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ABSTRACT

To improve vocational educational programs in agriculture, occupational information on a common core of basic skills within the occupational area of the soil conservation district aide is presented in the revised task inventory survey. The purpose of the occupational survey was to identify a common core of basic skills which are performed and are essential for success in the occupation. Objectives were accomplished by constructing an initial task inventory to identify duty areas and task statements for the occupation. The initial task inventory was reviewed by consultants in the field, and 228 tasks were identified. Data were collected utilizing a questionnaire to 104 identified Ohio soil and water conservation district aides. Ninety questionnaires were returned of which 79 were usable. A compilation of basic sample background information is presented on total work experience, employment at current job, and preparation as a soil conservation district aide. A compilation of duty areas of work performed and work essential for the occupation is given. Percentage performance by incumbent workers and the average level of importance of specific task statements are presented in tabular form. (Author/EC)

DETERMINATION OF A COMMON CORE OF BASIC SKILLS IN AGRIBUSINESS AND NATURAL RESOURCES

An Emperical Determination Of Tasks Essential To Successful Performance As A Soil Conservation District Aide

DEPARTMENT OF AGRICULTURAL EDUCATION
THE OHIO STATE UNIVERSITY
COLUMBUS, OHIO 43210

AN EMPERICAL DETERMINATION OF TASKS ESSENTIAL TO SUCCESSFUL PERFORMANCE AS A SOIL CONSERVATION DISTRICT AIDE

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FOREWORD

The Department of Agricultural Education at The Ohio State University is involved in a major programmatic effort to improve the curricula in education programs in agriculture. One product in this effort is this report of the soil conservation district aide task inventory survey. The data reported were collected as part of a more comprehensive thrust designed to develop a common core of basic skills in agribusiness and natural resources.

It is hoped that the revised task inventory contained in this report will be useful to curriculum developers working for improved occupational relevance in schools. Twenty-seven additional inventories in other occupational areas are also reported from this project.

The profession owes its thanks to Paul H. Waddy, graduate research associate, for his work in preparing this report. Special appreciation is also expressed to Roger Beck, Administrative Specialist of the Ohio Division of Soil and Water Districts, for his input and help in securing the cooperation of those employed in this occupational area.

J. David McCracken
Project Director

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INTRODUCTION

Occupational information is needed to develop and revise vocational and technical education curricula. Teachers and curriculum developers generally determine which skills might be taught in a program based upon teacher expertise, advisory committee input, informal and formal community surveys, and/or task inventories.

The Agricultural Education Department at The Ohio State University has utilized and revised a system for obtaining and using occupational information as an effective aid in planning, improving, and updating occupational education curricula. This report presents the results of a survey of the occupation, soil conservation district aide. The information contained herein may be used by curriculum development specialists, teachers, local and state administrators, and others involved in planning and conducting vocational and technical programs in agriculture.

Purpose and Objectives

The major purpose of the occupational survey was to identify the skills which are performed and essential for success as a soil conservation district aide. The specific objectives of this survey were as follows:

1. Develop and validate an initial task inventory for the soil conservation district aide.
2. Identify the specific tasks performed by the soil conservation district aide.
3. Determine the relative importance of the specific tasks to successful employment as a soil conservation district aide.

Definition of the Occupational Area

The soil conservation district aide works in local soil and water conservation districts located throughout the state. The soil conservation district aide is employed by the board of supervisors for the district. The specific duties performed by the soil conservation district aide will depend on his locality. In general, the soil conservation district aide makes site investigations, preliminary engineering surveys, and soil reconnaissance investigations; lays out and assists in supervising construction of conservation structures; becomes proficient in using surveying tools; assists land users in applying vegetative practices; assists land users in developing and applying conservation cropping systems; assists land users in planning woodland management practices; gives assistance to land users on fish pond management; works with various public relations aspects; makes minor changes in conservation plans; interprets maps; and helps establish recreation land use.

METHODOLOGY

Objectives were accomplished by constructing an initial task inventory, validating the initial inventory, selecting a sample of workers, collecting data, and analyzing data.

Initial Task Inventory

Duty areas and task statements for the soil conservation district aide were identified by searching existing task lists, job descriptions, curriculum guides, and reference publications.

Additionally, contacts with several industry personnel aided in clarifying the specific responsibilities of the soil conservation district aide. All the tasks that the project staff thought to be performed were assembled into one composite list.

The initial tasks were grouped into functional areas called "Duties".

After the task statements were grouped under the proper duty areas, each task statement was reviewed for brevity, clarity, and consistency. In all, 211 task statements were included in the initial task inventory.

Initial Inventory Validation

After the initial task inventory was constructed, it was reviewed by seven consultants employed in soil conservation work. These consultants were either soil conservation district aides, soil conservationists, or administrators with the Division of Soil and Water Districts, Ohio Department of Natural Resources.

The consultants were asked to respond to the initial task list inventory by performing the following activities:

1. Indicate whether any of the tasks listed were not appropriate.
2. Add any additional tasks they believed were performed by the soil conservation district aides.
3. Make changes in the wording of tasks to help add clarity to the statements.

The comments from the seven consultants were pooled and needed revisions were made. Five new duty areas were added as a result of the review process.

As a result of the initial task inventory review process, 228 tasks were identified.

Worker Sample Selection

Since the specific duties and tasks performed by the soil conservation district aide will vary from one geographical region to another, a census of all soil conservation district aides in Ohio was conducted. All soil conservation district aides employed in Ohio were identified through the records maintained by the Division of Soil and Water Districts, Ohio Department of

Natural Resources. The total number of soil and water conservation district aides identified was 104.

Data Collection

A packet of materials was sent to each soil and water conservation district aide in Ohio. The packet of materials included:

1. A cover letter from the Ohio Federation of Soil and Water Conservation Districts.
2. A questionnaire printed on yellow.
3. A stamped and self-addressed return envelope.

The soil conservation district aide was instructed to complete the questionnaire and return it in the stamped and self-addressed return envelope by the date specified in the cover letter.

A follow-up of non-respondnets consisted of mailing a packet of materials two weeks after the initial mailing. The follow-up consisted of a packet of materials identical to the initial packet except that a cover letter on Ohio State University stationery replaced the cover letter on Ohio Federation of Soil and Water Conservation Districts stationery.

Data Analysis

The 90 questionnaires which were returned were checked for completeness and accuracy by the project staff. Information from the 79 usable responses was coded on Fortran coding sheets for key punching. In addition to coding appropriate respondent background information, each specific task statement was coded as to whether it was performed (1 = Task performed by respondent; blank = Task not performed by respondent) and the level of importance of the task (3 = Essential; 2 = Useful; 1 = Not Important) The information was keypunched on IBM cards and verified by personnel at the Instruction and Research Computer Center at The Ohio State University.

The data was analyzed using the SOUPAC-computer program and the facilities of the Instruction and Research Computer Center. Consultant assistance for analyzing the data was provided by personnel at The Center for Vocational Education. The SOUPAC computer analysis resulted in the computation of relative frequencies, means, and rankings for each task statement. The results of the computer analyses were printed in tabular form for ease of interpretation.

FINDINGS

Objectives of the study resulted in the compilation of basic sample background information, the determination of tasks performed by the soil conservation district aide, and the identification of tasks essential to successful performance as a soil conservation district aide.

Description of the Sample

Information regarding the performance of tasks and the importance of the tasks to successful employment as a soil conservation district aide was obtained from soil conservation district aides across Ohio.

Response to the Survey

A total of 104 questionnaires were mailed and 90 replies were received. This represented an 86.5% rate of return. The response to the questionnaire is summarized in TABLE I.

TABLE I

EMPLOYEE RESPONSE TO THE QUESTIONNAIRE

	N	Percent of All Employees In the Survey
Employees in Survey	104	100.0
Total Returns	90	86.5
Usable Returns	79	75.9
Unusable Returns	11	10.6
Nonrespondents	14	13.4

Total Work Experience

Soil conservation district aides with varying amounts of work experience in soil conservation work were included in the study. TABLE II summarizes the responses to the question, "How many total years have you worked in the soil conservation service?" Thirty-eight soil conservation district aides or 49.4% had from one to three total years of work experience in the soil conservation service. Fourteen soil conservation district aides or 18.2% had from four to six total years of work experience in the soil conservation service. Fourteen soil conservation district aides or 18.2% had from seven to ten total years of work experience in

the soil conservation service. The total years of work experience in the soil conservation service ranged from 1-23 years. Soil conservation district aides had an average of 5.5 years of total work experience in the soil conservation service.

TABLE II

TOTAL AMOUNT OF WORK EXPERIENCE
IN THE SOIL CONSERVATION SERVICE

Years	N	Percent of Respondents
1-3	38	49.4
4-6	14	18.2
7-10	14	18.2
11-14	5	6.5
15-18	5	6.5
19 or more	1	1.2
Total	77	100.0

$\bar{X}$ years in the soil conservation service = 5.5

Employment at Current Job

Soil conservation district aides in the survey had spent varying amounts of time in their present job. TABLE III summarizes the responses to the question, "How many years have you worked at your present job?" Forty-one soil conservation district aides or 53.3% had worked at their present job from one to three years. Fifteen soil conservation district aides or 19.6% had worked at their present job from seven to ten years. Thirteen soil conservation district aides or 16.9% had worked at their present job from four to six years. The years of work at their present job ranged from 1-18 years. Soil conservation district aides had been employed at their present job an average of 4.8 years.

Preparation as a Soil Conservation District Aide

Soil conservation district aides obtained training for their job from various sources. TABLE IV summarizes their responses to the question, "Where did you receive your training as a soil conservation district aide?" Seventy-seven soil conservation district aides or 100% indicated they received training on-the-job. Seventeen soil conservation district aides or 22% indicated

they received training through a high school program. Fourteen soil conservation district aides or 18.1% indicated they had received training by attending a college or university program. Twelve or 15.5% indicated they had received training as a soil conservation district aide through a technical school program.

TABLE III

LENGTH OF TIME AT PRESENT JOB

Years	N	Percent of Respondents
1-3	41	53.3
4-6	13	16.9
7-10	15	19.6
11-14	4	5.1
15 or more	4	5.1
Total	77	100.0

$\bar{X}$ years at present job = 4.8

TABLE IV

SOURCE OF TRAINING RECEIVED AS A SOIL CONSERVATION DISTRICT AIDE

Source	N	Percent of All Employees In the Survey
On-The-Job	77	100.0
High School Program	17	22.0
Technical School Program	12	15.5
College/University Program	14	18.1

Duty Areas of Work Performed by the Soil Conservation District Aide

The 228 tasks were grouped under 19 duty areas. Each respondent indicated whether he performed the specific task in his current position as a soil conservation district aide. The percentages of respondents performing each task were averaged for all tasks under each duty area. The mean percentage of incumbents who performed specific tasks in specified duty areas is presented in TABLE V.

Duty areas of work in which 50% or more of the incumbent workers performed the tasks were:

1. Assisting in Surveying
2. Assisting in Mapping Soils and Interpreting Soil Maps
3. Assisting in Planning and Constructing Drainage Systems
4. Assisting in Planning and Constructing Ponds
5. Using and Maintaining Tools and Survey Equipment
6. Operating Power Equipment and Vehicles
7. Following Legal Regulations
8. Performing General Office Work
9. Recording Information
10. Using Technical Publications

Duty Areas of Work Essential for Successful Performance as a Soil Conservation District Aide

A level of importance rating was obtained for each task. The respondent could rate the task as essential, useful, or not important for successful performance as a soil conservation district aide. A ranking of essential was assigned a numerical rating of "3", useful a numerical rating of "2", and not important a numerical rating of "1". The level of importance ratings for each task were averaged for all tasks under each duty area. The average level of importance ratings for the specific tasks in the specified duty areas are presented in TABLE V.

Duty areas of work which received a 2.0 or higher level of importance rating by incumbent workers were:

1. Assisting in Surveying
2. Assisting in Mapping Soils and Interpreting Soil Maps
3. Assisting in Classifying Land
4. Assisting in Planning and Constructing Drainage Systems

5. Assisting in Planning and Constructing Ponds
6. Assisting in Establishing Conservation Structures to Control Erosion
7. Assisting in Establishing Ground Covers
8. Using and Maintaining Tools and Survey Equipment
9. Operating Power Equipment and Vehicles
10. Following Legal Regulations
11. Performing General Office Work
12. Recording Information
13. Using Technical Publications
14. Managing Woodland Areas
15. Managing Ponds and Wildlife Areas
16. Planning Animal Waste Pollution Controls

Percentage Performance and Level of Importance Ratings of Specific Tasks

The percentage performance by incumbent workers and the level of importance for each specific task is also presented in TABLE V.

It is recommended that the results for each specific task be examined by educators and others who are developing educational programs to determine curriculum content for preparing soil conservation district aides. Specific tasks with a high level of performance and a high level of importance rating should be given more emphasis in the educational program than specific tasks with a low level of performance and a low level of importance rating.

TABLE V

PERCENTAGE PERFORMANCE AND AVERAGE RATING OF IMPORTANCE* OF SPECIFIC TASKS

TASK STATEMENTS	Percent Performing	Average Level of Importance
Assisting in Surveying		
Assist in preparing survey work plans	92	2.8
Carry survey equipment in field work	98	2.9
Check survey instruments for adjustments	60	2.4
Determine distance by use of stadia, pacing, chaining, and taping	97	2.9
Determine equipment needed to complete surveys	91	2.9
Determine slope with hand level	79	2.5
Establish turning points	97	2.9
Give hand signals in field work	94	2.8
Help run topographic survey	97	2.9
Identify bench marks	98	3.0
Read and interpret survey maps	94	2.8
Run bench level circuit	91	2.8
Run profile to determine ground elevations	98	2.9
Set slope stakes	83	2.7
Set up survey equipment in the field	100	3.0
Take a backsight and foresight	97	2.9
Use grade rod	87	2.8
Mean Rating	91.3	2.8
Assisting in Mapping Soils and Interpreting Soil Maps		
Color land capability maps	50	2.0
Determine erosion conditions from maps	57	2.4
Determine land slope from maps	74	2.6
Determine land use classifications from maps	57	2.5
Determine present land use from maps	60	2.4
Determine soil name from maps	85	2.6
Draw layout from survey field notes	89	2.8
Identify erosion boundaries on maps	48	2.2
Identify land classifications on maps	60	2.3
Identify land use boundaries on maps	61	2.3
Identify slope boundaries on maps	58	2.3
Identify soil boundaries on maps	73	2.3
Interpret aerial photographs in making farm maps	78	2.5
Interpret soil map legend	85	2.6

*Average rating of importance may range from 1-3 with 3 being the highest

TABLE V (Cont.)

PERCENTAGE PERFORMANCE AND AVERAGE RATING OF IMPORTANCE OF SPECIFIC TASKS

TASK STATEMENTS	Percent Performing	Average Level of Importance
Transpose data from field notes to farm maps	74	2.5
Use soil numbering system	69	2.4
Mean Rating	67.0	2.4
Testing Soil and Plant Tissues		
Interpret plant tissue test results	5	1.4
Interpret soil test results	28	2.1
Prepare forms to submit with plant tissues	5	1.4
Prepare forms to submit with soil samples	19	1.8
Prepare plant tissues to be submitted to testing laboratory	2	1.4
Prepare soil to be submitted to testing laboratory	17	1.7
Test soil with portable kits	10	1.6
Mean Rating	12.2	1.6
Assisting in Planning Fertilization Programs		
Calculate estimated costs of fertilizer and lime recommendations	24	1.8
Determine amount of fertilizer and lime to apply	29	1.9
Determine kind of fertilizer and lime to apply	25	1.8
Determine when to apply fertilizer and lime	28	2.0
Evaluate affect leaching and placement have on nutrient availability	7	1.6
Evaluate influence of fertilization on soil moisture and water use	5	1.7
Evaluate influence soil pH has on nutrient availability	15	1.5
Identify function of lime on crop production	15	1.8
Identify function of major nutrients in crop production	15	1.8
Identify function of micro nutrients in crop production	7	1.6
Identify nutrient deficiency symptoms in growing plants	11	1.7
Interpret fertilizer and lime recommendations from soil tests	29	2.1
Interpret labels on fertilizer bags	29	2.1
Recommend appropriate methods of fertilizer application	28	1.9
Mean Rating	19.0	1.8

TABLE V (Cont.)

PERCENTAGE PERFORMANCE AND AVERAGE RATING OF IMPORTANCE OF SPECIFIC TASKS

TASK STATEMENTS	Percent Performing	Average Level of Importance
Assisting in Classifying Land		
Classify land as either cropland or non-cropland	47	2.3
Construct soil profile	23	1.9
Determine color of soil	38	2.0
Determine depth of topsoil and subsoil layers	55	2.3
Determine flooding problems of various lands	55	2.4
Determine land use classification of various lands	38	2.2
Determine most limiting factor of various soils	33	2.1
Determine organic matter content	16	1.7
Determine soil slope	61	2.5
Determine soil structure	35	2.1
Determine soil texture	42	2.3
Determine soil types present	53	2.3
Determine subsoil permeability	43	2.1
Determine type and degree of erosion	41	2.3
Evaluate available moisture capacity of soil	25	2.0
Evaluate climatic conditions which influence land use	23	1.9
Evaluate presence of unfavorable chemical conditions in soils	10	1.7
Evaluate natural soil drainage capability	48	2.5
Identify characteristics of various land classes	37	2.2
Identify type of parent material	28	1.9
Mean Rating	37.5	2.1
Assisting in Planning and Constructing Drainage systems		
Calculate amount of water to be drained	87	2.9
Compute estimated cost of planned drainage system	87	2.7
Determine depth and grade for main and lateral undergound drains	94	2.9
Determine grade and size of tiles and tubing to be used	93	2.9
Determine how land should be drained	89	2.9
Determine size of outlet needed	90	2.9
Determine spacing for tile and tubing	89	2.9

TABLE V (Cont.)

PERCENTAGE PERFORMANCE AND AVERAGE RATING OF IMPORTANCE OF SPECIFIC TASKS

TASK STATEMENTS	Percent Performing	Average Level of Importance
Evaluate various types of drainage systems	77	2.8
Identify boundaries and slopes of areas needing drainage	88	2.8
Identify outlet for drainage	94	2.9
Identify various land areas draining into each part of the drainage system	84	2.8
Interpret detailed soil map	71	2.6
Lay out bedding surface drainage system	33	2.2
Lay out cross slope ditch surface drainage system	42	2.4
Lay out field ditch surface drainage system	72	2.7
Lay out parallel ditch surface drainage system	45	2.4
Lay out planned drainage system on land map	67	2.6
Lay out random ditch surface drainage system	67	2.6
Lay out side slope surface drainage system	38	2.2
Lay out water gates	2	1.6
Locate and determine elevation of all swales and water-courses, knolls, and ridges	75	2.6
Locate existing drains	87	2.7
Stake location of drainage system in field	89	2.7
Mean Rating	72.1	2.6
Assisting in Planning and Constructing Ponds		
Calculate runoff rate	74	2.8
Determine annual average rainfall in watershed	72	2.7
Determine depth of pond	85	2.8
Determine location and depth of core trench	83	2.9
Determine rainfall frequency	70	2.6
Determine size of fill needed	81	2.8
Determine size of pond needed	74	2.7
Determine type of spillway to use	74	2.7
Determine water requirements to be made of pond	57	2.5
Develop sketch of proposed pond	88	2.5
Evaluate the suitability of various soils for pond sites	76	2.8
Identify boundaries of watershed	83	2.8
Interpret runoff tables	73	2.7
Locate slope stakes	73	2.6
Select the pond site	75	2.7
Stake out base line	70	2.6
Stake out fill site	79	2.7

TABLE V (Cont.)

PERCENTAGE PERFORMANCE AND AVERAGE RATING OF IMPORTANCE OF SPECIFIC TASKS

TASK STATEMENTS	Percent Performing	Average Level of Importance
Work with engineers in planning and constructing ponds	78	2.7
Mean Rating	75.0	2.7
Assisting in Establishing Conservation Structures to Control Erosion		
Assist in supervising construction of contours	43	2.3
Assist in supervising construction of diversions	55	2.5
Assist in supervising construction of terraces	19	1.9
Assist in supervising construction of waterways	74	2.7
Check finished terraces for high and low spots	19	2.0
Determine amount of runoff to be handled by the structure	66	2.7
Determine grade in diversions	57	2.5
Determine grade in terraces	17	2.0
Determine length and width of terraces	15	1.9
Determine location of shelterbelts and windbreaks	30	2.2
Determine location of terraces	15	1.9
Determine location of waterway	76	2.7
Determine shape of waterway	71	2.7
Determine size of diversion needed	55	2.6
Determine size of waterway	73	2.8
Determine type of conservation structure needed to control erosion	66	2.8
Determine water velocity in waterway	66	2.7
Determine width of contour strips	26	2.2
Identify outlets for diversions	50	2.5
Identify outlets for terraces	16	2.0
Lay out contour strips	29	2.2
Locate diversion ditches	47	2.4
Plan channel outlet for terraces	15	2.0
Recommend maintenance practices for diversions	44	2.4
Recommend seeding practices and maintenance practices for waterways	71	2.8
Recommend varieties of trees to plant in shelterbelts and windbreaks	43	2.3
Recommend vegetation for diversion ditches	50	2.4
Recommend vegetation for waterways	67	2.7
Stake diversions	58	2.5

TABLE V (Cont.)

PERCENTAGE PERFORMANCE AND AVERAGE RATING OF IMPORTANCE OF SPECIFIC TASKS

TASK STATEMENTS	Percent Performing	Average Level of Importance
Stake terraces	17	1.9
Mean Rating	44.0	2.3
Assisting in Planning the Cropping Program		
Advise on crop variety selection	20	1.9
Advise on disease control practices	14	1.7
Advise on harvesting of crops	20	1.7
Advise on insect control practices	15	1.7
Advise on planting dates	26	1.9
Advise on selecting crops for strip cropping	21	1.9
Advise on weed control practices	20	1.7
Determine crops to be grown	20	1.9
Develop overall crop rotation	26	2.1
Identify appropriate green manure and cover crops to use	25	2.1
Identify proper tillage practices	26	2.0
Use soil test results	26	2.1
Mean Rating	21.5	1.8
Assisting in Establishing Ground Covers		
Advise farmers on importance of establishing ground covers	51	2.3
Advise on insect and disease control practices for ground covers	11	1.7
Advise on length of time soil should remain in ground covers	21	2.0
Advise on planting dates for ground covers	30	2.1
Advise on seeding rates for ground covers	42	2.2
Advise on utilizing crop residue in soil	26	2.1
Determine if ground covers are needed	34	2.3
Recommend ground covers to be grown with crops	24	2.1
Mean Rating	29.8	2.1
Using and Maintaining Tools and Survey Equipment		
Adjust tools and equipment	56	2.5

TABLE V (Cont.)

PERCENTAGE PERFORMANCE AND AVERAGE RATING OF IMPORTANCE OF SPECIFIC TASKS

TASK STATEMENTS	Percent Performing	Average Level of Importance
Clean tools and survey equipment	93	2.8
Identify tools	92	2.8
Interpret tool and equipment operation instructions	84	2.8
Recondition tools	50	2.3
Select tools and survey equipment for specific jobs	87	2.9
Store tools and survey equipment	93	2.8
Use hand tools safely	92	2.9
Use power tools safely	38	2.4
Set-up survey equipment	92	2.9
Mean Rating	86.3	2.2
Operating Power Equipment and Vehicles		
Interpret gauge readings on vehicles	85	2.8
Operate vehicles on public highways	87	2.8
Mean Rating	86.0	2.8
Following Legal Regulations		
Interpret Ohio drainage laws	60	2.8
Mean Rating	60.0	2.8
Performing General Office Work		
File office forms and records	85	2.7
Greet people	97	2.9
Operate office equipment	85	2.7
Schedule appointments	79	2.8
Use telephone	94	2.9
Write letters, notes, memos	87	2.7
Set-up displays	75	2.3
Set-up tours and field trips	38	2.3
Maintain office literature display	38	2.1
Serve as guide on tours and field days	50	2.4
Prepare news releases	37	2.1
Mean Rating	69.5	2.5

TABLE V (Cont.)

PERCENTAGE PERFORMANCE AND AVERAGE RATING OF IMPORTANCE OF SPECIFIC TASKS

TASK STATEMENTS	Percent Performing	Average Level of Importance
Recording Information		
Assist in recording information on survey reports	85	2.8
Recheck all survey information for accuracy	91	2.9
Record survey field notes	97	2.9
Sketch illustrations in survey field notes	96	2.9
Mean Rating	92.2	2.8
Using Technical Publications		
Use and interpret agronomy guides	70	2.7
Use and interpret engineering handbooks	92	2.9
Mean Rating	81.0	2.8
Managing Woodland Areas		
Advise on fire prevention and protection measures	15	2.1
Advise on site preparation for planting trees	33	2.2
Identify common tree diseases	12	1.8
Identify common tree insects	12	1.8
Identify trees	52	2.3
Recommend planting rates and time	37	2.1
Recommend variety of trees for planting	38	2.2
Mean Rating	28.4	2.0
Managing Ponds and Wildlife Areas		
Advise owners on amount of fertilizer to apply to ponds	47	2.3
Advise owners on chemicals to control pond weeds and algae	61	2.4
Advise owners on mechanical methods to control weeds in ponds	38	2.3
Advise owners on pond stocking rates and species	60	2.4
Advise owners on type of fertilizers to apply to ponds	43	2.2
Advise owners on when to apply pond fertilizers	39	2.1
Advise regarding location of wildlife covers	41	2.2
Identify common general weeds	50	2.3

TABLE V (Cont.)

PERCENTAGE PERFORMANCE AND AVERAGE RATING OF IMPORTANCE OF SPECIFIC TASKS

TASK STATEMENTS	Percent Performing	Average Level of Importance
Identify common pond weeds	42	2.3
Identify species of fish	42	2.2
Identify various species of wildlife game and birds	44	2.1
Select appropriate ground cover for wildlife covers	41	2.1
Mean Rating	45.6	2.2
Planning Animal Waste Pollution Controls		
Calculate manure storage requirements	34	2.3
Calculate fertilizer value of manure	15	1.9
Calculate manure field spreading rate	16	2.0
Draw existing farmstead layout	60	2.3
Make construction drawings of manure storage	39	2.4
Check to see if construction is built according to plan	56	2.6
Evaluate the potential for pollution from feedlots, silage drainage, and milking parlors	30	2.3
Prepare construction permit forms	10	1.7
Determine flood frequency for a manure storage	16	2.1
Determine lagoon area for aerobic treatment	5	1.9
Lay out a diversion for a feedlot	38	2.4
Calculate feedlot runoff settling area	24	2.3
Recommend the best times to spread manure to minimize disturbing neighbors	19	2.1
Recommend sources of information on manure management	16	2.2
Mean Rating	27.0	2.1