduates	Employers	Graduates	Employers	Graduates	Employers	Graduates	Employers	Graduates	Employers
No. Receiving Questionnaires	1	149	36	173	40	134	43	69	20	525	139
	2	73	18	83	30	71	28	41	12	268	88
No. Returning Questionnaires	1	77	18	86	30	73	28	43		279	88
	2	50	12	59	16	47	17	21		177	54
Percent * Return		PERCENT									
	1	52	50	50	75	54	65	62	60	53	63
	2	69	67	71	53	66	61	51	75	66	61

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; ORN HORT - Ornamental Horticulture

* Rounded to the nearest whole number. Includes 11 graduates (1st year) and 32 graduates (2nd year) reported to be in military service.

Analysis of the Data

The study data was analyzed through these steps:

1. The responses from graduates and employers were coded on the questionnaires and then keypunched on IBM 80-column computer cards. Cards were sorted for analysis.

2. The data was summarized as to marginal frequencies, percentages, and means, using Cornell University computer facilities.

3. Summary tables to present the data were constructed.

4. Findings were identified and listed.

FINDINGS

The findings of the study are presented in the sections that follow.

Place of Residence Last Two Years of High School

Place of residence during the last two years of high school -- i.e. while enrolled in occupational classes in agriculture, provides a picture of the type of student being attracted into agriculture classes. Table 3 shows the data on place of residence for 1970 graduates as reported in the first year follow-up. The significant findings are:

1. The highest percentage of students living on a farm operated full-time by family was highest for farm production and management students (50.7%) followed by agricultural mechanization students (39.4%).

2. Over 90 percent of conservation and ornamental horticulture students did not live on farms operated by their family.

TABLE 3

Place of Residence Last Two Years of High School
for 1970 Agriculture Graduates by Specialized Area of Training

Place of Residence	Percent of Graduates				
	FPM	CONS	AG MECH	ORN HORT	Total
Farm Operated Full-Time by Family	50.7	2.4	39.4	7.1	26.1
Farm Operated Part-Time by Family	19.2	8.4	8.5	0.0	10.0
Not on Farm Operated by Family	21.9	33.7	22.5	28.6	26.9
Other	8.2	55.4	29.6	61.9	36.9
No Response	0.0	0.0	0.0	2.4	0.1
Total Percent	100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; ORN HORT - Ornamental Horticulture

Location of Agriculture Classes

Agriculture classes are offered in central schools and Boards of Cooperative Education Services (B. O. C. E. S.) area occupational centers. Table 4 presents the location of classes as reported by 1970 graduates in the first year follow-up. The major findings are:

1. Three-quarters of farm production and management classes and about one-half of ornamental horticulture classes are offered in central schools. This is in contrast to conservation and agricultural mechanization classes where eighty-nine and seventy-three percent, respectively, are offered in the B. O. C. E. S. centers.

2. There is little (maximum of 4%) mobility of students between agriculture classes offered in B. O. C. E. S. and central schools.

TABLE 4

Location of Classes for 1970
Agriculture Graduates

Location of Training	FPM (N = 73)	CONS (N = 83)	AG MECH (N = 71)	ORN HORT (N = 41)	Total (N = 268)
B.O.C.E.S. (2 years)	21.9	89.2	73.2	36.1	59.0
High School (2 years)	74.0	7.2	19.7	47.6	35.1
B.O.C.E.S. (1 yr.) and High School (1 year)	4.1	2.4	0.0	2.4	2.2
Other	0.0	1.2	4.2	9.5	3.0
No Response	0.0	0.0	2.8	2.4	0.7

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; ORN HORT - Ornamental Horticulture

Occupational Status of Graduates - (Tables 5 and 6)

The first and second year occupational status of 1968 and 1970 New York State secondary agricultural graduates is shown in Tables 5 and 6, respectively. The important findings in occupational status are:

1. Thirty-nine percent of 1968 graduates and 47 percent of 1970 graduates are employed. The increase in percentage of employed 1970 graduates over 1968 graduates is mainly reflected in a lower (13%) percentage of 1970 graduates in military service than for 1968 graduates.

2. Eleven percent of second year 1970 graduates reported being unemployed compared to only 2 percent of 1968 graduates.

3. Conservation students had the highest percentage of overall unemployment (20%) and farm production and management the lowest (4%).

4. Almost one quarter of all graduates went on to college, almost all going to two-year colleges in New York State. Farm production and management graduates had the highest percentage going to college (30-35%) and conservation graduates, the lowest (7-14%).

Length of, and Reasons for Unemployment - (Tables 7 and 8)

Data on length of unemployment and reasons for unemployment is available for 1970 graduates only. Graduates were about evenly divided in being unemployed three or less months and over three months. One-half of the unemployment was due to "Slack season lay-off". Only 2 graduates out of 23 were unable to find employment.

TABLE 5

First and Second Year Occupational Status of 1968 Secondary Agricultural Graduates by Specialized Area of Training

Occupational Status	Follow Up Year	Percent of Graduates *				Total All Areas
		FPM	CONS	AG MECH	ORN HORT	
	1	(N=370)	(N=39)	(N=85)	(N=45)	(N=569)
	2	(N=228)	(N=36)	(N=74)	(N=26)	(N=364)
Employed full or part-time & not attending any post high school or college or training more than part-time	1	38	44	53	49	percent 41
	2	37	36	45	35	39
In military service	1	24	44	30	33	27
	2	25	47	38	42	31
Four-year college in New York State	1	4	0	0	0	3
	2	6	0	1	0	4
Two-year college in New York State	1	27	7	13	20	22
	2	29	8	11	12	22
Other post high school training in New York State	1	2	4	4	2	3
	2	0	0	1	0	1
Four-year college outside New York State	1	2	0	0	0	1
	2	1	0	0	0	1
Two-year college outside New York State	1	1	0	0	1	1
	2	0	0	1	0	1
Other post high school training outside New York State	1	1	0	0	2	1
	2	0	0	0	0	1
Unemployed	1	1	1	0	5	1
	2	1	0	1	0	2

* Includes graduates reported to be in military service. Percentages rounded to nearest whole number.

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; ORN HORT - Ornamental Horticulture

TABLE 6

First and Second Year Occupational Status of 1970 Secondary Agricultural Graduates by Specialized Area of Training

Occupational Status	Follow Up Year	Percent of Graduates *				Total
		FPM	CONS	AG MECH	ORN HORT	All Areas
	1	(N=77)	(N=86)	(N=73)	(N=43)	(N=279)
	2	(N=50)	(N=59)	(N=47)	(N=21)	(N=177)
						percent
Employed full or part-time & not attending any post high school or college or train- more than half-time	1	40	51	51	39	46
	2	42	36	60	62	47
In military service	1	8	13	5	5	7
	2	18	32	6	2	18
Four-year college in New York State	1	4	0	0	0	1
	2	4	0	0	0	1
Two-year college in New York State	1	35	12	21	28	23
	2	30	14	21	14	20
Other post high school training in New York State	1	1	5	0	7	3
	2	0	2	0	0	1
Four-year college outside New York State	1	0	0	0	0	0
	2	0	2	2	0	1
Two-year college outside New York State	1	0	2	3	0	1
	2	0	0	0	0	0
Unemployed	1	5	20	11	7	11
	2	4	15	10	19	11
Other	1	4	1	4	7	3
	2	2	0	0	0	0
No response	1	3	1	5	0	4
	2	0	0	0	0	0

* Includes graduates reported to be in military service. Percentages rounded to nearest whole number.

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; ORN HORT - Ornamental Horticulture

TABLE 7

Number of Months Unemployed 1970 Graduates
Had Been Out of Work the Second Year

Time Category	Number of Graduates (N = 20)				Total
	FPM	CONS	AG MECH	ORN HORT	
Less than one month	1	2	1	-	4
One to two months	-	1	1	1	3
Two to three months	-	1	-	1	2
More than 3 months	1	4	3	2	10
No response	-	1	-	-	1
Total	2	9	5	4	20

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 8

Reasons Why Unemployed 1970 Graduates
Were Out of Work the Second Year

Reason	Number of Graduates (N = 20)				
	FPM	CONS	AG MECH	ORN HORT	Total
Injured or disabled	-	2	-	-	2
Illness	-	-	-	1	1
Unable to find employment	-	-	1	1	2
Waiting to join military service	-	-	-	-	-
Waiting to attend college	-	-	1	-	1
Slack season lay-off	1	6	2	1	10
Disliked work in former job	-	1	-	-	1
Quit job to get married	-	-	-	1	1
No response	1	-	1	-	2
Total number	2	9	5	4	20

Future Occupational Plans - (Tables 9 and 10)

The future occupational plans of the 1968 and 1970 graduates are provided in Tables 9 and 10, respectively. The major findings in the data are:

1. Thirty-eight to 52 percent of 1970 graduates either were uncertain of their future occupational plans or did not respond to the question on the questionnaire. The range for 1968 graduates was 17 to 41 percent.

2. The distribution of occupational plans did not differ greatly between 1968 and 1970 graduates.

3. Of the graduates reporting plans, the area of agricultural specialization trained for was stated by a higher percentage than was any other category. Two exceptions were agricultural mechanization graduates who expressed a higher percentage of plans to enter farming than their specialization and second year plans of ornamental horticulture graduates.

4. The percentage of 1968 graduates who planned to enter non-agricultural industry ranged from a low of 12 percent for farm production and management graduates to a high of 32 percent for agricultural mechanization graduates. The range for 1970 graduates was from about 7 percent for farm production and management graduates to 31 percent for ornamental horticulture graduates.

5. About one-quarter of agricultural mechanization graduates planned to enter farming.

6. Farm production and management graduates had the highest total percentage of the four areas of specialization for plans to enter farming, off-farm agricultural industry or further education related to agriculture.

TABLE 9

Future Occupational Plans of 1968
Secondary Agricultural Graduates

Future Plans	Follow up Year	Percent of Graduates			
		FPM	CONS	AG MECH	ORN HORT
	1	(N=291)	(N=36)	(N=53)	(N=29)
	2	(N=184)	(N=24)	(N=50)	(N=15)
Farming	1	39.2	4.9	27.9	6.1
	2	39.1	16.7	20.0	6.7
Off-farm related agricultural industry	1	19.2	31.7	18.0	42.4
	2	19.0	25.0	8.0	13.3
Non-agriculture industry	1	12.0	19.5	19.7	12.1
	2	15.2	16.7	32.0	20.0
Further education related to agriculture	1	6.2	4.9	1.6	6.1
	2	2.2	0.0	8.1	0.0
Further education not related to agriculture	1	1.4	2.4	1.6	3.0
	2	0.0	4.2	4.0	0.0
Military service	1	3.8	9.8	4.9	3.0
	2	0.0	0.0	0.0	6.7
Uncertain	1	9.6	14.6	13.1	15.2
	2	0.0	13.0	11.0	20.0
None	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
No response	1	8.6	12.2	13.1	12.1
	2	10.3	25.0	18.0	33.0
Total percent		99.0	99.9	99.9	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 10

Future Occupational Plans of 1970
Secondary Agricultural Graduates

Future Plans	Follow Up Year	Percent of Graduates			
		FPM	CONS	AG MECH	ORN HORT
	1	(N=73)	(N=83)	(N=71)	(N=41)
	2	(N=41)	(N=40)	(N=44)	(N=20)
Farming	1	37.0	7.2	23.9	2.4
	2	39.1	23.8	25.0	15.4
Off-farm related agricultural industry	1	8.2	25.4	12.7	26.2
	2	7.4	4.8	20.4	7.7
Non-agriculture industry	1	6.9	10.8	23.9	7.1
	2	19.5	19.0	16.0	30.8
Further education related to agriculture	1	8.2	7.2	2.8	4.8
	2	4.8	0.0	0.0	0.0
Further education not related to agriculture	1	0.0	0.0	1.4	7.1
	2	0.0	0.0	0.0	7.7
Military service	1	0.0	10.8	0.0	0.0
	2	0.0	4.8	0.0	0.0
Uncertain	1	15.1	15.7	12.7	21.4
	2	4.8	28.6	11.4	7.7
None	1	2.7	0.0	1.4	0.0
	2	0.0	0.0	2.2	0.0
No response	1	21.9	22.9	21.1	31.0
	2	24.3	19.0	25.1	30.8
Total percent		100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

Employed Graduates

This section presents employment related data for graduates that were employed. The percent of employed graduates for the several follow-up years ranges from 41 to 47 percent. Non-employed graduates include those attending college or other post secondary education, those in military service and graduates that are unemployed. Tables 5 and 6 in the earlier sections of this report provide detailed information on the occupational status of graduates.

Applicable table numbers are referenced next to section headings for the reader's convenience.

Method of Obtaining Employment - (Tables 11 and 12)

The job seek methods used by 1970 graduates to obtain their first full-time job after graduation (Table 11) were primarily of an informal nature. For all graduates, use of friends or relatives was most frequently used (34%) followed by "Other" (29.7%). Use of state or private employment offices was almost nil while only one in twenty gained employment through the school.

The pattern of job seek methods used to locate second year jobs for both 1968 and 1970 graduates (Table 12) followed a pattern similar to that found for first-year positions.

Time Required to Obtain First Full-Time Job - (Table 13)

An average of over 42 percent of 1970 graduates continued full-time after graduation in jobs held prior to graduation. The remaining graduates were about evenly divided in obtaining full-time employment within 4 weeks, and 5 or more weeks, respectively.

Farm production and management graduates had the highest percentage (56.3%) continuing in pregraduation jobs, and ornamental horticulture graduates had the lowest (25%) percentage.

TABLE 11

Methods Used by Employed 1970 Secondary Agricultural Graduates to Obtain First Full-Time Job after Graduation

Method	Percent of Employed Graduates				
	FPM (N=34)	CONS (N=44)	AG MECH (N=40)	ORN HORT (N=20)	Total (N=138)
Through the school	2.9	4.5	7.5	5.0	5.1
Through a friend or relative	52.9	18.3	30.0	45.0	34.1
Application at Personnel office	8.8	36.4	20.0	5.0	20.3
U. S. or State Employment Service	0.0	0.0	0.0	0.0	0.0
Private employment service	0.0	0.0	2.5	0.0	0.7
Heard about it on radio or television	0.0	0.0	0.0	0.0	0.0
Through a newspaper ad	2.9	6.8	0.0	0.0	2.9
Other	32.4	22.7	35.0	30.0	29.7
No full-time job since graduation	0.0	6.8	0.0	10.0	3.6
No response	0.0	4.5	5.0	5.0	3.6
Total Percent	100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 12

Methods Used by Employed 1968 and 1970 Secondary Agricultural Graduates to Obtain Second Year Full-Time Jobs

Method	Year of Graduates	Percent of Employed Graduates				
		FPM	CONS	AG MECH	ORN HORT	Total
	1968	(N=85)	(N=13)	(N=33)	(N= 8)	(N=139)
	1970	(N=21)	(N=21)	(N=26)	(N=13)	(N= 81)
Through the school	1968	3.5	7.7	12.1	12.5	6.5
	1970	0.0	0.0	7.7	0.0	2.5
Through a friend or relative	1968	75.3	23.1	57.6	23.0	63.3
	1970	47.6	47.6	34.6	38.3	42.0
Application at Personnel office	1968	8.2	36.5	21.2	25.0	15.1
	1970	23.8	23.8	11.5	15.4	18.5
U. S. or State Employment Service	1968	1.2	0.0	0.0	0.0	0.7
	1970	0.0	4.8	0.0	0.0	1.2
Private employment service	1968	1.2	0.0	0.0	0.0	0.7
	1970	0.0	0.0	0.0	7.7	1.2
Hear about it on radio or television	1968	0.0	0.0	0.0	12.5	0.7
	1970	0.0	0.0	0.0	0.0	0.0
Through a newspaper ad	1968	2.4	7.7	0.0	0.0	2.2
	1970	0.0	0.0	3.8	7.7	2.5
Other	1968	5.9	7.7	3.0	12.5	5.8
	1970	19.0	14.3	30.8	30.8	23.5
No full-time job since graduation	1968	0.0	0.0	0.0	0.0	0.0
	1970	0.0	4.8	0.0	0.0	1.2
No response	1968	2.4	15.4	6.1	12.5	5.0
	1970	9.5	4.8	11.5	0.0	7.4
Total percent	1968	100.0	100.0	100.0	100.0	100.0
	1970	100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 13

Time Required by Employed 1970 Secondary Agricultural Graduates to Obtain First Full-Time Job by Specialized Area of Training

Time (in Weeks) After Graduation	Percent of Employed Graduates				
	FPM (N=34)	CONS (N=44)	AG MECH (N=40)	ORN HORT (N=20)	Total (N=138)
One week or less	5.9	13.6	15.0	15.0	12.3
Two	11.8	4.5	2.5	0.0	5.1
Three	0.0	2.3	7.5	5.0	3.6
Four	0.0	2.3	2.5	10.0	2.9
Five or more	17.7	36.4	17.5	30.0	25.4
Employed in job held before graduation	58.7	31.8	50.0	25.0	42.8
No response	5.9	9.1	5.0	15.0	7.9
Total percent	100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

Employment Status: Classified and Perceived - (Tables 14 to 17)

The employment status of graduates is presented on two bases. First is a classification by Dictionary of Occupational Titles (D. O. T.) and Standard Industrial Classification (S. I. C.). The second basis used for classification is the graduates' perception as to the relationship of their job to agriculture.

Classification by D. O. T. and S. I. C. - (Tables 14 and 15)

A comparison of the second year occupational status of 1968 graduates (Table 14) with that of similar status for 1970 graduates (Table 15) shows the percentage of graduates working in the area of agriculture for which education was received to be 43.9 percent and 23.4 percent, respectively. The comparative percentages of the same graduates employed in related agricultural jobs is 12.9 percent and 16 percent.

Farm production and management graduates had the highest percentage working in their area of education (67% for 1968 graduates and 50% for 1970 graduates). Conservation graduates had the lowest percentage (less than 8%) working in their area of education. The data showed that a much larger percentage of 1970 agricultural mechanization graduates (about 35%) were working in their area of education than were 1968 graduates (only 3%). The questionnaires returned showed a large number of 1968 agricultural mechanization graduates returning to farming.

Occupational Status by Graduates' Perception - (Tables 16 and 17)

When classified by graduates, the number of graduates working in the area for which education was received is generally higher. In some cases, the differences are surprising -- sixty percent of 1970 agricultural mechanization graduates perceive their first-year jobs to be in their area of education (Table 17) where only about 38 percent are so classified under D. O. T. and S. I. C.

TABLE 14

Employment Status of 1968 Employed Secondary Agricultural Graduates Classified by Standard Industrial Classification (S. I. C.) and Dictionary of Occupational Titles (D. O. T.)* - Second Year Follow-Up

Employment Status	Percent of Employed Graduates				
	FPM (N=85)	CONS (N=13)	AG MECH (N=33)	ORN HORT (N= 8)	Total (N=139)
Employed in area of agriculture trained for	67.1	7.7	3.0	25.0	43.9
Employed in related agricultural job	1.2	15.4	42.4	12.5	12.9
Not employed in agriculture	28.2	76.9	54.5	62.5	41.0
Not classified (insufficient information)	3.5	0.0	0.0	0.0	2.2
No response	0.0	0.0	0.0	0.0	0.0
Total percent	100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 15

Employment Status of 1970 Employed Secondary Agricultural Graduates Classified by Standard Industrial Classification (S. I. C.) and Dictionary of Occupational Titles (D. O. T.)*

Employment Status	Follow-up Year	Percent of Employed Graduates				
		FPM	CONS	AG MECH	ORN HORT	Total
	1	(N=34)	(N=44)	(N=40)	(N=20)	(N=138)
	2	(N=21)	(N=21)	(N=25)	(N=13)	(N= 81)
Employed in area of agriculture trained for	1	50.0	6.8	37.5	30.0	29.7
	2	47.6	4.8	34.6	23.1	28.4
Employed in related agricultural job	1	8.8	6.8	17.5	20.0	12.3
	2	19.0	0.0	30.8	7.7	16.0
Not employed in agriculture	1	41.2	84.1	42.5	50.0	56.5
	2	28.6	95.2	34.6	69.2	54.3
Not classified (insufficient information)	1	0.0	0.0	2.5	0.0	0.7
	2	4.8	0.0	0.0	0.0	1.2
No response	1	0.0	2.3	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0
Total percent		100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

* S. I. C. Codes and D. O. T. Titles classified as agriculture are listed in the Appendix of this report

TABLE 16

Percent of Employed 1968 Secondary Agricultural Graduates Working in Their Area of Specialized Training the Second Year as Perceived by Graduates

Employment Status	Percent of Employed Graduates				
	FPM (N=85)	CONS (N=13)	AG MECH (N=33)	ORN HORT (N= 8)	Total (N=139)
Employed in specialized area	67.1	15.4	27.3	37.5	51.1
Not employed in specialized area	30.6	76.9	69.7	62.5	46.0
No response	2..	7.7	3.0	0.0	2.9
Total percent	100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 17

Percent of Employed 1970 Secondary Agricultural Graduates Working In Their Area of Specialized Training the First and Second Years as Perceived by Graduates

Employment Status	Follow-up Year	Percent of Employed Graduates				
		FPM	CONS	AG MECH	ORN HORT	Total
	1	(N=34)	(N=44)	(N=40)	(N=20)	(N=138)
	2	(N=21)	(N=21)	(N=26)	(N=13)	(N= 81)
Emoloyed in specialized area	1	44.2	9.1	60.0	45.0	37.7
	2	57.1	0.0	46.2	23.1	33.3
Not employed in specialized area of training	1	52.9	88.6	37.5	50.0	59.9
	2	42.9	100.0	46.2	76.9	64.2
No response	1	2.9	2.3	2.5	5.0	2.9
	2	0.0	0.0	7.7	0.0	2.5
Total percent		100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

Reasons for Not Working in Area of Education - (Tables 18 and 19)

Graduates in 1968 listed a variety of reasons (Table 18) at less than 15 percent for not working in their area of education in second year jobs. In contrast, over 50 percent of 1970 graduates responded that "No job available in area of training" was their reason the first year. Other jobs paying more was the next most frequent reason listed.

Interest in Working in Area of Education - (Table 20 and 21)

In an extension of the topic in the preceding section, graduates were asked if they would be interested in working in their area of education if employment was available. Ninety-two percent of 1968 graduates and a very high percentage of 1970 graduates (95% and 69% for the first and second year respectively) indicated a similar interest.

TABLE 18

Reasons Listed by 46 Percent* of the Employed 1968 Secondary Agricultural Graduates for Not Working in Their Area of Specialized Education the Second Year

Reasons	Percent* of Employed Graduates**				
	FPM (N=26)	CONS (N=10)	AG MECH (N=23)	ORN HORT (N= 5)	Total (N=64)
No job available in area trained for	7.1	38.5	24.2	12.5	14.4
Decided they liked other job better	11.8	15.4	27.3	12.5	15.8
Liked hours of other job better	9.4	0.0	6.1	25.0	8.6
Other job paid more	9.4	23.1	30.3	12.5	15.8
Other	5.9	15.4	12.1	12.5	8.6

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

* Refers only to the graduates not employed in area of specialized training from the preceding table.

** Instrument was structured such that individual graduates could respond by indicating up to 5 reasons.

TABLE 19

Reasons Listed by Employed 1970 Secondary Agricultural Graduates for Not Working in Their Area of Specialized Education the First and Second Years*

Reasons	Follow up Year	Percent* of Employed Graduates**				
		FPM	CONS	AG MECH	ORN HORT	Total
	1	(N=18)	(N=39)	(N=15)	(N=10)	(N=82)
	2	(N= 9)	(N=21)	(N=12)	(N=10)	(N=52)
No job available in area of training	1	44.5	53.7	40.0	70.0	51.3
	2	44.8	52.4	11.5	30.8	23.5
Decided liked other job better	1	27.8	10.2	13.3	40.0	18.3
	2	19.0	14.3	7.7	7.7	12.3
Liked the hours of other job better	1	22.2	7.7	6.7	20.0	12.2
	2	19.0	14.3	3.8	0.0	9.3
Other job paid more	1	33.4	10.2	33.3	10.0	19.5
	2	23.8	19.0	15.4	38.5	22.2
Other	1	5.5	30.7	33.3	30.0	25.6
	2	9.5	23.8	15.4	15.4	16.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

* Refers only to the graduates not employed in the area of their specialized training from the preceding table.

** Instrument was structured such that individual graduates could respond by indicating up to 5 reasons.

TABLE 20

Percent of Employed 1968 Secondary Agricultural Graduates Working Outside Their Area of Training the Second Year Interested in Working in Area of Education if Employment was Available

Response	Percent* of Employed Graduates**				
	FPM (N=26)	CONS (N=10)	AG MECH (N=23)	ORN HORT (N= 5)	Total (N=64)
Yes	96	80	83	100	92
No	4	20	07	0	8
No Response	0	0	0	0	0
Total Percent	100	100	100	100	100

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

* Rounded to nearest whole number

** Refers only to the graduates not employed in the area of their specialized training

TABLE 21

Percent of Employed 1970 Secondary Agricultural Graduates Working Outside Their Area of Training the Second Year Interested in Working in Area of Education if Employment was Available

Response	Follow-up year	Percent* of Employed Graduates				
		FPM	CONS	AG MECH	ORN HORT	Total
	1	(N=18)	(N=39)	(N=15)	(N=10)	(N=82)
	2	(N= 9)	(N=21)	(N=12)	(N=10)	(N=52)
Yes	1	83	97	87	100	95
	2	56	81	58	80	69
No	1	17	03	13	0	05
	2	44	14	33	20	25
No Response	1	0	0	0	0	0
	2	0	5	09	10	6
Total Percent		100	100	100	100	100

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

* Refers only to the graduates not employed in the area of their specialized training. Rounded to nearest whole number.

Present Job Position - (Table 22)

Collection of information on the types of positions held began with 1970 graduates. Therefore, data on 1968 graduates is not available.

About two-thirds of graduates are in hourly wage positions with over one-half of the remaining third in salaried employment. The next two largest categories of positions are "Working on the home farm" and "Self-employed", respectively.

Full-Time or Part-Time Employment - (Tables 23 and 24)

Over 93 percent of 1968 graduates reported full-time second year employment. Graduates in 1970 reported 90 percent in full-time employment for a comparable period. These figures are particularly significant due to the seasonal and part-time nature of some agricultural jobs.

TABLE 22

Postions Held by 1970 Employed Secondary Agricultural Graduates in First and Second Year Jobs

Position	Follow-up Year	Percent of Employed Graduates				
		FPM	CONS	AG MECH	ORN HORT	Total
	1	(N=34)	(N=44)	(N=40)	(N=20)	(N=138)
	2	(N=21)	(N=21)	(N=26)	(N=13)	(N= 81)
Hourly worker	1	52.9	77.3	57.5	70.0	64.5
	2	47.6	66.7	57.7	69.2	59.3
Salaried worker	1	14.7	11.4	10.0	15.0	12.3
	2	23.8	14.3	19.2	15.4	18.5
Partner	1	2.9	0.0	5.0	0.0	2.2
	2	0.0	0.0	3.8	0.0	1.2
Manager	1	5.9	0.0	5.0	10.0	4.3
	2	0.0	0.0	0.0	7.7	1.2
Working on home farm	1	14.7	6.8	15.0	0.0	10.1
	2	14.3	4.8	15.4	0.0	9.9
Self-employed (Owner)	1	5.9	2.3	2.5	5.0	3.6
	2	9.5	4.8	3.8	7.7	6.2
Other	1	2.9	2.3	2.5	0.0	2.2
	2	4.8	9.5	0.0	0.0	3.7
No response	1	0.0	0.0	2.5	0.0	0.7
	2	0.0	0.0	0.0	0.0	0.0
Total Percent		100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 23

Percent of Employed 1968 Secondary Agricultural Graduates that Held Full-Time or Part-time Jobs the Second Year by Specialized Area of Training

Type of Job	Percent of Employed Graduates				
	FPM (N=85)	CONS (N=13)	AG MECH (N=33)	ORN HORT (N= 8)	Total (N=139)
Full-time	89.4	92.3	94.0	100.0	91.4
Part-time	5.8	0.0	0.0	0.0	3.6
Full-time at more than one job	2.4	0.0	3.0	0.0	2.2
No response	2.4	7.7	3.0	0.0	2.9
Total Percent	100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 24

Percent of Employed 1970 Secondary Agricultural Graduates that Held Full-time or Part-time Jobs the Second Year by Specialized Area of Training

Type of Job	Percent* of Employed Graduates				
	FPM (N=21)	CONS (N=21)	AG MECH (N=26)	ORN HORT (N=13)	Total (N=81)
Full-time	100	86	89	85	90
Part-time	00	14	04	08	07
Working full-time at more than one job	00	00	00	00	00
No response	00	00	07	07	3
Total Percent	100	100	100	100	100

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

* Rounded to nearest whole number

Wages Received - (Tables 25 and 26)

The percentage of 1968 and 1970 graduates working at minimum wage levels the second year is 30.0 percent and 17 percent, respectively. Another interesting finding is that over 27 percent of 1968 graduates and 30 percent of 1970 graduates are making over $3.00 per hour or are self-employed. A higher percentage (38.8%) of 1968 farm production and management graduates were working at minimum wage levels than were graduates of other specialized areas of agriculture. No such difference existed for 1970 graduates.

Tenure in Present Job - (Table 27)

The job holding power of graduates is indicated by the length of tenure in their present (second-year) jobs. Table 27 shows that over 83 percent of 1968 graduates and over 70 percent of 1970 graduates had tenure of seven or more months in second-year jobs. Almost one-half of 1968 graduates and over one-fourth of 1970 graduates had held the same job since graduation.

Number of Jobs Held - (Tables 28 and 29)

A second index of job holding power is the number of jobs held by graduates since graduation. Data for 1968 graduates is number of full-time jobs held (Table 28). For 1970 graduates, data on both full-time and part-time jobs is provided. As would be expected from the preceding section on job tenure, a large majority of graduates have held only one full-time job since graduation. Twenty percent of 1970 graduates have held one part-time job with a minor percentage holding more than one. The "No response" category in Table 29 for part-time jobs should be interpreted as the graduates having held no part-time jobs.

TABLE 25

Wages Received by Employed 1968 Secondary Agricultural Graduates in Second Year Jobs

Wage Range in Dollars per Hour	Percent of Employed Graduates				
	FPM (N=85)	CONS (N=13)	AG MECH (N=33)	ORN HORT (N= 8)	Total (N=139)
$1.50 - $2.00	38.8	7.7	27.3	0.0	30.9
$2.01 - $2.50	9.4	23.1	15.2	37.5	13.7
$2.51 - $3.00	10.6	38.5	15.2	37.5	15.8
Above $3.00	7.1	23.1	24.2	12.0	12.9
Self-employed	20.0	0.0	9.1	0.0	14.4
Other (monthly, etc.)	0.0	0.0	0.0	0.0	0.0
No response	14.1	7.6	9.0	12.5	12.3
Total Percent	100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 26

Wages Received by Employed 1970 Secondary Agricultural Graduates in Second Year Jobs

Wage Range in Dollars per Hour	Percent* of Employed Graduates				
	FPM (N=21)	CONS (N=21)	AG MECH (N=26)	ORN HORT (N=13)	Total (N=81)
$1.60 - $2.00	14	14	23	16	17
$2.01 - $2.50	10	19	12	23	15
$2.51 - $3.00	10	19	8	31	15
Above $3.00	19	29	27	15	24
Self-employed	9	0	8	[illegible]	[illegible]
Other	29	19	11	7	17
No response	9	0	11	0	6
Total Percent	100	100	100	100	100

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

* Rounded to nearest whole number

TABLE 27

Length of Time 1968 and 1970 Employed Secondary Agricultural Graduates have Worked in Their Present Job - Second Year Follow-up

Time in Months	Yr. of Follow-up	Percent of Employed Graduates				
		FPM	CONS	AG MECH	ORN HORT	Total
	1968	(N=85)	(N=13)	(N=38)	(N= 8)	(N=133)
	1970	(N=21)	(N=21)	(N=26)	(N=13)	(N= 81)
Less than one	1968	3.5	7.7	0.0	0.0	2.9
	1970	9.5	0.0	7.7	7.7	6.2
1 - 6	1968	10.6	7.7	15.2	50.0	13.7
	1970	19.0	28.6	19.2	38.5	24.7
7 - 12	1968	10.6	7.7	15.2	12.5	11.5
	1970	14.3	23.8	15.4	15.4	17.3
More than 12	1968	9.4	30.8	36.4	25.0	18.7
	1970	28.6	23.8	23.1	23.1	24.7
Since high school grad.	1968	63.5	38.5	27.3	12.5	49.6
	1970	28.6	23.8	34.6	15.4	27.2
No response	1968	2.4	7.7	6.1	0.0	3.6
	1970	0.0	0.0	0.0	0.0	0.0
Total Percent		100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 28

Percent of Second Year Employed 1968 Secondary Agricultural Graduates by Number of Full-Time Jobs Held Since Graduation

Number of Full-time Jobs	Percent of Employed Graduates				
	FPM (N=85)	CONS (N=13)	AG MECH (N=33)	ORN HORT (N= 8)	Total (N=139)
One	71.8	38.5	57.6	62.5	64.7
Two	10.6	30.8	21.2	12.5	15.1
Three	4.7	7.7	3.0	12.5	5.0
More than three	2.4	0.0	6.1	0.0	2.9
No response	10.5	23.1	12.1	12.5	12.3
Total Percent	100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 29

Percent of Second Year Employed 1970 Secondary Agricultural Graduates by Number of Full-time and Part-time Jobs Held Since Graduation

Number of Jobs	Percent* of Employed Graduates									
	FPM (N=21)		CONS (N=21)		AG MECH (N=26)		ORN HORT (N=13)		Total (N=81)	
	F-T	P-T	F-T	P-T	F-T	P-T	F-T	P-T	F-T	P-T
One	62	29	52	23	70	8	46	23	59	20
Two	24	5	29	10	15	8	23	8	22	7
Three	0	10	5	10	12	0	23	0	9	5
More than three	14	5	0	10	0	0	0	0	3	4
No response **	0	51	14	47	3	84	8	69	7	64
Total Percent	100	100	100	100	100	100	100	100	100	100

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

F-T is Full-Time; P-T is Part-Time

* Rounded to nearest whole number

** No response to part-time jobs should be interpreted as graduates having held only full-time jobs.

Promotions and/or Pay Raises Received - (Tables 30 and 31)

Over 46 percent of all 1970 graduates reported promotions in second year jobs as compared with only 17.2 percent of 1968 graduates. No 1968 conservation or ornamental horticulture graduates reported self-employed status. For 1970 graduates, self-employed status was reported by graduates in all areas.

Data on pay raises is in contrast to that of promotions. Only 11.1 percent of 1970 graduates received pay raises the second year (Table 31) while over one-half (52.5%) of 1968 graduates reported pay raises (Table 30).

Classification of Promotions and Pay Raises - (Tables 32 and 33)

One-half of promotions received by all 1968 graduates in second year jobs were to a supervisory capacity. Twenty-five percent obtained partnerships but this reflects only graduates in farm production and management. In contrast, promotions for 1970 graduates were greatest to higher skill levels. Table 32 is calculated only on those graduates receiving promotions and/or pay raises. Table 33 is computed on all employed graduates so relative percentages within Tables 32 and 33 will need to be used in order to interpret meaningful comparisons between the tables.

Pay raises received by the highest number of both 1968 and 1970 graduates was for $10.00 per week or less. Some graduates, however, reported pay raises of over $40.00 per week.

Education Provided by Employers - (Tables 34 to 36)

Approximately one-fourth of all employed 1968 and 1970 graduates were provided additional education by employers.

The nature of the education provided for 1968 graduates is presented in Table 36. (No comparable data is available for 1970 graduates). After the "Other" category, "On the job" is the most frequent type of education reported as being provided.

TABLE 30

Percent of Employed 1968 Secondary Agricultural Graduates Reporting Promotions and/or Pay Raises in Their Second Year Job

Category	Percent of Employed Graduates				
	FPM (N=85)	CONS (N=13)	AG MECH (N=33)	ORN HORT (N= 8)	Total (N=139)
Received promotion	17.6	7.7	15.2	37.5	17.2
Did not receive promotion	55.3	76.9	60.6	62.5	59.0
Self-employed	23.5	0.0	15.2	0.0	18.0
No response	3.5	15.4	9.1	0.0	5.8
Total Percent	100.0	100.0	100.0	100.0	100.0
Received pay raise	49.4	69.2	57.5	37.5	52.5
Did not receive pay raise	25.9	15.4	21.2	62.5	25.9
Self-employed	21.2	0.0	15.2	0.0	16.5
No response	3.5	15.4	6.1	0.0	5.0
Total Percent	100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 31

Percent of Employed 1970 Secondary Agricultural Graduates Reporting Promotions and/or Pay Raises in Their Jobs the First and Second Years by Specialized Area of Training

Category	Follow-up Year	Percent of Employed Graduates				
		FPM	CONS	AG MECH	ORN HORT	Total
	1	(N=34)	(N=44)	(N=40)	(N=20)	(N=138)
	2	(N=21)	(N=21)	(N=26)	(N=13)	(N= 81)
Received promotion	1	44.1	45.5	45.0	55.5	46.4
	2	47.6	52.4	34.6	61.5	46.9
Did not receive promotion	1	44.1	45.5	40.0	40.0	42.8
	2	33.3	38.1	57.7	30.8	42.0
Self-employed	1	11.8	6.8	12.5	5.0	9.4
	2	9.5	4.8	7.7	7.7	7.4
No response	1	0.0	2.3	2.5	0.0	1.4
	2	9.5	4.8	0.0	0.0	3.7
Total Percent		100.0	100.0	100.0	100.0	100.0
Received pay raise	1	8.8	13.6	12.5	55.0	12.3
	2	14.3	19.0	3.8	7.7	11.1
Did not receive pay raise	1	79.4	77.3	72.5	40.0	76.8
	2	66.7	71.4	84.6	84.6	76.5
Self-employed	1	11.8	6.8	12.5	5.0	9.4
	2	9.5	4.8	7.7	7.7	7.4
No response	1	0.0	2.3	2.5	0.0	1.4
	2	9.5	4.8	3.8	0.0	4.9
Total Percent		100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 32

Classification of Promotions and Pay Raises Reported by 1968 Secondary Agricultural Graduates in Their Second Year Jobs by Specialized Area of Training

Category	Percent* of Employed Graduates				
	FPM	CONS	AG MECH	ORN HORT	Total
Type of Promotion	(N=14)	(N= 2)	(N= 5)	(N= 3)	(N=24)
To higher skill level	7.1	0.0	40.0	33.3	16.7
To supervisory capacity	42.9	100.0	60.0	33.3	50.0
To partnership	42.9	0.0	0.0	0.0	25.0
Other	7.1	0.0	0.0	33.3	8.3
No response	0.0	0.0	0.0	0.0	0.0
Type of Pay Raise	(N=42)	(N= 9)	(N=19)	(N= 3)	(N=73)
$10/week or less	31.0	33.3	36.8	0.0	31.5
$11 - $20/week	7.1	0.0	10.5	0.0	9.6
$21 - $30/week	9.5	22.2	5.3	0.0	6.8
$31 - $40/week	4.8	0.0	0.0	33.3	4.1
Over $40/week	11.9	0.0	10.5	0.0	11.0
Other non-monetary	0.0	11.1	0.0	0.0	0.0
No response	35.7	33.3	36.8	66.6	37.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

* Includes only those employed graduates reporting promotions and/or pay raises.

TABLE 33

Classification of Promotions and Pay Raises Reported by 1975 Secondary Agricultural Graduates in Their Second Year Jobs by Specialized Area of Training

Category	Percent of Employed Graduates				
	FPM	CONS	AG MECH	ORN HORT	Total
Type of Promotion	(N=21)	(N=21)	(N=26)	(N=13)	(N=81)
To higher skill level	14.3	23.8	11.5	30.8	18.5
To supervisory capacity	9.5	4.8	7.7	0.0	6.2
To partnership	9.5	0.0	0.0	7.7	3.7
Other	9.5	9.5	7.7	15.4	9.9
No promotion received	42.9	42.9	61.5	38.4	48.1
No response	14.3	19.0	11.5	7.7	13.6
Total Percent	100.0	100.0	100.0	100.0	100.0
Type of Pay Raise	(N=21)	(N=21)	(N=26)	(N=13)	(N=81)
$10/week or less	4.8	4.8	3.8	0.0	3.7
$11 - $20/week	0.0	9.5	0.0	0.0	2.5
$21 - $30/week	4.8	0.0	0.0	7.7	2.5
$31 - $40/week	0.0	0.0	0.0	0.0	0.0
Over $40/week	0.0	4.8	0.0	0.0	1.2
Other non-monetary	0.0	0.0	0.0	0.0	0.0
No pay raise received	76.2	76.2	92.3	92.3	84.0
No response	14.3	4.8	3.8	0.0	6.2
Total Percent	100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 34

Percent* of Employed 1968 Secondary Agricultural Graduates Provided Additional Training by Employers the Second Year by Specialized Area of Training

Category	Percent* of Employed Graduates			
	FPM (N=85)	CONS (N=13)	AG MECH (N=33)	ORN HORT (N=139)
Provided additional training by employer	25.9	23.1	21.2	25.0
Were not provided additional training by employer	65.9	69.2	66.7	75.0
No response	8.2	7.7	12.1	0.0
Total Percent	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

* Excludes graduates who reported "self-employed" employment status.

TABLE 35

Percent of Employed 1970 Secondary Agricultural Graduates Provided Additional Training by Employers by Specialized Area of Training

Category	Follow-up Year	Percent of Employed Graduates				
		FPM	CONS	AG MECH	ORN HORT	Total
	1	(N=34)	(N=44)	(N=40)	(N=20)	(N=138)
	2	(N=21)	(N=21)	(N=26)	(N=13)	(N= 81)
Provided additional training by employer	1	17.7	15.9	15.0	35.0	18.8
	2	4.8	9.5	7.7	30.8	11.1
Not provided additional training by employer	1	67.6	77.3	67.5	60.0	69.6
	2	76.2	81.0	80.8	61.5	76.5
Self-employed	1	11.8	4.5	12.5	5.0	8.7
	2	9.5	4.8	2.7	7.7	7.4
No response	1	2.9	2.3	5.0	0.0	2.9
	2	9.5	4.8	3.8	0.0	4.9
Total Percent		100.0	100.0	100.0	100.0	99.9

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 36

Classification of Additional Training Provided by Employers to Employed 1986 Secondary Agricultural Graduates the Second Year by Specialized Area of Training

Type of Training Received	Percent of Employed Graduates				
	FPM (N=85)	CONS (N=13)	AG MECH (N=33)	ORN HORT (N= 6)	Total (N=139)
On the job	9.4	7.7	--	25.0	7.9
Apprentice	1.2	--	3.0	--	1.4
Night school	1.2	--	3.0	--	1.4
Welding school	--	7.7	6.1	--	2.2
Other	15.3	7.7	9.1	--	12.2
No training received (not applicable)	64.7	69.2	66.7	75.0	66.3
No response	8.2	7.7	12.1	--	8.6
Total Percent	100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

Job Satisfaction - (Tables 37 to 48)

Optimal occupational education prepares persons for satisfaction as well as success in the world of work. This section examines graduates' job satisfaction in terms of overall satisfaction and the five component facts of "people worked with", "supervision received", "work required", "promotions available", and "pay received".

It is important to collect data on both overall satisfaction and satisfaction with component factors because the sum of the components is not necessarily equivalent to overall satisfaction. For example, a person could be highly satisfied with pay, supervision, people worked with and promotions available while at the same time very dissatisfied with the work required. This dissatisfaction with work could be great enough to cause low overall satisfaction despite the high satisfaction with the other four components.

The data in this section should be interpreted recognizing this relationship between overall satisfaction and satisfaction with the various component areas.

Overall Satisfaction - (Tables 37 and 38)

The overall job satisfaction of 1968 graduates in second year jobs is high. Over three-quarters reported being "satisfied" or "somewhat satisfied" (Table 37). Within specialized areas of education, farm production and management graduates had the highest satisfaction (83.5% in satisfied range) and conservation graduates had the lowest level of satisfaction with 53.9% in the satisfied range.

In comparison with 1968 graduates, the overall satisfaction of 1970 graduates was only slightly lower (Table 36) with 72.8% in the satisfied range. As with 1968 graduates, farm production and management graduates had the highest satisfaction (81.3% in the satisfied range the second year) and conservation graduates had the lowest level of satisfaction (66.7%).

TABLE 37

Overall Job Satisfaction of All Employed 1968 Secondary Agricultural Graduates the Second Year by Specialized Area of Training

Specialized Area		Percent of Employed Graduates (N=139)						
		Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Dissatisfied	No Response	Total
FPM	N=	64.7	15.3	5.9	4.7	3.5	2.4	100.5
CONS	N=	38.5	15.4	15.4	7.7	7.7	15.4	100.1
AG MECH	N=	45.5	18.2	6.1	12.1	12.1	6.1	100.5
ORN HORT	N=	37.5	37.5	0.0	0.0	12.5	12.5	100.0
Total Group	N=	56.1	19.4	6.5	6.5	6.5	5.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 3c

Overall Job Satisfaction of Employed 1977 Secondary Agricultural Graduates the First and Second Year by Specialized Area of Training

Specialized Area		Follow-up Year	Percent of Employed Graduates						
			Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Dissatisfied	No Response	Total Percent
FPM	(N=34)	1	50.0	29.4	8.8	8.8	2.9	0.0	100.0
	(N=21)	2	57.1	23.8	0.0	4.8	9.5	4.8	100.0
CONS	(N=44)	1	36.4	22.7	13.6	18.2	2.3	6.8	100.0
	(N=21)	2	23.8	42.9	14.3	14.3	0.0	4.8	100.0
AG MECH	(N=40)	1	45.0	25.0	7.5	10.0	5.0	7.5	100.0
	(N=26)	2	42.3	30.8	11.5	7.7	0.0	7.7	100.0
ORN HORT	(N=20)	1	55.0	10.0	25.0	10.0	0.0	0.0	100.0
	(N=13)	2	53.8	15.4	23.1	0.0	7.7	0.0	100.0
Total Group	(N=138)	1	44.9	23.2	12.3	12.3	2.9	4.3	100.0
	(N=81)	2	43.2	29.6	11.1	7.4	3.7	4.9	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

Satisfaction with Component Areas - (Tables 39 and 40)

All 1968 graduates reported no major differences in satisfaction with component areas. Satisfaction with "promotions available" and "pay received" were slightly lower than other areas (Table 39).

Table 40 for 1970 graduates shows satisfaction with "promotions available" and "pay received" to be lower than satisfaction with the other three components. Less than one-half of 1970 graduates reported in the satisfied range for pay and promotions while approximately three-quarters of graduates reported corresponding satisfaction for the other components.

Satisfaction by Specialized Areas of Education (Tables 41-48)

Farm production and management graduates in both 1968 and 1970 were most satisfied with "people with whom they work" and least satisfied with "pay received". The 1970 graduates in second year jobs have approximately 10 percent less "satisfied" in component areas than do 1968 graduates with the exception of in "work required" which is approximately equal (Tables 41 and 42).

Satisfaction by farm production and management students is the highest of all specialized areas of education. Conservation graduates (Tables 43-44) have the lowest satisfaction of all four specialized areas of education. Satisfaction with "people worked with" and "supervision received" is high (over 2/3 of graduates were in the satisfied range). In contrast, satisfaction with "promotions available", "pay received" and "work required" was considerably lower. Also, satisfaction (in second year jobs) with component areas excepting "people worked with" was 10 percent or more lower for 1970 graduates than for 1968 graduates.

TABLE 39

Job Satisfaction of All Employed 1968 Secondary Agricultural Graduates in Second Year Jobs

Job Situation	Percent of Employed Graduates						
	Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Dissatisfied	No Response	Total (N=139)
People with whom they worked	66.9	12.9	7.9	4.3	1.4	6.5	99.9
The supervision they received	66.2	12.9	3.4	1.4	3.6	6.5	100.0
The work required	59.7	17.3	7.9	5.8	3.6	5.8	100.1
The promotions available	46.2	14.4	2[illegible].9	2.9	10.8	7.2	100.1
The pay received	42.4	21.6	11.5	9.4	7.9	7.2	100.0

TABLE 4.1

Job Satisfaction of All Employed 1976 Secondary Agricultural Graduate

Job Condition	Follow-up Year	Percent of Employed Graduates (First year N=138) (Second year N=81)						
		Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Dissatisfied	No Response	Total
People with whom they worked	1	73.2	12.3	5.1	6.5	3.7	2.2	100.0
	2	67.9	13.6	7.4	1.2	2.5	7.4	100.0
The supervision they received	1	68.2	12.3	7.2	8.0	2.9	1.4	100.0
	2	61.8	12.3	11.2	4.9	1.2	8.6	100.0
The work required	1	67.5	10.1	11.6	4.3	5.1	1.4	100.0
	2	55.6	17.3	6.2	8.6	3.7	8.6	100.0
The promotions available	1	39.2	12.3	18.8	10.1	16.7	2.9	100.0
	2	33.1	11.1	24.7	6.2	13.6	11.1	100.0
The pay received	1	37.0	23.9	12.3	10.9	13.0	2.9	100.0
	2	36.2	14.8	19.8	9.9	9.9	7.4	100.0

TABLE 41

Job Satisfaction of Employed Post Secondary Agricultural Graduates Trained in Farm Production and Management

Job Condition	Percent of Employed Graduates						
	Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Dissatisfied	No Response	Total (N=85)
People with whom they worked	75.3	12.9	4.7	2.4	0.0	4.7	100.0
The supervision they received	72.9	12.9	7.1	2.4	0.0	4.7	100.0
The work required	65.9	17.6	8.2	2.4	2.4	3.5	100.0
The promotions available	54.1	12.9	17.6	2.4	7.1	5.9	100.0
The pay received	49.4	16.5	10.6	9.4	5.9	5.9	100.0

TABLE 42

Job Satisfaction of Employed 1975 Secondary Agricultural Graduates Trained in Farm Production and Management

Job Condition	Follow-up Year	Percent of Employed Graduates (First year N=34) (Second year N=21)						
		Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Dissatisfied	No Response	Total
People with whom they worked	1	79.4	11.8	2.9	5.9	0.0	0.0	100.0
	2	61.9	19.0	4.8	4.8	0.0	9.5	100.0
The supervision they received	1	79.4	11.8	8.8	0.0	0.0	0.0	100.0
	2	66.6	9.5	4.8	0.0	4.8	14.3	100.0
The work required	1	67.7	14.7	14.7	0.0	2.9	0.0	100.0
	2	66.6	14.3	0.0	4.8	4.8	9.5	100.0
The promotions available	1	38.2	14.7	26.5	11.8	8.8	0.0	100.0
	2	42.8	14.3	9.5	4.8	14.3	14.3	100.0
The pay received	1	38.2	32.4	8.8	11.8	8.8	0.0	100.0
	2	38.1	14.3	23.8	4.8	9.5	9.5	100.0

TABLE 4.3

Job Satisfaction of Employed 1968 Secondary Agricultural Graduates Trained in Conservation

Job Condition	Percent of Employed Graduates						
	Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Dissatisfied	No Response	Total (N=13)
People with whom they worked	76.9	7.7	0.0	0.0	7.7	7.7	100.0
The supervision they received	61.5	7.7	15.4	0.0	7.7	7.7	100.0
The work required	30.8	38.5	7.7	7.7	7.7	7.7	100.1
The promotions available	46.2	0.0	30.8	0.0	15.4	7.7	100.1
The pay received	38.5	15.4	30.8	7.7	0.0	7.7	100.1

TABLE 44

Job Satisfaction of Employed 1973 Secondary Agricultural Graduates Trained in Conservation

Job Condition	Follow-up Year	Percent of Employed Graduates (First year N=44) (Second year N=21)						
		Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Dissatisfied	No Response	Total
People with whom they worked	1	65.9	13.6	6.8	9.1	0.0	4.5	99.9
	2	61.6	14.3	14.3	0.0	4.8	4.8	100.0
The supervision they received	1	65.9	11.4	6.8	11.4	2.3	2.3	100.1
	2	66.6	9.5	14.3	4.8	0.0	4.8	100.0
The work required	1	56.8	13.6	11.4	11.4	4.5	2.3	100.0
	2	38.2	19.0	14.3	19.0	0.0	9.5	100.0
The promotions available	1	34.2	13.6	13.6	9.1	22.7	6.8	100.0
	2	28.6	9.5	19.0	14.3	14.3	14.3	100.0
The pay received	1	25.0	29.5	11.4	11.4	15.9	6.8	100.0
	2	28.6	23.8	23.8	19.0	0.0	4.8	100.0

Graduates in agricultural mechanization were least satisfied with "promotions available" and "pay received". Interestingly, 1968 graduates were less satisfied with "work required" and "people worked with" than were 1970 graduates.

Relative satisfaction with component areas by ornamental horticulture graduates (Tables 47 - 48) was similar to that for agricultural mechanization graduates. The first year satisfaction of 1970 horticulture graduates with "promotions available" was low (45% of graduates were "dissatisfied"). Neither 1968 graduates nor 1970 graduates reported a comparable low satisfaction level for this component in second year jobs.

TABLE 45

Job Satisfaction of Employed 1968 Secondary Agricultural Graduates Trained in Agricultural Mechanization

Job Condition	Percent of Employed Graduates						
	Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Dissatisfied	No Response	Total (N=33)
People with whom they worked	42.4	18.2	81.2	9.1	0.0	12.1	100.0
The supervision they received	51.5	15.2	12.1	0.0	9.1	12.1	100.0
The work required	51.5	9.1	9.1	15.2	3.0	12.1	100.0
The promotions available	36.4	3.0	24.2	6.1	18.2	12.1	100.0
The pay received	30.3	21.2	9.1	12.1	15.2	12.1	100.0

TABLE 45

Job Satisfaction of Employed 1970 Secondary Agricultural Graduates Trained in Agricultural Mechanization

Job Condition	Follow-up Year	Percent of Employed Graduates (First year N=40) (Second year N=26)						
		Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Dissatisfied	No Response	Total
People with whom they worked	1	75.0	12.5	2.5	7.5	0.0	2.5	100.0
	2	84.6	3.8	3.8	0.0	0.0	7.7	99.9
The supervision they received	1	67.5	15.0	2.5	7.5	5.0	2.5	100.0
	2	50.0	15.4	15.4	11.5	0.0	7.7	100.0
The work required	1	77.5	7.5	7.5	0.0	5.0	2.5	100.0
	2	65.4	15.4	0.0	3.8	7.7	7.7	100.0
The promotions available	1	52.5	10.0	20.0	12.5	2.5	2.5	100.0
	2	26.9	7.7	42.3	3.8	11.5	7.7	99.9
The pay received	1	52.5	17.5	12.5	10.0	5.0	2.5	100.0
	2	42.3	11.5	11.5	11.5	15.4	7.7	99.9

TABLE 47

Job Satisfaction of Employed 1968 Secondary Agricultural Graduates Trained in Ornamental Horticulture

Job Condition	Percent of Employed Graduates						
	Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Dissatisfied	No Response	Total (N = 8)
People with whom they worked	62.5	0.0	12.5	12.5	12.5	0.0	100.0
The supervision they received	62.5	12.5	12.5	0.0	12.5	0.0	100.0
The work required	75.0	12.5	0.0	0.0	12.5	0.0	100.0
The promotions available	37.5	25.0	25.0	0.0	12.5	0.0	100.0
The pay received	25.0	62.5	0.0	0.0	12.5	0.0	100.0

TABLE 48

Job Satisfaction of Employed 1971 Secondary Agricultural Graduates Trained in Ornamental Horticulture

Job Condition	Follow-up Year	Percent of Employed Graduates (First year N=20) (Second year N=13)						
		Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Dissatisfied	No Response	Total
People with whom they worked	1	75.0	10.0	10.0	0.0	5.0	0.0	100.0
	2	53.8	23.1	7.7	0.0	7.7	7.7	100.0
The supervision they received	1	55.0	10.0	15.0	15.0	5.0	0.0	100.0
	2	69.2	15.4	7.7	0.0	0.0	7.7	100.0
The work required	1	70.0	0.0	15.0	5.0	10.0	0.0	100.0
	2	46.2	23.1	15.4	7.7	0.0	7.7	100.1
The promotions available	1	25.0	10.0	15.0	5.0	45.0	0.0	100.0
	2	30.8	15.4	23.1	7.0	15.4	7.7	100.1
The pay received	1	30.0	10.0	20.0	10.0	30.0	0.0	100.0
	2	46.2	7.7	23.1	0.0	15.4	7.7	100.1

Relevance of Education - (Tables 49 to 53)

This section examines the relevance of education in agriculture provided to graduates as perceived by graduates and their employers. Data is presented on the employers' evaluation of graduates' qualification for their jobs, employer evaluation of graduates' potential for advancement, and the percentage of agricultural knowledges and abilities perceived by both graduates and employers as "essential" or "desirable" to the graduates' jobs.

In addition, a rank order of individual agricultural knowledges and abilities by need for each of the specialized areas of education is presented in Appendices D-1 to D-4

Qualification of Graduates for Jobs - (Tables 49 and 50)

The evaluation by employers of the graduates' qualification for their jobs shows only one graduate as not qualified. Approximately three-quarters of all graduates were "well qualified" with the remaining graduates rated as "meets minimum qualifications".

Potential of Graduates for Advancement - (Table 51)

Collection of data on graduates' potential for advancement was initiated with 1970 graduates. The data in this section therefore includes only this group -- i.e. 1968 graduates are excluded.

Examination of Table 51 shows that for second-year jobs, 29.7 per cent of all graduates are judged to have potential for advancement to either "partner", "manager" or "owner". The potential percentage of graduates for "salaried worker" is 31.5 per cent and only 36.3 per cent of graduates were rated as having potential limited to hourly worker.

In contrast to graduates in other specialized areas of education, no ornamental horticulture graduates were rated as having potential for "partner" or "owner".

TABLE 49

Employer Evaluation of Employed 1968 Secondary Agricultural Graduates' Qualification for Second Year Jobs by Specialized Area of Training

Qualification Level	Percent of Employed Graduates				
	FPM (N=57)	CONS (N= 8)	AG MECH (N=20)	ORN HORT (N= 5)	Total (N=90)
Well qualified	77.2	75.0	70.0	60.0	74.4
Meets minimum qualifications	15.8	25.0	20.0	40.0	18.9
Not qualified, needs additional training	0.0	0.0	5.0	0.0	1.1
No response	7.0	0.0	5.0	0.0	5.6
Total Percent	100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 50

Employer Evaluation of Employed 1970 Secondary Agricultural Graduates' Qualification for First and Second Year Jobs by Specialized Area of Training

Qualification Level	Follow-up Year	Percent of Employed Graduates				
		FPM	CONS	AG MECH	ORN HORT	Total
	1	(N=18)	(N=30)	(N=28)	(N=12)	(N=88)
	2	(N=12)	(N=16)	(N=17)	(N= 9)	(N=54)
Well qualified	1	66.7	56.7	60.7	33.3	56.8
	2	66.7	87.5	55.6	55.6	70.4
Meets minimum qualifications	1	27.8	36.7	32.1	66.7	37.5
	2	25.0	12.5	44.4	44.4	25.9
Not qualified, needs additional training	1	0.0	3.3	7.1	0.0	3.4
	2	8.3	0.0	0.0	0.0	3.7
No response	1	5.6	3.3	0.0	0.0	2.3
	2	0.0	0.0	0.0	0.0	0.0
Total Percent		100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 51

Employer Evaluation of 1978 Secondary Agricultural Graduates' Highest Potential for Advancement in First and Second Year Employment by Specialized Area of Training

Type of Position	Follow-up Year	Percent of Employed Graduates				
		FPM	CONS	AG MECH	ORN HORT	Total
	1	(N=18)	(N=30)	(N=28)	(N=12)	(N=88)
	2	(N=12)	(N=16)	(N=17)	(N= 9)	(N=54)
Hourly worker	1	22.2	50.0	35.7	25.0	35.3
	2	25.0	18.8	29.4	0.0	25.9
Salaried worker	1	44.4	30.9	14.3	25.0	27.3
	2	16.7	43.8	35.3	0.0	31.5
Partner	1	11.1	0.0	21.4	0.0	9.9
	2	16.7	6.3	5.9	0.0	5.6
Manager	1	5.6	10.0	7.1	41.7	12.5
	2	25.0	6.3	17.6	0.0	18.5
Owner	1	5.6	3.3	10.7	0.0	5.8
	2	16.7	18.8	11.8	0.0	5.6
Other	1	5.6	3.3	10.7	0.0	5.8
	2	0.0	6.3	0.0	0.0	11.1
No response	1	5.6	3.3	0.0	8.3	3.4
	2	0.0	0.0	0.0	100.0	1.9
Total Percent		100.0	100.0	100.0	100.0	100.0

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

Need for Education - (Tables 52 and 53)

Graduates and their employers rated the need for 46 agricultural knowledges and abilities in the graduates' jobs. Data was collected by specialized area of education in agriculture.

For 1968 graduates, less than 46 percent of knowledges and abilities were rated "essential" or "desirable". Ratings by employers were less than 40 percent of knowledges and abilities (Table 52).

In the ratings for 1970 graduates' second year jobs, graduates rated less than 37 percent of knowledges and abilities as "essential" or "desirable" and employers gave a response of less than 33 percent in a comparable rating.

In general, the need for knowledges and abilities in farm production and management was greater than was the need for knowledges and abilities in other specialized areas of education. Differences between employer and graduate ratings were present but not in any identifiable pattern.

TABLE 52

Percent of Knowledges and Abilities in Each Area of Specialized Training that Were Ranked "Essential" to "Desirable" (3.0-2.0) As To Need for Education in 1968 Secondary Agriculture Graduates' Second Year Jobs

Respondent	Percent of Knowledges and Abilities (N=46)*			
	FPM	CONS	AG MECH	ORN HORT
Graduates	45.7	10.9	13.0	6.5
Employers	39.1	19.6	21.7	19.6

* N is the number of knowledges for the specialized areas of education.

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 53

Percent of Knowledges and Abilities in Each Area of Specialized Training that Were Ranked "Essential" to "Desirable" (3.0-2.0) as to Need for Education in 1970 Secondary Agricultural Graduates' First and Second Year Jobs

Respondent	Follow-up Year	Percent of Knowledges and Abilities (N=45)*			
		FPM	CONS	AG MECH	ORN HORT
Graduates	1	60	32	57	53
	2	23	23	36	28
Employers	1	9	11	17	9
	2	32	17	28	23

* N is the number of knowledges and abilities for the specialized areas of education.

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

Image of Farming and Agricultural Related Industry (Tables 54 to 59)

The occupational image data analyzed in this section of the report provides information on the view (image) held by graduates of farming and off-farm agricultural related industry. The images held may or may not be valid depending upon the validity of data used as a basis for the image and the objectivity with which individuals perceive the data. However, to the individual holding the image, his view is reality and that person makes decisions and takes action on that basis, e.g., future occupational plans, continuation of employment and sharing his image with others.

The image scores reported reflect a cumulative score for 14 items rated on a scale of "agree", "neutral", and "disagree". For each item a positive image was assigned the value of "3", a neutral image a value of "2", and a negative image a value of "1", making the maximum image score 42 (14 items X 3) and the minimum score 14 (14 items X 1).

Data is reported in terms of the percentage of graduates whose image score fell within a range of scores in each of the quartiles of the range of scores from 42 - 14, and the mean image scores by groups of graduates.

Images Held by 1968 Graduates - (Tables 54 to 56)

Images held by 1968 graduates of farming and off-farm agricultural related industry were mostly positive. All mean scores were higher than 30 for farming and above 32 for agricultural related industry.

As might be expected, graduates in conservation, agricultural mechanization and ornamental horticulture held a more positive image of agricultural related industry than they did of farming. However, the same was true of farm production and management graduates which was not predicted.

TABLE 54

Distribution of Occupational Image Scores* of 1968 Second Year Secondary Agricultural Graduates for Farming and Off-Farm Agricultural Related Industry

Type of Industry	Image Level (Score)	Percent of Graduates			
		FPM (N=184)	CONS (N=24)	AG MECH (N=50)	ORN HORT (N=15)
Farming	High Positive (35-42)	22.1	8.4	1.4	13.4
	Positive (28-34)	63.0	58.4	68.0	60.0
	Negative (21-27)	12.5	29.3	14.0	20.0
	Low Negative (14-20)	0.5	0.0	2.0	0.0
	No Response	1.1	4.2	2.0	6.7
	Mean Score	31.51	30.27	30.94	30.53
Off-Farm Agricultural Related	High Positive (35-42)	43.5	33.4	34.0	20.0
	Positive (28-34)	49.0	54.2	54.0	73.4
	Negative (21-27)	5.9	8.4	10.0	0.0
	Low Negative (14-21)	0.0	0.0	0.0	0.0
	No Response	1.1	4.2	2.0	6.7
	Mean Score	33.68	34.62	32.87	32.59

* Scores range from a minimum of 14 to a maximum of 42

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - ornamental Horticulture

TABLE 55

Distribution of Occupational Image Scores* of Employed 1968 Second Year Secondary Agricultural Graduates for Farming and Off-Farm Agricultural Related Industry

Type of Industry	Image Level (Score)	Percent of Graduates			
		FPM (N=65)	CONS (N=13)	AG MECH (N=33)	ORN HORT (N= 8)
Farming	High Positive (35-42)	22.4	7.7	15.1	12.5
	Positive (28-34)	65.9	30.5	63.8	50.0
	Negative (21-27)	8.3	46.2	21.2	37.5
	Low Negative (14-20)	1.2	0.0	0.0	0.0
	No Response	2.4	7.7	0.0	0.0
	Mean Score	31.99	25.10	30.58	28.38
Off-Farm Agricultural Related	High Positive (35-42)	36.6	30.5	51.3	25.0
	Positive (28-34)	54.1	38.5	60.7	75.0
	Negative (21-27)	7.3	15.4	3.1	0.0
	Negative (14-21)	0.0	0.0	0.0	0.0
	No Response	2.4	7.7	0.0	0.0
	Mean Score	33.32	36.10	32.67	32.88

* Scores range from a minimum of 14 to a maximum of 42

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 55

Distribution of Occupational Image Scores* of Non-Employed 1988 Second Year Secondary Agricultural Graduates for Farming and Off-Farm Agricultural Related Industry

Type of Industry	Image Level (Score)	Percent of Graduates			
		FPM (N=99)	CONS (N=11)	AG MECH (N=17)	ORN HORT (N= 7)
Farming	High Positive (35-42)	22.2	9.1	11.8	14.3
	Positive (28-34)	55.7	81.9	76.5	71.5
	Negative (21-27)	16.1	9.1	0.0	0.0
	Low Negative (14-20)	0.0	0.0	5.9	0.0
	No Response	0.0	0.0	5.9	14.3
	Mean Score	31.23	32.70	31.60	32.24
Off-Farm Agricultural Related	High Positive (35-42)	40.5	27.3	41.3	14.3
	Positive (28-34)	44.5	72.8	41.3	71.5
	Negative (21-27)	5.0	0.0	11.8	0.0
	Low Negative (14-21)	0.0	0.0	0.0	0.0
	No Response	0.0	0.0	5.9	14.3
	Mean Score	34.05	33.36	33.41	32.23

*Scores range from a minimum of 14 to a maximum of 42

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

Non-employed (includes graduates in school, and unemployed) graduates in general tended to hold somewhat more positive images than did employed graduates. The major exception to this was employed conservation graduates whose image score of agricultural related industry was three points higher than non-employed graduates.

Images Held by 1970 Graduates - (Tables 57 to 59)

Images of farming and agricultural related industry held by all 1970 graduates the second year were positive. The mean scores for farming was 56.52 and 32.60 was the comparable score for agricultural related industry (Table 57).

Examination of scores for graduates in the specialized areas of education shows farm production and management graduates to hold the most positive image of both farming and agricultural related industry.

The image scores of 1970 graduates the first and second year were generally comparable. Also, only minor differences existed between employed and non-employed 1970 graduates.

TABLE 57

Distribution of Occupational Image Scores* of 1970 Second Year Secondary Agricultural Graduates for Farming and Off-Farm Agricultural Related Industry

Type of Industry	Image Level (Score)	Percent of Graduates				
		FPM (N=41)	CONS (N=40)	AG MECH (N=44)	ORN HORT (N=20)	Total (N=145)
Farming	High Positive (35-42)	17.1	17.5	6.9	0.0	12.4
	Positive (28-34)	63.4	55.0	70.4	45.0	60.0
	Negative (21-27)	19.5	27.5	18.2	50.0	25.5
	Low Negative (14-20)	0.0	0.0	0.0	0.0	0.0
	No Response	0.0	0.0	4.5	5.0	2.1
	Mean Score	31.85	30.38	29.41	27.43	30.52
Off-Farm Agricultural Related	High Positive (35-42)	51.3	15.0	38.6	0.0	34.4
	Positive (28-34)	46.3	77.5	52.3	65.0	55.2
	Negative (21-27)	0.0	7.5	9.1	30.0	9.0
	Low Negative (14-21)	2.4	0.0	0.0	0.0	0.7
	No Response	0.0	0.0	0.0	5.0	0.7
	Mean Score	33.63	32.53	33.14	27.85	32.63

*Scores range from a minimum of 14 to a maximum of 42

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 58

Distribution of Occupational Image Scores* of Employed 1978 Second Year Secondary Agricultural Graduates for Farming and Off-Farm Agricultural Related Industry

Type of Industry	Image Level (Score	Percent of Graduates				
		FPM (N=21)	CONS (N=21)	AG MECH (N=26)	ORN HORT (N=13)	Total (N=81)
Farming	High Positive (35-42)	23.8	19.1	7.6	0.0	13.6
	Positive (28-34)	61.9	52.3	65.7	53.8	59.2
	Negative (21-27)	14.3	28.6	22.9	38.5	24.7
	Low Negative (14-20)	0.0	0.0	0.0	0.0	0.0
	No Response	0.0	0.0	3.8	7.7	2.5
	Mean Score	32.48	30.76	30.24	27.83	30.61
Off-Farm Agricultural Related	High Positive (35-42)	52.3	38.1	30.6	0.0	33.5
	Positive (28-34)	42.9	47.6	58.0	53.8	50.5
	Negative (21-27)	0.0	14.3	11.4	38.5	13.6
	Low Negative (14-21)	4.8	0.0	0.0	0.0	1.2
	No Response	0.0	0.0	0.0	7.7	1.2
	Mean Score	33.24	32.52	32.69	26.42	32.15

*Scores range from a minimum of 14 to a maximum of 42

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

TABLE 59

Distribution of Occupational Image Scores* of Non-Employed 1970 Second Year Secondary Agricultural Graduates for Farming and Off-Farm Agricultural Related Industry

Type of Industry	Image Level (Score)	Percent of Graduates				
		FPM (N=20)	CONS (N=19)	AG MECH (N=18)	ORN HORT (N= 7)	Total (N=64)
Farming	High Positive (35-42)	10.0	15.8	11.1	0.0	12.7
	Positive (28-34)	55.0	57.9	77.7	42.9	61.0
	Negative (21-27)	25.0	26.3	5.6	57.1	26.0
	Low Negative (14-20)	0.0	0.0	0.0	0.0	0.0
	No Response	0.0	0.0	5.6	0.0	1.6
	Mean Score	31.2	30.06	31.87	27.35	30.41
Off-Farm Agricultural Related	High Positive (35-42)	55.0	15.8	44.4	14.3	36.0
	Positive (28-34)	45.0	84.2	50.0	71.4	61.0
	Negative (21-27)	0.0	0.0	5.6	14.3	3.0
	Low Negative (14-21)	0.0	0.0	0.0	0.0	0.0
	No Response	0.0	0.0	0.0	0.0	0.0
	Mean Score	34.05	32.44	33.75	31.82	33.17

*Scores range from a minimum of 14 to a maximum of 42

FPM -Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

Relationship of College Majors to Secondary Education in Agriculture - (Table 60)

The concluding section of this report deals with the relationship between the major fields of study selected by 1970 graduates and their education in agriculture during high school. This relationship provides information on the "preparatory" dimension of secondary education in agriculture for those graduates aspiring to technical and professional level positions.

Almost one-half (47.5%) of 1970 graduates in college the second year had a major field of study directly related to their high school education in agriculture. An additional 27.5 percent of graduates had majors related to, i.e. in agriculture, their secondary agricultural study.

In contrast to graduates of other specialized areas, over one-half (55.6) of conservation graduates had college majors "not related" to their study in agriculture during high school.

TABLE 60

Relationship Between Majors of 1970 Graduates in College the Second Year to Their High School Education in Agriculture

Relationship of College Major to High School Educ. in Agr.	Percent of Employed Graduates				
	FPM (N=17)*	CONS (N= 9)*	AG MECH (N=11)*	ORN HORT (N= 3)*	Total (N=42)*
Directly related (same area of agriculture)	53.0	22.2	63.6	33.3	47.6
Related (in agriculture)	29.4	22.2	27.3	33.3	27.5
Not related (outside agriculture)	17.6	55.6	9.1	33.3	25.0
No response	0.0	0.0	0.0	0.0	0.0
Total Percent	100.0	100.0	100.0	99.9	100.0

* Includes only those graduates attending college the second year

FPM - Farm Production and Management; CONS - Conservation; AG MECH - Agricultural Mechanization; and ORN HORT - Ornamental Horticulture

SUMMARY OF FINDINGS

1. Most farm production graduates, and the majority of agricultural mechanization graduates lived on family operated farms during high school. Most graduates in conservation and ornamental horticulture did not live on family operated farms during the same period.

2. Classes for conservation and agricultural mechanization graduates were mostly offered by Boards of Cooperative Education Services (B. O. C. E. S.). Farm production and management classes were primarily offered in central schools while offerings of ornamental horticulture classes were about evenly divided between central schools and B. O. C. E. S.

3. About 4.. percent of 1968 graduates and 5J percent of 1970 graduates were employed. The balance of graduates were in college or other type of post-secondary education, in military service or unemployed.

4. Approximately one-fourth of 1970 graduates and three-tenths of 1968 graduates were in college at the end of the second year.

5. Second-year unemployment of 1968 graduates was 2 percent compared to 11 percent for 1970 graduates. The most common reason given for unemployment was "Slack season lay-off."

6. One-third to one-half of graduates were "uncertain" or gave no response as to future occupational plans. The next most frequent response was "The area of agricultural specialization trained for." Graduates in 1968 and 1970 did not differ greatly in the nature of their occupational plans.

7. Almost three-quarters of the 1970 graduates attending college had majors in agriculture. About one-half had majors directly related to their high school education in agriculture.

8. Job seek methods used by graduates were primarily of an informal nature, i.e. information from friends and relatives.

9. Over 40 percent of 1970 graduates continued full-time in jobs held prior to graduation. Another 24 percent found employment in 4 weeks or less.

10. Fifty-one percent of 1968 graduates and 33.3 percent of 1970 graduates perceived that they were working in their area of education in agriculture the second year. Classification of graduates jobs by the U. S. D. L. Dictionary of Occupational Titles and Standard Industrial Classification Manual showed a lower percentage. Farm production and management graduates had the highest percentage of graduates working in their area of education and conservation graduates had the lowest percentage.

11. "No job available" was the most frequent reason listed by 1970 graduates for not working in their area of education. For 1968 graduates, "Other job paid more" was listed slightly higher than "No job available".

12. Almost all graduates working outside their area of education in agriculture were interested in working in their area if employment was available.

13. About one-third of 1970 employed graduates were in other than hourly wage positions. Almost all employed graduates reported full-time employment.

14. Twenty-seven percent of 1968 graduates and 30 percent of 1970 graduates reported making over $3.00 per hour or self employment. The number of 1968 and 1970 graduates working at minimum wage were 31 and 17 percent respectively.

15. Eighty-three percent of 1968 graduates and 70 percent of 1970 graduates had held their second year jobs for seven or more months.

16. A majority of graduates had held the same full-time job since graduation from high school.

17. Seventeen percent of 1968 graduates and 46 percent of 1970 graduates received promotions. The percentages of 1968 and 1970 graduates receiving pay raises are 52 and 11 percent respectively.

18. About one-fourth of all 1968 and 1970 graduates were provided additional training by employers.

19. Approximately three-quarters of 1968 and 1970 graduates reported overall job satisfaction in the satisfied range, i.e. "satisfied" or "somewhat satisfied". Satisfaction with the components of job satisfaction was least for "Pay received" and "Promotions available".

20. Farm production and management graduates were the most satisfied with their jobs and conservation graduates expressed the lowest level of satisfaction.

21. About three-fourths of all employed graduates were rated by employers as "Well qualified" for their jobs. Only one graduate was rated as "Not qualified".

22. Approximately 80 percent of 1970 graduates were judged by their employers as having potential for advancement to either "Partner", "Manager" or "Owner". An additional 31.5 percent of graduates were rated as having potential for "Salaried worker".

23. Graduates in 1960 rated less than 40 percent of agricultural knowledges and abilities as needed in their jobs. A comparable rating by employers was 40 percent of knowledges and abilities. Nineteen-seventy graduates and their employers rated the need for the knowledges and abilities at 37 and 33 percent respectively.

Both employers and graduates rated positive job habits and attitudes as being highly needed in the graduates' jobs.

24. Occupational images held by graduates of farming and off-farm agricultural related industry were generally positive. The mean scores were about 36 for farming and 32 for off-farm agricultural related out of a score range of 14-42. Farm production and management graduates held the most positive image of both farming and off-farm agricultural related industry and ornamental horticulture graduates held the least positive image. Surprisingly, the image held by farm production and management graduates of farming was somewhat lower than for off-farm related industry. Graduates in other areas held images in a similar relationship.

CONCLUSIONS AND RECOMMENDATIONS

From the analysis of the data, the following conclusions and recommendations are drawn:

1. The relatively high number of graduates without defined future occupational plans indicates a need for increased career guidance services by schools.

2. Over one-fourth of agricultural graduates are attending college. This trend needs to be acknowledged in the planning of course curricula. The positive contribution of education in agriculture to the career goals of graduates in college is reflected in three-quarters of these graduates pursuing a major field of study in agriculture.

3. The reason for the greater percentage of farm production and management graduates going on to college may be due to the practice of offering farm production and management courses in central schools. Other specialized courses in agriculture are offered primarily in area occupational centers which may limit the opportunity for academically inclined students to take occupational education while at the same time taking college preparatory courses.

4. The study showed that most employed graduates used informal means to secure their job, i.e. "friends" and "relatives". This indicates that increased emphasis needs to be given to education for job seek skills. Also, schools played only a minor role in placement of graduates. This means that the placement and follow-up role of the school needs to be strengthened.

5. Most employed agricultural graduates are prepared to earn a good living as indicated by relatively high wage levels, good job holding power, and high employer ratings on graduates' qualification for present jobs and potential for future promotions.

6. The higher percentage of 1970 graduates than 1968 graduates that were employed (56% versus 40%) probably reflects the lower percentage of 1970 graduates entering military service. The difference in percent employment would be even greater if the unemployment rates were comparable rather than 11 percent for 1970 graduates and 2 percent for graduates in 1968.

7. The higher percentage (11%) of unemployed 1970 graduates than 1968 graduates (2%) may reflect the depressed economic conditions that prevailed during the period. This is supported by 1970 graduates listing "slack season lay-off" as the major reason for being unemployed. Why graduates were unemployed may also be a function of limited mobility, lack of adequate placement, lack of job skills and/or the availability of jobs.

8. The finding that less than one-half of 1970 graduates were working in their area of education in agriculture indicates a need for surveys of local job opportunities, job placement services and education for job seek skills. The school's role in placement should be increased. This recommendation applies particularly to conservation graduates in other areas, a high level of unemployment, short job tenure, a low percentage of graduates working in conservation jobs and relatively low job satisfaction primarily due to dissatisfaction with the "type of work performed".

Also, a higher percentage of 1970 graduates than 1968 graduates were employed outside their area of education in agriculture. Also, more 1970 graduates gave "no job available in area of training" as a reason for working outside their area than did 1968 graduates. This indicates that the depressed national economy in the early 1970's may have been a causal factor in placement.

9. Agricultural graduates have good job holding power as evidenced by the high percentage having long job tenure and holding the same full-time job since graduation. The relatively high percentage of graduates (42%) continuing full-time in jobs held prior to graduation indicates effective placement for job and/or occupational work experience during the high school period. Also indicated is employer satisfaction with the job performance of students. Another factor that may be involved is limited geographical mobility of students (either by choice or circumstance) for initial employment.

10. The shorter job tenure reported by conservation graduates as compared to graduates in other areas may reflect greater seasonality in conservation jobs.

11. Almost all agricultural graduates employed in jobs outside their area of education expressed an interest in working in their area if employment was available. This indicates good student selection and mature career interest.

12. About 40 percent of 1968 graduates and 30 percent of 1970 agricultural mechanization graduates entered farming. This decreasing percentage may show improved student selection procedures and/or more relevant course content resulting in graduates with more saleable skills.

However, a majority of 1970 graduates still lived on family operated farms during high school. Also, many farms are now of sufficient size to require major responsibility by one or more persons for maintenance and repair of farm machinery and equipment so the decreasing trend may level off.

13. Employers feel agricultural graduates are qualified for their present jobs. Considering that many graduates are working outside their area of education, this may show a transfer of basic skills and/or positive job attitudes and habits being taught as part of occupational education in agriculture. The level of the jobs and positions reported as held by graduates indicates employment at a level where occupational education would be important.

14. Career advancement of 1970 graduates is indicated by the increase in percentage of graduates in salaried positions (12.3 the first year to 16.5% the second year). The increase in self-employed graduates from 3.8 percent to 6.2 percent also supports this advancement. In addition, the data showed that over 27 percent of graduates in second year jobs were making $3.00 more per hour or were self employed.

15. Employers provided additional education for one-quarter of graduates by the end of the second year. This along with promotions and pay raises indicates willingness by employers to invest in graduates as employees with potential for advancement. Also, potential for advancement is indicated by employers rating 62 percent of 1970 graduates as having potential for positions other than at hourly wage levels.

16. The relatively low need for agricultural knowledges and abilities in graduates' jobs would be expected for the low number of graduates working in their area of education. However, this might also indicate the need to increase emphasis on involvement of employers in determining course content.

17. The emphasis by both graduates and employers on the need for positive work habits and attitudes demonstrates that this area should be stressed in occupational education.

18. The overall job satisfaction reported by graduates indicates that they have been generally able to obtain satisfying employment.

19. Conservation graduates have the lowest job satisfaction of graduates in the specialized areas of agriculture primarily due to dissatisfaction with the type of work required in the job. This may reflect the low percentage of conservation students working in conservation jobs.

20. Image scores held by graduates for farming and off-farm agricultural related industry were generally positive. Both farm production and management graduates and graduates in other areas held more positive image of off-farm agricultural related industry than they did of farming. This may indicate that agricultural graduates will potentially be career workers in agricultural business and industry.

21. Continuing and regualized follow-up of graduates is essential to objective evaluation of occupational programs.

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APPENDIX A

STANDARD INDUSTRIAL CLASSIFICATION CODES DEFINED AS AGRIBUSINESS FOR PURPOSES OF THIS STUDY

APPENDIX A

STANDARD INDUSTRIAL CLASSIFICATION CODES DEFINED AS AGRIBUSINESS FOR PURPOSES OF THIS STUDY

Agriculture, Forestry, and Fisheries

01 Commercial Farms

01 12 Cotton

01 13 Cash grains

01 14 Tobacco

01 19 Field crops, n.e.c.*

01 22 Fruit and tree nuts

01 23 Vegetables

01 32 Dairies

01 33 Broiler chickens

01 34 Poultry, except broiler chickens

01 35 Beef cattle

01 36 Hogs

01 39 Livestock, n.e.c.

01 41 General farms

01 42 General farms - primarily crops

01 43 General farms - primarily livestock

01 44 General crop and livestock farms

01 92 Horticultural specialities

01 93 Animal specialities

01 99 Agricultural production, n.e.c.

07 Agricultural Services and Hunting & Trapping

07 12 Cotton ginning and compressing

07 13 Grist mills, including custom flour mills

07 14 Corn shelling, hay baling, and threshing services

07 15 Contract sorting, grading, and packing of fruits and vegetables for others

07 19 Agricultural services, n.e.c.

07 22 Animal hospitals

07 23 Poultry hatcheries

07 29 Animal husbandry services, n.e.c.

Manufacturing

20 Food and Kindred Products

20 11 Meat packing plants

20 13 Sausages and other prepared meat products

20 15 Poultry and small game dressing and packing, wholesale

20 21 Creamery butter

20 22 Cheese, natural and processed

20 23 Condensed and evaporated milk

* Not elsewhere classified

20 24	Ice cream and frozen desserts
20 25	Special dairy products
20 26	Fluid milk
20 32	Canned specialities
20 33	Canned fruits, vegetables, preserves, jams, and jellies
20 34	Dried and dehydrated fruits and vegetables
20 35	Pickled fruits and vegetables; vegetable sauces and seasonings; salad dressings
20 37	Frozen fruits, fruit juices, vegetables and specialities
20 41	Flour and other grain mill products
20 42	Prepared feeds for animals
20 43	Cereal preparations
20 44	Rice milling
20 46	Wet corn milling
20 62[1]	Cane sugar except refining
20 62	Cane sugar refining
20 63	Beet sugar
20 84	Wines, brandy, and brandy spirits
20 92	Soybean oil mills
20 94	Animal and marine fats and oils
20 94	Grease and tallow
20 99	Food preparations, n.e.c.

Transportation, Communication, and Other Public Utilities

	42 Motor Freight Transportation and Warehousing
42 12	Local trucking and draying, without storage
42 21	Farm product warehousing and storage
	47 Transportation Services
47 31	Stockyards
	49 Electric, Gas and Sanitary Services
49 71	Irrigation systems

Wholesale Trade

	50 Wholesale Trade
50 43	Dairy products
50 44	Poultry and poultry products
50 48	Fresh fruits and vegetables
50 51	Farm products - raw materials
50 83	Farm machinery and equipment
50 99	Wholesalers, n.e.c.

Retail Trade

	52 Building Materials, Hardware, and Farm Equipment
52 52	Farm equipment dealers
	54 Food
54 51	Dairy products stores

59 Miscellaneous Retail Stores

5912 Hay, grain, and feed stores

5999 Farm and garden supply stores, n.e.c.

5992 Florists

5999 Miscellaneous retail stores, n.e.c.

Services

76 Miscellaneous Repair Services

7699 Repair shops and related services, n.e.c.

APPENDIX B

DATA COLLECTION INSTRUMENTS

Appendix B-1

Graduate General Questionnaire

For Coding Only (Card #1)

(1) (2) (3) (4) 1 (5) (6) 1 (7) : (8) : (9)

$70G_2$-1

QUESTIONNAIRE

SECOND YEAR FOLLOW-UP STUDY OF 1970 AGRICULTURAL GRADUATES

INSTRUCTIONS

Most items in this form require only a check mark (✓) to give your answer. Answers requiring brief statements may be written with pen or pencil. Please answer each item in each section.

Please Print

1. Your Name _____

Permanent (not school) Address _____
(Street or RFD)

_____
(City) (State) (Zip Code)

2. Sex - Check (✓) ☐ (1) Male ☐ (2) Female (10)____

3. What agriculture classes did you complete in your last two years in high school?

Junior Year - Check (✓) One	Senior Year - Check (✓) One
☐ Farm Production and Management	☐ Farm Production and Management
☐ Agriculture Business	☐ Agriculture Business
☐ Conservation	☐ Conservation
☐ Agriculture Mechanization	☐ Agriculture Mechanization
☐ Ornamental Horticulture	☐ Ornamental Horticulture

4. Where were your agriculture classes held? (11)____

☐ (1) Both years in BOCES Area Vocational Center
☐ (2) Both years in a local high school
☐ (3) One year in BOCES, one year in a high school
☐ (4) Other (specify) _____

5. Where did you live the last two years in high school? (12)____

☐ (1) On a farm operated full-time by your father or guardian
☐ (2) On a farm operated part-time by your father or guardian
☐ (3) Not on a farm operated by your father or guardian
☐ (4) Other (specify) _____

6. What is your image or view of Farming? Please check (✓) one response for each statement.

	Agree	Neutral	Disagree	For Coding Only (c#1)
a. Most work in Farming is pleasant work.	3	2	1	(13)____
b. Most people who work in Farming live in the country.	3	2	1	(14)____
c. Most work in Farming has high prestige or social class.	3	2	1	(15)____
d. Most workers in Farming have the ability to go to college if they wanted to.	3	2	1	(16)____
e. Most workers in Farming need less medical care than other workers.	3	2	1	(17)____
f. Most workers in Farming work with their hands rather than with their mind.	1	2	3	(18)____
g. Most people working in Farming would prefer to work elsewhere if they had the opportunity to do so.	1	2	3	(19)____
h. Most people working in Farming receive incomes equal to people in other industries.	3	2	1	(20)____
i. Most workers in Farming desire to receive more recognition for their work than they presently receive.	1	2	3	(21)____
j. There are good career opportunities in Farming.	3	2	1	(22)____
k. Most work in farming can be done by people with little education.	1	2	3	(23)____
l. Most people who work in Farming rely heavily upon their past experience and tradition rather than research findings (information from the county agent) in facing new problems.	1	2	3	(24)____
m. Most workers in Farming receive adequate pay.	3	2	1	(25)____
n. Farming is a declining industry.	1	2	3	(26)____
				*(27)____
				*(28)____

7. What is your image or view of OFF-FARM related agricultural industry (Agricultural Manufactorers, Suppliers, Professors, and Distributors)? Please check (✓) one column for each statement.

	Agree	Neutral	Disagree	For Coding Only (c#1)
a. Most Off-Farm related agriculture work is pleasant work.	3	2	1	(29)____
b. Most people who work in Off-Farm related agricultural work live in the country.	3	2	1	(30)____
c. Most Off-Farm related agricultural work has high prestige or social class.	3	2	1	(31)____
d. Most workers in Off-Farm related agricultural industry have the ability to go to college, if they wanted to.	3	2	1	(32)____
e. Most workers in Off-Farm related agricultural industry need less medical care than other workers.	3	2	1	(33)____
f. Most workers in Off-Farm related agricultural industry work with their hands rather than their minds.	1	2	3	(34)____
g. Most people working in Off-Farm related agricultural industry would prefer to work elsewhere, if they had the opportunity to do so.	1	2	3	(35)____
h. Most people working in Off-Farm related agricultural industry receive incomes equal to people in other industries.	3	2	1	(36)____
i. Most workers in Off-Farm related agricultural industry desire to receive more recognition for their work than they presently receive.	1	2	3	(37)____
j. There are good career opportunities in Off-Farm related agricultural industry.	3	2	1	(38)____
k. Most work in Off-Farm related agricultural industry can be done by workers with little education.	1	2	3	(39)____
l. Most people who work in Off-Farm related agricultural industry rely heavily upon their past experience and tradition rather than research findings in facing new problems.	1	2	3	(40)____
m. Most workers in Off-Farm related agricultural industry receive adequate pay.	3	2	1	(41)____
n. Non-Farm related agricultural industry is declining.	1	2	3	(42)____ *(43)____ *(44)____

For Coding Only (c#1)

8. What is your present occupational status. Check (✓) ONE ONLY.

☐ (1) Employed full or part-time and not attending any post high school, college, or training, one-half time or more.

☐ (2) In military service

☐ (3) Four year college in New York State (check major below)*

☐ (4) Two year college in New York State (check major below)* (45)____

☐ (5) Other post high school training in New York State

☐ (6) Four year college outside New York State (check major below)*

☐ (7) Two year college outside New York State (check major below)*

*If in college:

-- What is your college major _____

-- Relationship of major to high school agriculture course

☐ (1) Directly related (same area)

☐ (2) Related (in agriculture) (46)____

☐ (3) Not related (outside agriculture)

☐ (8) Unemployed and not attending college or post high school training. (Check number of months and state reason below)

-- How many months have you been unemployed?

☐ (1) Less than one month

☐ (2) One to two months (47)____

☐ (3) Two to three months

☐ (4) More than three months

-- Reason for being unemployed _____ (48)____

☐ (9) Other (specify) _____

9. What are your future plans as far as jobs are concerned?

_____ (49)____

If you checked EMPLOYED (1) above -- continue on next page.

If you did not check EMPLOYED (1) above -- stop here and mail the questionnaire in the envelope provided to: A. L. Berkey, Agricultural Education, 205 Stone Hall, Cornell University, Ithaca, New York, 14850.

For Coding Only (c#1)

ABOUT YOUR PRESENT JOB

10. Name of firm (please print) _____

Address _____
(street)

_____
(city) (state) (zip code)

11. Your present job title _____ (50)____

(1)F
(2)OFAR
(3)NA
(4)NC

12. Please list the major duties or responsibilities in your present job.

a. _____

b. _____

c. _____

d. _____

13. Position in your present job.

☐ (1) Hourly worker

☐ (2) Salaried worker

☐ (3) Partner

☐ (4) Manager (51)____

☐ (5) Working on home farm

☐ (6) Self-employed (owner)

☐ (7) Other (specify) _____

FOR CODING ONLY (D.O.T. Title

_____

14. Full name of your immediate supervisor _____
(please print)

☐ No immediate supervisor (self-employed or partner)

Your Social Security Number ___ ___ ___ - ___ ___ - ___ ___ ___ ___

NOTE: These are needed in order to contact supervisors about what agricultural training is needed for your job.

15. How long have you worked in your present job? Check (✓).

☐ (1) Less than one month (52)____

☐ (2) One to six months (53)____

☐ (3) Seven to twelve months

☐ (4) More than one year

☐ (5) Since graduation from high school

For Coding Only (c#1)

16. How many jobs have you had s' ~e graduation from high school?

Full-Time	Part-Time	
_____	_____	(54)____ (55)____

17. Pay you receive in your present job. Check (✓)

- ☐ (1) $1.60 - 2.00/hr.
- ☐ (2) $2.01 - 2.50/hr.
- ☐ (3) $2.51 - 3.00/hr. (56)____
- ☐ (4) Above $3.00/hr.
- ☐ (5) Self-employed (specify) _____
- ☐ (6) Other (specify) _____

18. Type of employment. Check (✓)

- ☐ (1) Full-time
- ☐ (2) Part-time (57)____
- ☐ (3) Working full-time at more than one job

19. Is your job in the agricultural area you were trained for in high school? Check (✓) ☐ (1) Yes ☐ (2) No (58)____

If No - Check (✓) all that apply in (A) and (B) below.

(A) Reason

- ☐ (1) No job available in agricultural area trained for (59)____
- ☐ (2) Liked the work in other job better (60)____
- ☐ (3) Liked the hours in other job better (61)____
- ☐ (4) Other job paid more (62)____
- ☐ (5) Other (specify) _____ (63)____

(B) Would you be interested in working in the agricultural field you were trained for if suitable employment was available? Check (✓) (64)____

☐ (1) Yes ☐ (2) No

For Coding Only

20. Have you received a pay raise from your employer? Check (✓) (65)____

☐ (1) Yes (specify) _____

☐ (2) No (66)____

☐ (3) Self-employed

21. Have you received a job promotion from your present employer? Check (✓) (67)____

☐ (1) Yes (specify what kind) _____

☐ (2) No (68)____

☐ (3) Self-employed

22. Has your employer provided you any additional training (service schools, short courses, in-service, etc.)? Check (✓)

☐ (1) Yes (specify) _____ (69)____

(70)____

☐ (2) No (71)____

☐ (3) Self-employed

23. How satisfied are you with your job? Place a check (✓) in the box after each of the five job conditions below which best tells your feeling about your job. (72)____

Job Conditions	Satisfied (5)	Somewhat Satisfied (4)	Neutral (3)	Somewhat Dissatisfied (2)	Dissatisfied (1)	
(1) The people with whom you work.						(73)____
(2) The supervision you receive.						(74)____
(3) The work you do.						(75)____
(4) The promotions available in your job.						(76)____
(5) The pay you receive.						(77)____

For Coding Only (c#1)

24. How did you get your present job after graduation? Check (✓) one

- ☐ (1) Through the school
- ☐ (2) Through a friend or relative
- ☐ (3) Went to the Personnel Office and applied
- ☐ (4) Through the U.S. or State Employment Service (78)____
- ☐ (5) Through a private employment service
- ☐ (6) Heard about it on radio or television
- ☐ (7) Through a newspaper ad
- ☐ (8) Other. Explain _____ _____
- ☐ (9) Have not had a <u>full-time</u> job since graduation

25. What is your overall feeling about your present job? Check (✓) one

- ☐ (5) Satisfied
- ☐ (4) Somewhat satisfied
- ☐ (3) Neutral (79)____
- ☐ (2) Somewhat dissatisfied
- ☐ (1) Dissatisfied

(80)____

PLEASE CONTINUE ON TO NEXT SECTION

Appendix B-2

Graduate Farm Production and Management
Specialized Questionnaire

FPM-1

For Coding Only (Cards)

(1) (2) (3) (4) (5) 2 (6) 1 (7) 1 (8) 76

INSTRUCTIONS

For each knowledge or ability listed, check the column that indicates the need for the knowledge or ability in your present job.

Check √ - Essential - if used regularly in doing your job

OR - Desirable - makes your job easier to perform

OR - Unnecessary - not needed in your job

Knowledge or Ability		Essential (3)	Desirable (2)	Unnecessary (1)
1. Neat and well groomed	(10)			
2. Accept and carry out responsibility	(11)			
3. Meet and get along well with people	(12)			
4. Follow directions	(13)			
5. Show initiative when necessary	(14)			
6. Solve routine mathematical problems	(15)			
7. Write clearly and spell correctly	(16)			
8. Deal with understanding	(17)			
9. On time and rarely absent from work	(18)			
10. Follow safe working procedures	(19)			
11. Communicate effectively with customers	(20)			
12. Use farm credit sources	(21)			
13. Determine a least cost (purchase vs. lease farm machinery replacement program	(22)			
14. Maintenance and repair of farm machinery and equipment	(23)			
15. Mixing, pouring, and finishing concrete	(24)			
16. Framing and selecting materials for farm structures	(25)			
17. Do carpentry work in the construction and/or repair of farm buildings	(26)			
18. Use agricultural agencies and farm organizations such as cooperatives and DHIA	(27)			
19. Taking a farm inventory and keeping business records	(28)			
20. Determine land use capability based on soil texture and soil class	(29)			
21. Use management practices to conserve soil, water, and wildlife	(30)			
22. Determining fertilizer needs based on soil tests	(31)			
23. Determine the least cost fertilizer	(32)			

Check (√) one column indicating the need for each knowledge or ability in your present job.

Knowledge or Ability		Essential (3)	Desirable (2)	Unnecessary (1)
24. Growing [illegible] fruit	(33)			
25. Controlling weeds, insects, and diseases in crops	(34)			
26. Selecting recommended crop varieties	(35)			
27. Soil preparation and planting of crops	(36)			
28. Harvesting and storage of crops except forestry	(37)			
29. Growing and harvesting forestry crops	(38)			
30. Raising bees	(39)			
31. Determining the most efficient livestock housing	(40)			
32. Reading pedigrees and selecting foundation and/or replacement livestock	(41)			
33. Determining time to breed livestock, and keeping breeding records	(42)			
34. Raising livestock replacements	(43)			
35. Maintaining production records and culling non-profitable livestock	(44)			
36. Maintaining health records and using an effective health program	(45)			
37. Determining the symptoms and causes of common livestock health problems and using veterinary services	(46)			
38. Caring for livestock during gestation and birth of young	(47)			
39. Determining the least cost, balanced feed rations based on production, size, and pregnancy	(48)			
40. Practicing established milking, and milk storage practices to market quality milk	(49)			
41. Testing milk for butterfat	(50)			
42. Painting structures and/or equipment	(51)			
43. Construction and repair by electric or gas welding	(52)			
44. Plumbing work with iron pipe or copper tubing	(53)			
45. Doing basic electrical wiring	(54)			
46. Using market reports to market at a profit	(55)			

List below any other agricultural knowledges and abilities needed in your job and check need.

	(56)			
	(57)			
	(58)			

Thank you! [illegible] (Columns 59-80 Blank)
Please [illegible], Cornell University, [illegible], New York 14850.

Appendix B-3

Graduate Conservation Specialized Questionnaire

C-1

For Coding Only (Card)

(1) (2) (3) (4) (5) (6) (7) (8) (9)

INSTRUCTIONS

For each knowledge or ability listed, check the column that indicates the need for the knowledge or ability in your present job.

Check ✓ - Essential - if used regularly in doing your job

OR - Desirable - makes your job easier to perform

OR - Unnecessary - not needed in your job

Knowledge or Ability		Essential (3)	Desirable (2)	Unnecessary (1)
1. Neat and well groomed	(10)			
2. Accept and carry out responsibility	(11)			
3. Meet and get along well with people	(12)			
4. Follow directions	(13)			
5. Assume initiative when necessary	(14)			
6. Solve routine mathematical problems	(15)			
7. Write clearly and spell correctly	(16)			
8. Read with understanding	(17)			
9. On time and rarely absent from work	(18)			
10. Follow safe working procedures	(19)			
11. Communicate effectively with customers	(20)			
12. Identify common trees and shrubs	(21)			
13. Select site for, and plant trees	(22)			
14. Manage reforested lands by pruning and thinning	(23)			
15. Protect forest lands against fire	(24)			
16. Read and interpret maps	(25)			
17. Do differential leveling	(26)			
18. Control soil erosion by contour strips, ditches, diversions, and terraces	(27)			
19. Determine lime and fertilizer needs based on soil tests	(28)			
20. Cruise timber stands to estimate growth and yields	(29)			
21. Keep records on forested lands as to income, expenses, yield	(30)			
22. Harvest timber for lumber and/or pulp	(31)			
23. Identify important wildlife species and their habitats	(32)			

Check (✓) one column indicating the need for each knowledge or ability in your present job.

Knowledge or Ability		Essential (3)	Desirable (2)	Unnecessary (1)
14. Growing fish in a fish hatchery	(33)			
15. Controlling wildlife predators	(34)			
16. Rearing game birds in confinement	(35)			
17. Managing a fishing pond through fertilization, controlling undesirable species, and harvesting	(36)			
18. Raising animals on fur farm	(37)			
19. Using county, state, and federal assistance for conservation development	(38)			
20. Knowing and following state and local laws on conservation	(39)			
21. Maintaining and operating bridle paths and/or hiking trails	(40)			
22. Maintaining & operating machinery & equipment in winter recreation area such as ski lifts & snow machines	(41)			
23. Servicing and repairing small gas engines	(42)			
24. Servicing and repairing chain saws	(43)			
25. Joining metals by arc and/or gas welding	(44)			
26. Sawing and planing logs for lumber	(45)			
27. Obtaining and using credit from commercial banks or government agencies	(46)			
28. Increasing wildlife numbers by planting cover and food, and releasing game birds and animals	(47)			
29. Operation and maintenance of heavy equipment such as a backhoe or a bulldozer	(48)			
30. Taking a census of game birds or animals in an area	(49)			
31. Doing carpentry work and painting in maintenance and repair of buildings	(50)			
32. Doing plumbing work with iron pipe and/or copper tubing	(51)			
33. Mixing, pouring, and finishing concrete	(52)			
34. Serving as a nature guide	(53)			
35. Giving hunter safety instruction	(54)			
36. Giving instruction on outdoor skills	(55)			

List below any other agricultural knowledges and abilities needed in your job and check need.

		Essential (3)	Desirable (2)	Unnecessary (1)
	(56)			
	(57)			
	(58)			

[illegible] Cornell University, Ithaca, [illegible] 118

Appendix B-4

Graduate Agricultural Mechanization
Specialized Questionnaire

AM-1

For Coding Only (Card #)

(1) (2) (3) (4) (5) 2 (6) 3 (7) 1 (8)

INSTRUCTIONS

For each knowledge or ability listed, check the column that indicates the need for the knowledge or ability in your present job.

Check √ - Essential - if used regularly in doing your job

OR - Desirable - makes your job easier to perform

OR - Unnecessary - not needed in your job

Knowledge or Ability		Essential (3)	Desirable (2)	Unnecessary (1)
1. Neat and well groomed	(10)			
2. Accept and carry out responsibility	(11)			
3. Meet and get along well with people	(12)			
4. Follows directions	(13)			
5. Assumes initiative when necessary	(14)			
6. Solve routine mathematical problems	(15)			
7. Write clearly and spell correctly	(16)			
8. Deal with understanding	(17)			
9. On time and rarely absent from work	(18)			
10. Follow safe working procedures	(19)			
11. Communicate effectively with customers	(20)			
12. Maintenance and repair of engine electrical systems	(21)			
13. Diagnose mechanical malfunctions in machinery and equipment	(22)			
14. Using the dynamometer	(23)			
15. Making engine compression checks	(24)			
16. Locating common engine troubles with electronic test equipment	(25)			
17. Refacing valves and valve seats	(26)			
18. Installing piston rings, wrist pins, and bearings	(27)			
19. Scheduling shop work	(28)			
20. Preparing shop orders	(29)			
21. Repair of engine cooling systems	(30)			
22. Lubrication and other general preventive maintenance on machinery and equipment	(31)			
23 Repair of diesel fuel systems	(32)			

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AM-2

Check (✓) one column indicating the need for each knowledge or ability in your present job.

Knowledge or Ability		Essential (3)	Desirable (2)	Unnecessary (1)
24. Repair of hydraulic systems	(33)			
25. Repair of standard transmissions	(34)			
26. Repair of automatic transmissions	(35)			
27. Repair of farm machinery and equipment [illegible]	(36)			
28. Making service calls to customers	(37)			
29. [illegible] adjustment of farm machinery and equipment	(38)			
30. Calibrating planting, spraying, and fertilizer applying equipment	(39)			
31. Installing materials handling and drying equipment	(40)			
32. Repair of [illegible] equipment	(41)			
33. Keeping business records	(42)			
34. Ordering parts for [illegible] and/or repair [illegible]	(43)			
35. Reading parts manuals	(44)			
36. Taking parts inventory	(45)			
37. Identifying parts from customer's descriptions	(46)			
38. Cutting metals with gas and/or arc welding	(47)			
39. Applying hard surfacing to metals with a welder	(48)			
40. Operating [illegible] metal working equipment	(49)			
41. Plumbing work with [illegible] pipe and/or copper tubing	(50)			
42. Mixing, pouring, and finishing concrete	(51)			
43. Protecting structures from lightning	(52)			
44. Planning and selecting materials for farm structures	(53)			
45. Making a bill of materials	(54)			
46. Doing carpentry work in construction and/or repair of buildings	(55)			

List below any other agricultural knowledges and abilities needed in your job and check need.

		Essential (3)	Desirable (2)	Unnecessary (1)
	(56)			
	(57)			
	(58)			

[illegible]

Appendix B-5

Graduate Ornamental Horticulture
Specialized Questionnaire

OH-1

For Coding Only (Card #)

(1) (2) (3) (4) (5) (6) (7) (8) (9)

INSTRUCTIONS

For each knowledge or ability listed, check the column that indicates the need for the knowledge or ability in your present job.

Check ✓ - Essential - if used regularly in doing your job

OR - Desirable - makes your job easier to perform

OR - Unnecessary - not needed in your job

Knowledge or Ability		Essential (3)	Desirable (2)	Unnecessary (1)
1. Neat and well groomed	(10)			
2. Accept and carry out responsibility	(11)			
3. Work and get along well with people	(12)			
4. Follow directions	(13)			
5. Assume initiative when necessary	(14)			
6. Solve routine mathematical problems	(15)			
7. Write clearly and spell correctly	(16)			
8. Deal with understanding	(17)			
9. On time and rarely absent from work	(18)			
10. Follow safe working procedures	(19)			
11. Communicate effectively with customers	(20)			
12. Determining lime and fertilizer needs based on soil tests	(21)			
13. Fertilizing soil	(22)			
14. Installing and maintaining greenhouse watering systems	(23)			
15. Repairing and maintaining greenhouse heating systems	(24)			
16. Identifying common plant materials	(25)			
17. Identifying the uses and growth characteristics of common plant materials	(26)			
18. Laying sod for turf	(27)			
19. Advising customers how to care for house plants	(28)			
20. Repair of small gas engines	(29)			
21. Operation and maintenance of power equipment such as tractors, mowers, and edgers	(30)			
22. Identifying trees and shrubs for nursery	(31)			
23. Making floral arrangements such as centerpieces, corsages, and Christmas decorations	(32)			

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Check (✓) one column indicating the need for each knowledge or ability in your present job.

Knowledge or Ability		Essential (3)	Desirable (2)	Unnecessary (1)
24. Making a landscape design plan for an area	(33)			
25. Maintaining trees and shrubs	(34)			
26. Selling ornamental horticulture produces and/or services to customers	(35)			
27. Knowing how to make up soil mixtures for growing plants in the greenhouse	(36)			
28. Planting and transplanting nursery stock	(37)			
29. Preparing soils for the establishment of turf	(38)			
30. Maintaining and renovating older lawns	(39)			
31. Recommending the appropriate plant materials to customers	(40)			
32. Recognizing, and knowing how to control the common insect and disease of plant materials	(41)			
33. Doing carpentry work and painting in the maintenance and repair of ornamental horticulture structures	(42)			
34. Doing plumbing work with iron pipe and/or copper tubing	(43)			
35. Making out a bill of materials	(44)			
36. Mixing, pouring, and finishing concrete	(45)			
37. Growing nursery stock in the nursery	(46)			
38. Using trade organizations and government agencies	(47)			
39. Keeping and using business records	(48)			
40. Propagating plant materials in the greenhouse by cuttings, and/or seed, budding, and grafting	(49)			
41. Doing landscape surveying	(50)			
42. Growing common cut flowers, bedding and potted plants in the greenhouse	(51)			
43. Operating greenhouse structures to maintain proper heat, light, and ventilation	(52)			
44. Joining metals through use of the arc and/or gas welder	(53)			
45. Understanding and complying with business laws and regulation	(54)			
46. Securing and using credit from commercial banks and/or government agencies	(55)			

List below any other agricultural knowledges and abilities needed in your job and check need.

	(56)			
	(57)			
	(58)			

Thank you f[illegible] (Columns 59-80 Blank)

Please return to: [illegible], Cornell University, Ithaca, New York 14[illegible]

Appendix B-6

Employer General Questionnaire

(706)

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GE-1

For Coding Only (Card #3)

(1) (2) (3) (4) (5) (6) (7) (8) (9)
3 2 : :

EVALUATION OF GRADUATE'S TRAINING BY EMPLOYER

General Information

1. Name of Business or Firm _____

   Address _____

   _____ Zip _____

2. Main products or services of this firm

   a) _____

   (b) _____

   c) _____

3. Name of agricultural graduate in your employment

   Social Security Number ___ ___ ___ - ___ ___ - ___ ___ ___ ___

4. Job title now being filled by this agricultural graduate

   _____

5. What are the duties and responsibilities of the graduate in this job title?

   a. _____

   b _____

   c. _____

6. How qualified do you feel this graduate is in his present job title? Check (✓) only one.

   ☐ 1. Well qualified

   ☐ 2. Meets minimum qualification

   ☐ 3. Not qualified - needs additional training

7. What is the highest potential of the graduate for advancement in this business or firm? Check (✓) only one.

   ☐ 1. Hourly worker

   ☐ 2. Salaried worker

   ☐ 3. Partner

   ☐ (4) Manager

   ☐ (5) Owner

   ☐ (6) Other (specify) _____

   _____

(1) F
(2) OFAR
(3) NAR
(4) NC

(10) ____

(11) ____

(12) ____

(13) ____

(14) ____

15 ____
16 0
17 E
18 ____
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Appendix B-7

Sample Employer Specialized Questionnaire

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Page - 1

For Coding Only (Card #4)

(1) (2) (3) (4) (5) 4 (6) 1 (7) 2 (8) : :

INSTRUCTIONS

For each knowledge or ability listed, check the column that indicates the need for the knowledge or ability in the agricultural graduate's present job.

Check √ - Essential - if used regularly in doing your job

OR - Desirable - makes your job easier to perform

OR - Unnecessary - not needed in your job

Knowledge or Ability		Essential (3)	Desirable (2)	Unnecessary (1)
1. Neat and well groomed	(10)			
2. Accept and carry out responsibility	(11)			
3. Work and get along well with people	(12)			
4. Follow directions	(13)			
5. Assume initiative when necessary	(14)			
6. Solve routine mathematical problems	(15)			
7. Write clearly and spell correctly	(16)			
8. Read with understanding	(17)			
9. On time and rarely absent from work	(18)			
10. Follow safe working procedures	(19)			
11. Communicate effectively with customers	(20)			
12. Obtain farm credit sources	(21)			
13. Determining a least cost (purchase vs. lease farm machinery replacement program	(22)			
14. Maintenance and repair of farm machinery and equipment	(23)			
15. Mixing, pouring, and finishing concrete	(24)			
16. Planning and selecting materials for farm structures	(25)			
17. Doing carpentry work in the construction and/or repair of farm buildings	(26)			
18. Using agricultural agencies and farm organizations such as cooperatives and DHIA	(27)			
19. Taking a farm inventory and keeping business records	(28)			
20. Determining land use capability based on soil texture and soil class	(29)			
21. Using management practices to conserve soil, water, and wildlife	(30)			
22. Determining fertilizer needs based on soil tests	(31)			
23. Selecting the best type fertilizer	(32)			

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APPENDIX C

RANKING OF AGRICULTURAL KNOWLEDGES AND ABILITIES AS TO "NEED" FOR TRAINING BY 1968 SECOND YEAR GRADUATES AND EMPLOYERS

Appendix C-1

Ranking of Farm Production and Management Knowledges and Abilities by 1968 Graduates and Employers

Ranking of Farm Production and Management Knowledges and Abilities as to "Need for Training"* by Graduates and Employers

Graduate		Employer			
Rank	Mean Score	Rank	Mean Score	Item Number	Farm Production and Management Knowledge or Ability
1	2.64	2	2.68	2	Accept and carry out responsibility
2	2.61	4	2.63	4	Follows directions
3	2.58	1	2.74	10	Follow safe working procedures
4	2.54	3	2.67	9	On time and rarely absent from work
5	2.46	5	2.56	5	Assumes initiative when necessary
6	2.41	6	2.46	3	Meet and get along well with people
7	2.19	8	2.21	6	Solve routine mathematical problems
8	2.16	7	2.30	8	Read with understanding
9	2.13	13	2.05	37	Detecting the symptoms and causes of common livestock health problems and using veterinary services
10	2.12	9	2.12	27	Soil preparation and planting of crops
11	2.11	12	2.07	28	Harvesting and storage of crops except forestry
11	2.11	13	2.05	33	Determining time to breed livestock and keeping breeding records
12	2.09	13	2.05	34	Raising livestock replacements
13	2.08	11	2.09	14	Maintenance and repair of farm machinery and equipment
13	2.08	15	1.98	26	Selecting recommended crop varieties
13	2.08	12	2.07	38	Caring for livestock during gestation and birth of young
14	2.07	10	2.11	25	Controlling weeds, insects, and diseases in crops
15	2.04	15	1.98	35	Maintaining production records and culling non-profitable livestock
15	2.04	13	2.05	40	Practicing established milking, and milk storage practices to market quality milk
16	2.01	19	1.86	22	Determining fertilizer needs based on soil tests
17	2.00	16	1.95	11	Communicate effectively with customers
18	1.99	21	1.82	32	Reading pedigrees and selecting foundation and/or replacement livestock
19	1.96	16	1.95	19	Taking a farm inventory and keeping business records
20	1.95	20	1.84	21	Using management practices to conserve soil, water, and wildlife

*Knowledges and abilities were rated as to need in the graduates' present job. The three point rating scale of "E - Essential," "D - Desirable," and "U - Undesirable" were assigned the values 3, 2, and 1 respectively. Thus a score of 3.0 would indicate a knowledge or ability most needed and 1.0 an unnecessary knowledge or ability.

TABLE

Ranking of Farm Production and Management Knowledges and Abilities as to "Need for Training"* by Graduates and Employers

Graduate		Employer			
Rank	Mean Score	Rank	Mean Score	Item Number	Farm Production and Management Knowledge or Ability
20	1.95	17	1.93	36	Maintaining health records and using an effective health program
21	1.94	21	1.82	31	Determining the most efficient livestock housing
21	1.94	22	1.81	39	Determining the least cost, balanced feed rations based on production, size, and pregnancy
22	1.89	15	1.98	7	Write clearly and spell correctly
22	1.89	26	1.70	43	Construction and repair by electric or gas welding
23	1.86	25	1.72	17	Doing carpentry work in the construction and/or repair of farm buildings
23	1.86	23	1.77	23	Selecting the least cost fertilizer
24	1.85	18	1.89	20	Determining land use capability based on soil texture and soil class
25	1.82	27	1.63	16	Planning and selecting materials for farm structures
26	1.81	31	1.46	45	Doing basic electrical wiring
27	1.79	24	1.75	42	Painting structures and/or equipment
28	1.78	33	1.40	12	Using farm credit sources
29	1.75	14	2.00	1	Neat and well groomed
29	1.75	19	1.86	18	Using agricultural agencies and farm organizations such as cooperatives and DHIA
30	1.74	30	1.51	46	Using market reports to market at a profit
31	1.73	28	1.56	44	Plumbing work with iron pipe or copper tubing
32	1.72	29	1.54	13	Determining a least cost (purchase vs. lease) farm machinery replacement program
32	1.72	32	1.42	15	Mixing, pouring, and finishing concrete
33	1.62	33	1.40	41	Testing milk for butterfat
34	1.26	34	1.11	29	Growing and harvesting forestry crops
35	1.04	35	0.95	24	Growing tree fruit
36	1.01	36	0.93	30	Raising bees

*Knowledges and abilities were rated as to need in the graduates' present job. The three point rating scale of "E - Essential," "D - Desirable," and "U - Undesirable" were assigned the values 3, 2, and 1 respectively. Thus a score of 3.0 would indicate a knowledge or ability most needed and 1.0 an unnecessary knowledge or ability.

Appendix C-2

Ranking of Conservation Knowledges and Abilities
by 1968 Graduates and Employers

Ranking of Conservation Knowledges and Abilities as to "Need for Training"* by Graduates and Employers

Graduate		Employer			
Rank	Mean Score	Rank	Mean Score	Item Number	Conservation Knowledge or Ability
1	2.23	1	3.00	4	Follow directions
1	2.23	6	2.13	10	Follow safe working procedures
2	2.15	5	2.25	3	Meet and get along well with people
2	2.15	1	3.00	9	On time and rarely absent from work
3	2.08	3	2.63	2	Accept and carry out responsibility
4	1.85	2	2.75	5	Assume initiative when necessary
5	1.62	7	1.88	1	Neat and well groomed
5	1.62	6	2.13	8	Read with understanding
6	1.54	6	2.13	6	Solve routine mathematical problems
7	1.46	5	2.25	7	Write clearly and spell correctly
8	1.31	13	1.00	11	Communicate effectively with customers
9	1.15	9	1.50	16	Reading and interperting maps
10	1.08	9	1.50	12	Identifying common trees and shrubs
11	1.00	13	1.00	14	Managing reforested lands by pruning and thinning
11	1.00	10	1.38	15	Protecting forest lands against fire
11	1.00	9	1.50	30	Knowing and following state and local laws on conservation
11	1.00	8	1.63	34	Servicing and repairing chain saws
11	1.00	9	1.50	41	Doing carpentry work and painting in maintenance and repair of buildings
12	0.92	10	1.38	17	Doing differential leveling
12	0.92	12	1.13	20	Cruising timber stands to estimate growth and yields
12	0.92	13	1.00	21	Keeping records on forested lands as income, expense, and yield
12	0.92	11	1.25	22	Harvesting timber for lumber and/or pulp
12	0.92	13	1.00	31	Maintaining and operating bridle paths and/or hiking trails
12	0.92	12	1.13	32	Maintaining and operating machinery and equipment in winter recreation areas such as ski lifts and snow machines
12	0.92	9	1.50	33	Servicing and repairing small gas engines
12	0.92	11	1.25	36	Sawing and planing logs for lumber
12	0.92	10	1.38	39	Operation and maintenance of heavy equipment such as a backhoe or a bulldozer
13	0.85	11	1.25	18	Controlling soil erosion by contour strips, ditches, sod waterways, and terraces

*Knowledges and abilities were rated as to need in the graduates' present job. The three point rating scale of "E - Essential," "D - Desirable," and "U - Undesirable" were assigned the values 3, 2, and 1 respectively. Thus a score of 3.0 would indicate a knowledge or ability most needed and 1.0 an unnecessary knowledge or ability.

TABLE

Ranking of Conservation Knowledges and Abilities as to "Need for Training"* by Graduates and Employers

Graduate		Employer			
Rank	Mean Score	Rank	Mean Score	Item Number	Conservation Knowledge or Ability
13	0.85	11	1.25	29	Using county, state, and federal assistance for conservation development
13	0.85	10	1.38	35	Joining metals by arc and/or gas welding
14	0.77	13	1.00	13	Selecting sites for, and planting trees
14	0.77	11	1.25	19	Determining lime and fertilizer needs based on soil tests
14	0.77	11	1.25	23	Identifying important wildlife species and their habitats
14	0.77	13	1.00	24	Growing fish in a fish hatchery
14	0.77	11	1.25	25	Controlling wildlife predators
14	0.77	13	1.00	26	Rearing game birds in confinement
14	0.77	13	1.00	27	Managing a fishing pond through fertilization, controlling undesirable species, and harvesting
14	0.77	13	1.00	28	Growing animals on fur farm
14	0.77	11	1.25	37	Securing and using credit from commercial banks or government agencies
14	0.77	12	1.13	38	Increasing wildlife numbers by planting cover and food, and releasing game birds and animals
14	0.77	13	1.00	40	Taking a census of game birds or animals in an area
14	0.77	11	1.25	42	Doing plumbing work with iron pipe and/or copper tubing
14	0.77	10	1.38	43	Mixing, pouring, and finishing concrete
14	0.77	13	1.00	44	Serving as a nature guide
14	0.77	12	1.13	45	Giving hunter safety instruction
14	0.77	13	1.00	46	Giving instruction on outdoor skills

*Knowledges and abilities were rated as to need in the graduates' present job. The three point rating scale of "E - Essential," "D - Desirable," and "U - Undesirable" were assigned the values 3, 2, and 1 respectively. Thus a score of 3.0 would indicate a knowledge or ability most needed and 1.0 an unnecessary knowledge or ability.

Appendix C-3

Ranking of Agricultural Mechanization Knowledges and Abilities by 1968 Graduates and Employers

Ranking of Agricultural Mechanization Knowledges and Abilities as to "Need for Training"* by Graduates and Employers

Graduate		Employer			
Rank	Mean Score	Rank	Mean Score	Item Number	Agricultural Mechanization Knowledge or Ability
1	2.52	1	2.90	4	Follows directions
2	2.45	2	2.85	2	Accept and carry out responsibility
3	2.36	2	2.85	9	On time and rarely absent from work
4	2.27	1	2.90	10	Follow safe working procedures
5	2.12	3	2.50	5	Assumes initiative when necessary
6	2.09	4	2.45	3	Meet and get along well with people
7	1.91	5	2.35	8	Read with understanding
8	1.88	9	1.90	13	Diagnose mechanical malfunctions in machinery and equipment
9	1.85	8	2.00	22	Lubrication and other general preventive maintenance on machinery and equipment
10	1.73	7	2.10	7	Write clearly and spell correctly
10	1.73	10	1.65	11	Communicate effectively with customers
10	1.73	10	1.65	33	Keeping business records
11	1.70	6	2.10	6	Solve routine mathematical problems
11	1.70	10	1.65	35	Reading parts manuals
12	1.61	9	1.90	1	Neat and well groomed
13	1.55	12	1.40	12	Maintenance and repair of engine electrical systems
13	1.55	10	1.65	38	Joining metal with gas and/or arc welding
14	1.48	16	1.20	34	Ordering parts for stock and/or repair jobs
15	1.45	11	1.45	27	Repair of farm machinery and equipment excluding tractors
16	1.42	13	1.35	30	Calibrating planting, spraying, and fertilizer applying equipment
17	1.39	11	1.45	46	Doing carpentry work in construction and/or repair of buildings
18	1.36	11	1.45	39	Applying hard surfacing to metals with a welder
19	1.33	13	1.35	41	Plumbing work with iron pipe and/or copper tubing
19	1.33	14	1.30	45	Making out a bill of materials
20	1.30	15	1.25	18	Installing piston rings, wrist pins, and bearings
20	1.30	15	1.25	24	Repair of hydraulic systems
20	1.30	11	1.45	32	Repair of silage equipment
20	1.30	13	1.35	36	Taking parts inventory
21	1.27	17	1.15	23	Repair of engine cooling systems

*Knowledges and abilities were rated as to need in the graduates' present job. The three point rating scale of "E - Essential," "D - Desirable," and "U - Undesirable" were assigned the values 3, 2, and 1 respectively. Thus a score of 3.0 would indicate a knowledge or ability most needed and 1.0 an unnecessary knowledge or ability.

TABLE

Ranking of Agricultural Mechanization Knowledges and Abilities as to "Need for Training"* by Graduates and Employers

Graduate		Employer			
Rank	Mean Score	Rank	Mean Score	Item Number	Agricultural Mechanization Knowledge or Ability
22	1.24	15	1.25	17	Refacing valves and valve seats
22	1.24	14	1.30	21	Repair of engine cooling systems
22	1.24	13	1.35	40	Operating power metal working equipment
22	1.24	13	1.35	44	Planning and selecting materials for farm structures
23	1.21	11	1.45	29	Set up and adjustment of farm machinery and equipment
24	1.18	13	1.35	42	Mixing, pouring, and finishing concrete
25	1.15	15	1.25	16	Locating common engine troubles with electronic test equipment
25	1.15	16	1.20	20	Preparing shop orders
25	1.15	14	1.30	25	Repair of standard transmissions
26	1.12	11	1.45	15	Making engine compression checks
26	1.12	18	1.05	31	Installing materials handling and drying equipment
26	1.12	15	1.25	37	Identifying parts from customer's descriptions
27	1.09	15	1.25	19	Scheduling shop work
28	1.06	16	1.20	28	Making service calls to customers
29	1.03	17	1.15	14	Using a dynamometer
30	1.00	17	1.15	43	Protecting structures from lightning
31	0.97	17	1.15	26	Repair of automatic transmissions

*Knowledges and abilities were rated as to need in the graduates' present job. The three point rating scale of "E - Essential," "D - Desirable," and "U - Undesirable" were assigned the values 3, 2, and 1 respectively. Thus a score of 3.0 would indicate a knowledge or ability most needed and 1.0 an unnecessary knowledge or ability.

Appendix C-4

Ranking of Ornamental Horticulture Knowledges and Abilities by 1968 Graduates and Employers

Ranking of Ornamental Horticulture Knowledges and Abilities as to "Need for Training"* by Graduates and Employers

Graduate		Employer		Item Number	Ornamental Horticulture Knowledge or Ability
Rank	Mean Score	Rank	Mean Score		
1	2.13	1	3.00	4	Follow directions
2	2.00	1	3.00	2	Accept and carry out responsibility
2	2.00	1	3.00	9	On time and rarely absent from work
3	1.88	3	2.60	5	Assume initiative when necessary
4	1.75	2	2.80	3	Meet and get along well with people
4	1.75	1	3.00	10	Follow safe working procedures
5	1.50	10	1.20	6	Solve routine mathematical problems
5	1.50	9	1.40	7	Write clearly and spell correctly
5	1.50	5	2.20	8	Read with understanding
6	1.38	6	2.00	11	Communicate effectively with customers
7	1.13	4	2.40	1	Neat and well groomed
7	1.13	10	1.20	16	Identifying common plant materials
7	1.13	10	1.20	17	Identifying the uses and growth characteristics of common plant materials
7	1.13	9	1.40	39	Keeping and using business records
8	1.00	11	1.00	13	Sterilizing soil
8	1.00	9	1.40	22	Planting trees and shrubs for customers
8	1.00	9	1.40	24	Making a landscape design plan for an area
8	1.00	10	1.20	30	Maintaining and renovating older lawns
8	1.00	10	1.20	32	Recognizing and knowing how to control the common insect and diseases of plant materials
8	1.00	9	1.40	35	Making out a bill of materials
9	0.88	11	1.00	12	Determining lime and fertilizer needs based on soil tests
9	0.88	11	1.00	14	Operating and maintaining greenhouse watering systems
9	0.88	11	1.00	15	Operating and maintaining greenhouse heating systems
9	0.88	7	1.80	21	Operation and maintenance of power equipment such as tractors, mowers, and edgers
9	0.88	11	1.00	23	Making floral arrangements such as centerpieces, corsages, and Christmas decorations
9	0.88	9	1.40	25	Maintaining trees and shrubs
9	0.88	11	1.00	27	Knowing how to make up soil mixtures for growing plants in the greenhouse
9	0.88	9	1.40	28	Planting and transplanting nursery stock
9	0.88	9	1.40	29	Preparing soils for the establishment of turf

*Knowledges and abilities were rated as to need in the graduates' present job. The three point rating scale of "E - Essential," "D - Desirable," and "U - Undesirable" were assigned the values 3, 2, and 1 respectively. Thus a score of 3.0 would indicate a knowledge or ability most needed and 1.0 an unnecessary knowledge or ability.

TABLE

Ranking of Ornamental Horticulture Knowledges and Abilities as to "Need for Training"* by Graduates and Employers

Graduate		Employer			
Rank	Mean Score	Rank	Mean Score	Item Number	Ornamental Horticulture Knowledge or Ability
9	0.88	10	1.20	34	Doing plumbing work with iron pipe and/or copper tubing
9	0.88	10	1.20	37	Growing nursery stock in the nursery
9	0.88	9	1.40	41	Doing landscape surveying
9	0.88	11	1.00	42	Growing common cut flowers, bedding, and potted plants in the greenhouse
9	0.88	10	1.20	44	Joining metal through use of the arc and/or gas welder
9	0.88	8	1.60	45	Understanding and complying with business laws and regulation
10	0.75	9	1.40	18	Laying sod for turf
10	0.75	11	1.00	19	Advising customers how to care for house plants
10	0.75	7	1.80	20	Repair of small gas engines
10	0.75	11	1.00	26	Selling ornamental horticulture products and/or services to customers
10	0.75	9	1.40	31	Recommending the appropriate plant materials to customers
10	0.75	9	1.40	36	Mixing, pouring, and finishing concrete
10	0.75	11	1.00	38	Using trade organizations and government agencies
10	0.75	11	1.00	40	Propagating plant materials in the greenhouse by cuttings, and/or seed, budding, and graft...
10	0.75	11	1.00	43	Operating greenhouse structures to maintain proper heat, light, and ventilation
11	0.63	11	1.00	33	Doing carpentry work and painting in the maintenance and repair of ornamental horticulture structures
11	0.63	11	1.00	46	Securing and using credit from commercial banks and/or government agencies

*Knowledges and abilities were rated as to need in the graduates' present job. The three point rating scale of "E - Essential," "D - Desirable," and "U - Undesirable" were assigned the values 3, 2, and 1 respectively. Thus a score of 3.0 would indicate a knowledge or ability most needed and 1.0 an unnecessary knowledge or ability.

APPENDIX D

RANKING OF AGRICULTURAL KNOWLEDGES AND ABILITIES AS TO "NEED" FOR TRAINING BY 1970 SECOND YEAR GRADUATES AND EMPLOYERS

Appendix D-1

Ranking of Farm Production and Management Knowledges and Abilities by 1970 Graduates and Employers

RANKING OF FARM PRODUCTION AND MANAGEMENT KNOWLEDGES AND ABILITIES AS TO "NEED FOR TRAINING" BY 1970 GRADUATES AND THEIR EMPLOYERS

Item Number	Knowledge or Ability	Graduates				Employers			
		First Year		Second Year		First Year		Second Year	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
[illegible]	Follows directions	2.62	11	2.[illegible]1	1	2.72	1	3.00	1
[illegible]	Accept and carry out responsibility	2.74	3	2.86	2	2.72	1	2.67	3
1[illegible]	Follow safe working procedures	2.[illegible]5	10	2.86	2	2.72	1	2.[illegible]2	2
[illegible]	On time and rarely absent from work	2.76	7	2.76	3	2.72	1	2.[illegible]2	2
[illegible]	Assumes initiative when necessary	2.47	15	2.67	4	2.44	2	2.50	4
3	Meet and get along well with people	2.47	15	2.57	5	2.28	3	2.50	4
14	Maintenance and repair of farm machinery and equipment	1.91	25	2.24	6	1.78	7	2.08	7
[illegible]	Read with understanding	2.09	22	2.10	7	2.22	4	2.42	5
11	Communicate effectively with customers	2.09	22	2.10	7	1.56	10	2.00	8
[illegible]	Solve routine mathematical problems	2.06	23	2.05	8	2.00	5	2.18	6
[illegible]	Soil preparation and planting of crops	3.09	3	1.95	9	1.44	12	1.82	[illegible]
43	Construction and repair by electric or gas welding	2.29	18	1.95	9	1.67	8	2.00	8
7	Write clearly and spell correctly	1.76	27	1.91	10	1.78	7	2.08	7
25	Controlling weeds, insects and diseases in crops	3.15	2	1.91	10	1.44	12	1.73	10
3[illegible]	Caring for livestock during gestation and birth of young	2.18	20	1.91	10	1.50	11	1.82	[illegible]

(Continued)

Item Number	Knowledge or Ability	Graduates				Employers			
		First Year		Second Year		First Year		Second Year	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
22	Determining fertilizer needs based on soil tests	1.71	28	1.86	11	1.50	11	1.46	16
33	Determining time to breed livestock, and keeping breeding records	3.24	1	1.86	11	1.28	15	1.82	9
34	Raising livestock replacements	2.50	14	1.86	11	1.33	14	1.73	10
36	Maintaining health records and using an effective health program	1.97	24	1.86	11	1.22	16	1.64	12
37	Detecting the symptoms and causes of common livestock health problems and using veterinary services	2.65	10	1.86	11	1.56	10	1.73	10
40	Practicing established milking and milk storage practices to market quality milk	2.32	17	1.86	11	1.39	13	1.73	10
13	Determining a least cost (purchase vs. lease) farm machinery replacement program	1.62	31	1.81	12	1.11	18	1.50	15
17	Doing carpentry work in the construction and/or repair of farm buildings	1.88	26	1.81	12	1.67	8	1.55	14
20	Determining land use capability based on soil texture and soil class	1.65	30	1.81	12	1.50	11	1.50	15
21	Using management practices to conserve soil, water, and wildlife	1.71	28	1.81	12	1.56	10	1.55	13
28	Harvesting and storage of crops except forestry	2.88	6	1.81	12	1.44	12	1.73	10
35	Maintaining production records and culling non-profitable livestock	2.06	23	1.81	12	1.33	14	1.73	10
19	Taking a farm inventory and keeping business records	1.76	27	1.76	13	1.44	12	1.58	13
23	Selecting the least cost fertilizer	1.56	32	1.76	13	1.44	12	1.50	15

(Continued)

Number	Knowledge or Ability	Graduates				Employer			
		First Year		Second Year		First Year		Second Year	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
3.	Determining the least cost, balanced feed rations based on production, size, and pregnancy	2.24	1[illegible]	1.78	13	1.22	15	1.55	14
44	Plumbing work with iron pipe or copper tubing	2.56	13	1.76	13	1.56	10	1.54	12
15	Mixing, pouring, and finishing concrete	1.56	33	1.71	14	1.28	15	1.33	17
28	Selecting recommended crop varieties	2.91	5	1.71	14	1.33	14	1.73	10
1	Neat and well groomed	1.56	33	1.67	15	1.89	6	2.18	6
12	Using farm credit sources	1.56	33	1.67	15	1.17	17	1.67	11
45	Doing basic electrical wiring	2.46	15	1.67	15	1.33	14	1.55	14
31	Determining the most efficient livestock housing	2.91	5	1.62	16	1.33	14	1.55	14
32	Reading pedigrees and selecting foundation and/or replacement livestock	3.03	4	1.62	16	1.22	16	1.73	10
16	Planning and selecting materials for farm structures	1.68	29	1.57	17	1.28	15	1.50	15
42	Painting structures and/or equipment	2.59	12	1.57	17	1.50	11	2.09	7
46	Using market reports to market at a profit	2.24	19	1.57	17	1.17	17	1.27	18
29	Growing and harvesting forestry crops	2.71	9	1.52	18	1.44	12	1.27	18
41	Testing milk for butterfat	2.32	17	1.48	19	1.11	18	1.27	18
24	Growing tree fruit	2.15	21	1.10	20	0.89	19	1.09	19
30	Raising bees	2.35	16	1.10	20	1.33	14	1.27	18

Appendix D-2

Ranking of Conservation Knowledges and Abilities
by 1970 Graduates and Employers

RANKING OF CONSERVATION KNOWLEDGES AND ABILITIES AS TO "NEED FOR TRAINING" BY 1970 GRADUATES AND THEIR EMPLOYERS

Item Number	Knowledge or Ability	Graduates				Employers			
		First Year		Second Year		First Year		Second Year	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
4	Follow directions	2.30	7	2.95	1	2.90	1	2.81	3
10	Follow safe working procedures	2.20	10	2.95	1	2.77	3	3.00	1
2	Accept and carry out responsibility	2.18	11	2.90	2	2.80	2	2.63	4
9	On time and rarely absent from work	1.77	26	2.80	3	2.70	4	2.68	2
5	Assume initiative when necessary	2.11	14	2.65	4	2.53	5	2.50	5
3	Meet and get along well with people	2.16	12	2.55	5	2.47	6	2.44	6
8	Read with understanding	1.89	23	2.25	6	2.27	7	2.31	7
7	Write clearly and spell correctly	1.77	26	2.16	7	2.10	8	1.94	9
1	Neat and well groomed	1.98	20	2.11	8	2.10	8	2.06	8
11	Communicate effectively with customers	1.90	25	2.11	8	1.87	10	1.63	10
6	Solve routine mathematical problems	1.77	26	1.90	9	2.00	9	1.56	11
41	Doing carpentry work and painting in maintenance and repair of buildings	1.93	22	1.65	10	1.30	11	1.43	12
43	Mixing, pouring, and finishing concrete	1.61	27	1.40	11	1.17	12	1.29	13
42	Doing plumbing work with iron pipe and/or copper tubing	1.84	24	1.35	12	1.10	14	1.14	15
33	Servicing and repairing small gas engines	2.23	9	1.32	13	1.30	11	1.14	15
17	Doing differential leveling	1.32	32	1.30	14	1.07	15	1.13	15

(Continued)

Item Number	Knowledge or Ability	Graduates				Employers			
		First Year		Second Year		First Year		Second Year	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
34	Servicing and repairing chain saws	2.09	15	1.30	14	1.13	13	1.29	13
36	Sawing and planeing logs for lumber	1.95	20	1.25	15	0.83	22	1.00	17
33	Operation and maintenance of heavy equipment such as a backhoe or a bulldozer	2.02	17	1.25	15	1.03	16	1.29	13
16	Reading and interpreting maps	1.48	29	1.25	16	1.07	15	1.07	16
18	Controlling soil erosion by countour strips, ditches, sod waterways, and terraces	1.36	31	1.15	17	1.10	14	1.07	16
12	Identifying common trees and shrubs	1.43	30	1.10	18	1.10	14	1.13	15
14	Managing reforested lands by pruning and thinning	1.32	32	1.10	18	0.97	18	1.00	17
32	Maintaining and operating machinery and equipment in winter recreation areas such as ski lifts and snow machines	2.68	3	1.10	18	1.00	17	1.14	15
13	Selecting sites for, and planting trees	1.32	32	1.05	19	1.00	17	1.00	17
15	Protecting forest lands against fire	1.23	35	1.05	19	1.07	15	1.20	14
19	Determining lime and fertilizer needs based on soil tests	1.30	33	1.05	19	1.17	12	1.13	15
20	Cruising timber stands to estimate growth and yields	1.25	34	1.05	19	0.93	19	1.00	17
31	Maintaining and operating bridle paths and/or hiking trails	2.05	16	1.05	19	0.83	22	1.00	17
35	Joining metals by arc and/or gas welding	2.14	13	1.05	19	1.10	14	1.07	16
37	Securing and using credit from commercial banks or government agencies	2.00	18	1.05	19	0.97	18	1.00	17

(Continued)

Item Number	Knowledge or Ability	Graduates				Employers			
		First Year		Second Year		First Year		Second Year	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
21	Keeping records on forested lands as to income, expense, and yield	1.23	35	1.00	20	0.93	19	1.00	17
22	Harvesting timber for lumber and/ or pulp	1.32	32	1.00	20	0.93	19	1.07	16
23	Identifying important wildlife species and their habitats	1.32	32	1.00	20	0.93	19	1.00	17
24	Growing fish in fish hatchery	1.95	21	1.00	20	0.83	22	1.00	17
25	Controlling wildlife predators	1.57	4	1.00	20	0.87	21	1.00	17
26	Rearing game birds in confinement	2.43	6	1.00	20	0.83	22	1.00	17
27	Managing a fishing pond through fertilization, controlling undesirable species, and harvesting	2.82	2	1.00	20	0.83	22	1.00	17
28	Growing animals on fur farm	2.55	5	1.00	20	0.83	22	1.00	17
29	Using country, state, and federal assistance for conservation development	2.23	9	1.00	20	0.93	19	1.14	15
30	Knowing and following state and local laws on conservation	1.95	21	1.00	20	1.07	15	1.29	13
40	Taking a census of game birds or animals in an area	1.61	27	1.00	20	0.83	22	1.00	17
44	Serving as a nature guide	1.57	28	1.00	20	0.83	22	1.00	17
45	Giving hunter safety instruction	1.84	24	1.00	20	0.83	22	1.00	17
46	Giving instruction on outdoor skills	2.00	19	1.00	20	0.83	22	1.00	17

Appendix D-3

Ranking of Agricultural Mechanization Knowledges and Abilities by 1970 Graduates and Employers

RANKING OF AGRICULTURAL MECHANIZATION KNOWLEDGES AND ABILITIES AS TO "NEED FOR TRAINING" BY 1973 GRADUATES AND THEIR EMPLOYERS

Item Number	Knowledge or Ability	Graduates				Employers			
		First Year		Second Year		First Year		Second Year	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
2	Accept and carry out responsibility	2.47	11	2.77	1	2.82	2	2.67	3
4	Follows directions	2.52	9	2.77	1	2.86	1	2.78	2
10	Follow safe working procedures	2.47	11	2.77	1	2.79	3	2.78	2
9	On time and rarely absent from work	2.35	14	2.73	2	2.86	1	2.89	1
5	Assumes initiative when necessary	2.17	18	2.63	3	2.50	4	2.22	6
3	Meet and get along well with people	2.38	13	2.46	4	2.21	7	2.67	3
13	Diagnose mechanical malfunctions in machinery and equipment	2.17	18	2.40	5	2.14	8	1.33	11
22	Lubrication and other general preventive maintenance on machinery and equipment	2.27	16	2.40	5	2.36	4	1.44	10
8	Read with understanding	2.22	17	2.32	6	2.32	5	2.22	5
6	Solve routine mathematical problems	2.07	20	2.20	7	1.96	11	1.78	7
7	Write clearly and spell correctly	2.00	21	2.20	7	2.04	9	2.11	6
35	Reading parts manuals	2.50	10	2.12	8	2.00	10	1.33	11
12	Maintenance and repair of engine electrical systems	2.10	19	2.08	9	2.04	9	1.44	10
1	Neat and well groomed	1.77	27	2.04	10	2.32	6	2.44	2
11	Communicate effectively with customers	1.92	24	2.04	10	1.86	12	2.11	6
38	Joining metals with gas and/or arc welding	2.67	6	2.00	11	1.57	18	1.44	10

(Continued)

Item Number	Knowledge or Ability	Graduates				Employers			
		First Year		Second Year		First Year		Second Year	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
27	Repair of farm machinery and equipment excluding tractors	2.77	3	1.92	12	1.68	15	1.33	11
42	Mixing, pouring, and finishing concrete	2.13	16	1.92	12	1.54	19	1.44	10
45	Making out a bill of materials	2.82	2	1.84	13	1.61	17	1.67	8
41	Plumbing work with iron pipe and/or copper tubing	2.70	5	1.80	14	1.68	15	1.11	13
46	Doing carpentry work in construction and/or repair of buildings	1.95	23	1.80	14	1.71	14	1.00	14
30	Calibrating planting, spraying, and fertilizer applying equipment	2.32	15	1.79	15	1.61	17	1.44	10
29	Set-up and adjustment of farm machinery and equipment	2.47	11	1.76	16	1.68	15	1.13	11
38	Applying hard surfacing to metals with a welder	2.57	7	1.72	17	1.43	12	1.67	8
21	Repair of engine cooling systems	1.68	26	1.64	18	1.64	16	1.44	10
17	Refacing valves and valve seats	1.92	24	1.64	18	1.61	17	1.44	10
18	Installing piston rings, wrist pins, and bearings	1.97	22	1.64	18	1.79	13	1.33	11
40	Operating power metal working equipment	2.67	6	1.64	18	1.64	16	1.44	10
34	Ordering parts for stock and/or repair jobs	2.27	18	1.60	19	1.61	17	1.22	12
37	Identifying parts from customer's descriptions	2.32	15	1.60	19	1.39	23	1.11	13
15	Making engine compression checks	1.95	23	1.56	20	1.79	13	1.00	14
33	Keeping business records	2.97	1	1.56	20	1.57	18	1.56	9
16	Locating common engine troubles with electronic test equipment	1.92	24	1.52	21	1.61	17	1.44	10
23	Repair of diesel fuel systems	1.60	29	1.52	21	1.29	27	1.22	12

(Continued)

Item Number	Knowledge or Ability	Graduates				Employers			
		First Year		Second Year		First Year		Second Year	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
24	Repair of hydraulic systems	1.95	23	1.52	21	1.57	18	1.11	13
14	Using the dynamometer	1.70	28	1.44	22	1.19	29	1.22	12
25	Repair of standard transmissions	2.50	11	1.44	22	1.54	19	1.33	11
28	Making service calls to customers	2.55	8	1.44	22	1.21	28	1.33	11
31	Installing materials handling and drying equipment	2.70	5	1.44	22	1.29	27	1.22	12
43	Protecting structures from lightening	2.82	2	1.44	22	1.07	30	1.33	11
32	Repair of silage equipment	2.40	12	1.40	23	1.32	25	1.56	9
36	Taking parts inventory	2.75	4	1.40	23	1.46	21	1.11	13
19	Scheduling shop work	1.50	30	1.36	24	1.43	20	1.33	11
20	Preparing shop orders	1.45	31	1.36	24	1.36	24	1.11	13
26	Repair of automatic transmissions	2.52	9	1.36	24	1.21	28	1.22	12
44	Planning and selecting materials for farm structures	2.40	12	1.36	24	1.32	26	1.11	13

Appendix D-4

Ranking of Ornamental Horticulture Knowledges and Abilities by 1970 Graduates and Employers

RANKING OF ORNAMENTAL HORTICULTURE KNOWLEDGES AND ABILITIES AS TO "NEED FOR TRAINING" BY 1970 GRADUATES AND THEIR EMPLOYERS

Item Number	Knowledge or Ability	Graduates				Employers			
		First Year		Second Year		First Year		Second Year	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
2	Accept and carry out responsibility	2.45	9	3.00	1	2.75	3	2.94	1
4	Follow directions	2.35	11	2.92	2	2.92	1	2.94	1
9	On time and rarely absent from work	2.40	10	2.92	2	2.83	2	2.94	1
5	Assumes initiative when necessary	2.15	15	2.83	3	2.42	4	2.71	2
3	Meet and get along well with people	2.30	12	2.77	4	2.42	4	2.53	3
10	Follow safe working procedures	2.50	8	2.77	4	2.83	2	2.94	1
8	Read with understanding	1.90	18	2.62	5	1.83	9	2.53	3
1	Neat and well groomed	1.95	17	2.46	6	2.33	5	2.24	5
11	Communicate effectively with customers	2.25	13	2.39	7	2.25	6	1.94	8
45	Understanding and complying with business laws and regulations	2.40	10	2.39	7	1.33	13	1.21	19
7	Write clearly and spell correctly	1.75	21	2.31	8	2.00	7	2.24	5
6	Solve routine mathematical problems	1.80	20	2.15	9	1.92	8	2.41	4
39	Keeping and using business records	2.90	3	2.15	9	1.33	13	1.43	16
46	Securing and using credit from commercial banks and/or government agencies	3.05	2	1.77	10	1.00	17	1.79	10
21	Operation and maintenance of power equipment such as tractors, mowers, and edgers	1.60	23	1.69	11	1.50	11	1.38	17

(Continued)

Item Number	Knowledge or Ability	Graduates				Employers			
		First Year		Second Year		First Year		Second Year	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
25	Maintaining trees and shrubs	2.45	9	1.69	11	1.50	11	1.38	17
15	Operating and maintaining greenhouse heating systems	1.45	26	1.62	12	1.25	14	1.25	18
16	Identifying common plant materials	1.85	19	1.62	12	1.42	12	1.19	19
40	Propagating plant materials in the greenhouse by cuttings and/or seed, budding, and grafting	2.80	4	1.62	12	1.33	13	1.43	16
42	Growing common cut flowers, bedding and potted plants in the greenhouse	2.40	10	1.62	12	1.25	14	1.64	12
43	Operating greenhouse structures to maintain proper heat, light, and ventilation	2.20	14	1.62	12	1.25	14	1.07	21
12	Determining lime and fertilizer needs based on soil tests	1.40	27	1.54	13	1.33	13	1.82	9
14	Operating and maintaining greenhouse watering systems	1.35	28	1.54	13	1.25	14	1.12	20
26	Selling ornamental horticulture products and/or services to customers	2.30	12	1.54	13	1.17	15	1.21	19
27	Knowing how to make up soil mixtures for growing plants in the greenhouse	2.75	5	1.54	13	1.25	14	1.71	11
29	Preparing soils for the establishment of turf	2.00	16	1.54	13	1.42	12	1.64	12
30	Maintaining and renovating older lawns	2.15	15	1.54	13	1.50	11	1.43	16
32	Recognizing and knowing how to control the common insect and diseases of plant materials	2.75	5	1.54	13	1.42	12	1.07	21
33	Making out a bill of materials	2.50	8	1.54	13	1.50	11	1.73	10

(Continued)

Item Number	Knowledge or Ability	Graduates				Employers			
		First Year		Second Year		First Year		Second Year	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
37	Growing nursery stock in the nursery	2.60	8	1.54	13	1.17	1	1.43	16
30	Using trade organizations and government agencies	2.55	7	1.54	13	1.33	13	1.50	15
44	Joining metals through use of the arc and/or gas welder	2.80	4	1.54	13	1.33	13	1.43	16
13	Sterilizing soil	1.35	28	1.46	14	1.33	13	1.79	10
17	Identifying the uses and growth characteristics of common plant materials	1.80	20	1.46	14	1.42	12	1.25	18
18	Laying sod for turf	1.55	24	1.46	14	1.67	10	1.25	18
19	Adivising customers how to care for house plants	1.45	26	1.46	14	1.17	15	1.25	18
24	Making a landscape design for an area	1.90	18	1.46	14	1.25	14	1.25	18
33	Doing carpentry work and painting in the maintenance and repair of ornamental horticulture structures	3.40	1	1.46	14	1.42	12	1.57	14
34	Doing plumbing work with iron pipe and/or copper tubing	2.65	6	1.46	14	1.42	12	1.57	14
41	Doing landscape surveying	2.30	12	1.46	14	1.17	15	1.79	10
20	Repair of small gas engines	1.50	25	1.39	15	1.42	12	1.06	21
22	Planting trees and shrubs for customers	1.45	26	1.39	15	1.42	12	2.19	6
23	Making floral arrangements such as centerpieces, corsages, and Christmas decorations	1.65	22	1.39	15	1.50	11	1.13	20
28	Planting and transplanting nursery stock	2.55	7	1.39	15	1.33	13	1.50	15
31	Recommending the appropriate plant materials to customers	2.20	14	1.39	15	1.17	15	1.14	20
36	Mixing, pouring, and finishing concrete	2.65	6	1.39	15	1.33	13	1.57	14