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Building course calendars in vocational agriculture

Clarence Ray Evans

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To the Graduate Council:

I am submitting herewith a thesis written by Clarence Ray Evans entitled "Building course calendars in vocational agriculture." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural and Extension Education.

George W. Weigers, Jr., Major Professor

We have read this thesis and recommend its acceptance:

M.C. Bell

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

July 30, 1955

To the Graduate Council:

I am submitting herewith a thesis written by Clarence Ray Evans entitled "Building Course Calendars in Vocational Agriculture." I recommend that it be accepted for nine quarter hours of credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Education.

J. E. W. Wiegman, Jr.
Major Professor

We have read this thesis
and recommend its acceptance:

M. C. Bell

Chas. B. Gray

Accepted for the Council:

E. H. Waters
Dean of the Graduate School

CRANES OF CREST

BUILDING COURSE CALENDARS IN VOCATIONAL AGRICULTURE

A THESIS

Submitted to
The Graduate Council
of
The University of Tennessee
in
Partial Fulfillment of the Requirements
for the degree of
Master of Science

by
Clarence Ray Evans
August 1955

CRANES OF CREST

222

ACKNOWLEDGMENT

This study would not have been possible without the professional interest and cooperation of many persons. The writer desires to acknowledge his indebtedness to all those who assisted in the progress of the study.

Appreciation is expressed to the various cooperating technical people at the University of Tennessee, to the teachers of vocational agriculture and the district supervisor of vocational agriculture in East Tennessee, to the Department of Agricultural Education of the University of Tennessee, and to the writer's wife for typing and helping summarize data in the study.

Finally, the author wishes to acknowledge an especial obligation to Dr. George W. Weigers, Jr., Professor of Agricultural Education, University of Tennessee, who directed the study, and who provided helpful guidance and stimulating counsel.

TABLE OF CONTENTS

CHAPTER	PAGE
I. THE PROBLEM AND ITS DEFINITION	1
General introduction	1
Statement of the problem	1
Importance of study	2
Definition of terms	3
Scope of the study	4
Assumptions	4
Review of related literature	5
Methods of procedure and sources of data	9
Organization of the study	11
II. ENTERPRISES AND JOB ANALYSIS	13
General	13
Presentation of findings	13
Field crop enterprises	13
Horticulture enterprises	13
Farm animal enterprises	13
Job analysis	16
Beef cattle	16
Dairy cattle	17
Sheep	18
Swine	18
Poultry	19
Corn	20

CHAPTER

PAGE

II. (continued)	
Cotton	20
Hay	21
Pastures	21
Small grains	22
Soybeans	22
Tobacco	23
Gardens	24
Irish potatoes	24
Tomatoes	25
Small fruits	25
Strawberries	26
Tree fruits	27
Forestry	27
Chapter summary	28
III. INSTRUCTIONAL HOURS	30
Discussion of findings	30
Chapter summary	50
IV. MONTHS TO DO THE JOBS	56
Discussion of findings	56
Chapter summary	76
V. SUMMARY AND RECOMMENDATIONS	80
The problem	80
Method of procedure	80

CHAPTER

PAGE

V. (continued)

Review of literature	81
Enterprises and job breakdowns	82
Instructional hours	82
Time to do the job	83
Recommendations	84
Course calendar	87
Suggestions for use of data	89
Suggested studies	91
BIBLIOGRAPHY	92
APPENDIX	95

LIST OF TABLES

TABLE	PAGE
I. Number and Scope of Field Crop Enterprises Reported by East Tennessee Vocational Agriculture Students for the Year Ending December 31, 1954	13
II. Number and Scope of Horticulture Enterprises Reported by East Tennessee Vocational Agriculture Students for the Year Ending December 31, 1954	14
III. Number and Scope of Farm Animal and Poultry Enterprises Reported by Vocational Agri- culture Students for the Year Ending December 31, 1954	15
IV. Instructional Hours Used in Teaching the Beef Cattle Enterprise	31
V. Instructional Hours Used in Teaching the Dairy Cattle Enterprise	32
VI. Instructional Hours Used in Teaching the Sheep Enterprise	33
VII. Instructional Hours Used in Teaching the Swine Enterprise	35
VIII. Instructional Hours Used in Teaching the Poultry Enterprise	36

TABLE

PAGE

IX.	Instructional Hours Used in Teaching the Corn Enterprise	37
X.	Instructional Hours Used in Teaching the Cotton Enterprise	38
XI.	Instructional Hours Used in Teaching the Hay Enterprise	40
XII.	Instructional Hours Used in Teaching the Pasture Enterprise	41
XIII.	Instructional Hours Used in Teaching the Small Grain Enterprise	42
XIV.	Instructional Hours Used in Teaching the Soybean Enterprise	43
XV.	Instructional Hours Used in Teaching the Tobacco Enterprise	44
XVI.	Instructional Hours Used in Teaching the Garden Enterprise	46
XVII.	Instructional Hours Used in Teaching the Irish Potato Enterprise	47
XVIII.	Instructional Hours Used in Teaching the Tomato Enterprise	48
XIX.	Instructional Hours Used in Teaching the Small Fruit Enterprise	49
XX.	Instructional Hours Used in Teaching the Strawberry Enterprise	51

TABLE

PAGE

XXI.	Instructional Hours Used in Teaching the Tree Fruit Enterprise	52
XXII.	Instructional Hours Used in Teaching the Forestry Enterprise	53
XXIII.	Months to do Jobs in the Beef Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	56
XXIV.	Months to do Jobs in the Dairy Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	58
XXV.	Months to do Jobs in the Sheep Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	59
XXVI.	Months to do Jobs in the Swine Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	60
XXVII.	Months to do Jobs in the Poultry Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	61
XXVIII.	Months to do Jobs in the Corn Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	62
XXIX.	Months to do Jobs in the Cotton Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	64

TABLE

PAGE

XXX.	Months to do Jobs in the Hay Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	65
XXXI.	Months to do Jobs in the Pasture Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	66
XXXII.	Months to do Jobs in the Small Grain Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	67
XXXIII.	Months to do Jobs in the Soybean Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	68
XXXIV.	Months to do Jobs in the Tobacco Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	70
XXXV.	Months to do Jobs in the Garden Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	71
XXXVI.	Months to do Jobs in the Irish Potato Enter- prise as Indicated by Teachers of Vocational Agriculture in East Tennessee	72
XXXVII.	Months to do Jobs in the Tomato Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	73

TABLE

PAGE

XXXVIII.	Months to do Jobs in the Small Fruit Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	74
XXXIX.	Months to do Jobs in the Strawberry Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	75
XL.	Months to do Jobs in the Tree Fruit Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	77
XLI.	Months to do Jobs in the Forestry Enterprise as Indicated by Teachers of Vocational Agriculture in East Tennessee	78
XLII.	Productive Enterprises of Twenty Sophomore Vocational Agriculture Boys at Everett High School, 1955	86

CHAPTER I

THE PROBLEM AND ITS DEFINITION

General Introduction

Even before school begins, a teacher of vocational agriculture should be able to anticipate problems in agriculture to be encountered with the learner. This can be done through interviews with the learner on his farm during the summer, through observation of the learner's supervised farming program, and examination of his farming records. From this information and observation the teacher may formulate a tentative course plan.

Statement of the Problem

This was a study to collect and organize information useful for developing vocational agriculture course calendars. The purpose of this study was to seek solutions to these course building problems in vocational agriculture:

1. What productive enterprises are in evidence on East Tennessee farms?
2. What jobs should vocational agriculture students know and be able to do in their farming programs?
3. What month or months should each job be done?
4. What month or months should each job be studied?
5. What amount of instructional time should be scheduled for teaching each job?

6. How can job calendars be used effectively in making course calendars?

Importance of the Study

In the past, teachers have followed prepared guides for course calendars or have borrowed course calendars from experienced teachers and have been encouraged to use these guides and tried calendars, but these practices can no longer be justified. Conscientious, progressive teachers welcome the opportunity to assume the major responsibility for planning course calendars based on the needs of their students. These teachers, however, encounter difficulties in reaching decisions on what jobs to teach, when to teach the jobs selected, how much time to schedule for each job, and other problems.

Beginning teachers are frequently pressed for time in developing course calendars and, as a result, resort to borrowing course calendars from neighboring teachers. Some teachers never plan course calendars, but teach jobs as they arise or plan from week to week. An analysis of many course calendars in use today indicates that these calendars are not based on fact and sound judgment. Both beginning and experienced teachers have expressed a need for solutions to problems included in this study.

The teacher training staff has not provided adequate opportunity for experience in planning course calendars for

students enrolled in the Agricultural Education Curriculum. One reason for this is the lack of sufficient information on course building to develop confidence and competence in trainees. This lack of training may be a factor in causing beginning teachers to turn to neighboring teachers and printed guides in developing their course calendars.

Some course calendars seem to be built around the subject matter available. Subject matter materials should not determine the content of course calendars since these materials are designed to be used as an aid in teaching the jobs found in the course calendars. Information collected and organized in this study should be helpful in planning future subject matter publications to meet more adequately instructional needs.

Supervisors have rendered limited service to teachers in developing course calendars. Perhaps one reason for this is that supervisors do not have adequate information to give the type of help they would like to give. This study should supply some of the needed information.

Definition of Terms

"Course calendar" refers to the arrangement of the course of study within the year showing the jobs to be studied each month.

An "Enterprise job calendar" refers to a job breakdown of the productive enterprise showing when each job is to be

done in the individual's farming program and when the job is to be studied.

"Technical people" refers to members of the teaching and extension staffs at the University of Tennessee.

"Instructional time" is defined as the number of class periods based on the normal fifty minute period which is common in East Tennessee schools.

A "farm job" used as a teaching unit is defined as a complete unit of work in the production and marketing of a farm enterprise. One job may be distinguished from another by the place where the work is performed, by the purpose of the work, and by the equipment used, if any.

Scope of the Study

The study was limited to productive enterprises included in the general headings of field crops, horticulture, forestry, farm animals, and poultry.

Only enterprises which are commonly found in the Grand Division of the state known as the East Tennessee district were included.

Teachers surveyed were only those under the supervision of the East Tennessee district supervisor.

Assumptions

This study was based on the following assumptions:

1. The course calendars for students of vocational

agriculture should be based on their present and foreseeable agricultural needs.

2. The jobs included in the course calendars should be scheduled as seasonably as possible.
3. The students of vocational agriculture should share in developing the instructional program of which they are a part.
4. Sufficient time should be scheduled for students to find solutions to their problems which they understand and can use in conducting their farming programs.

Review of Related Literature

Hammonds¹ stated that the agriculture course builder should know as much as possible about the farming that is carried on in the community, or larger region, in which the course is to be used. Some of the questions asked were concerned with what crop and animal enterprises the farming consists of, what combinations of enterprises are common and what is their relative economic importance. The case was also made for using the farming programs of the student in planning course calendars.

¹Carsie Hammonds, Teaching Vocational Agriculture (New York: McGraw-Hill Book Co., Inc., 1950) pp. 63-95.

Beamer² pointed out that it seems to be rather uniform procedure in many of the states to take the boy's supervised farming program and break it down into farmer jobs or study units. These jobs are arranged on a seasonal basis so as to keep study and application close together.

Langston³ outlined a plan of course building using individual students to help form objectives, set up evaluative criteria, plan course calendars, and arrange course materials.

Wieggers⁴ stated that a job calendar is a student's record of decisions he has made concerning one enterprise. In a job calendar he included the month or months each job is usually done and when the student intends to study the jobs listed. Later, the student indicates the month each job was actually studied and when he drew up plans for doing the job. He stated that each student needs to make a calendar for each productive enterprise in his supervised farming program. He suggested that the decisions ought to be made as a part of class instruction under the supervision of the teacher of vocational agriculture. A set of concerns was identified for

²Rufus W. Beamer, "Improving Instruction Through Supervised Farming," Agriculture Education Magazine, 23:205, March, 1951.

³C. N. Langston, "A Plan for Course Building," Agriculture Education Magazine, 27:246, May 1955.

⁴George W. Wieggers, Jr., "Make a Job Calendar," Better Farming Methods, p. 20, February 1954.

the student and teacher to consider in making job calendars, namely: determine what jobs progressive farmers do in the selected productive enterprise, determine when farmers do these jobs, and decide when to study each job. It was suggested that the study of each job should ordinarily precede the doing of that job by at least several days or weeks in order that the student may make realistic decisions and develop precise plans for actually doing the job. A pattern for developing a job calendar on the tobacco enterprise was presented.

Binkley⁵ showed a plan entitled "Individual-Problem Work Sheet." The plan is a modification of the job calendar pattern presented by Wiegers in the Agricultural Education Magazine. The basic pattern was unchanged, only changes in terminology were noted.

Jones⁶ said that using a system whereby boys list enterprises and break them down into jobs awakens their natural curiosity and gives an excellent introduction to the various subjects. It gives a more unified and practical program, a feeling on the part of boys that the program is their program, a decrease in discipline problems, and less drop outs.

⁵Harold R. Binkley, "Individual-Problem Days in Teaching Vocational Agriculture," Agriculture Education Magazine,

⁶Richard Jones, "Teacher-Pupil-Parent Planning in Determining Course Content," Agriculture Education Magazine, 25:62, September 1952.

Phipps⁷ described how a teacher should plan a course of study by: (1) making a list of enterprises and units to be included in each year's program, (2) determining days to allot to each enterprise by years, (3) dividing enterprises and units into problem areas to be taught, (4) estimating the number of days to devote to each problem area, (5) deciding on the year and month to teach each problem area, and (6) preparing a monthly layout of problem areas.

Estep⁸ pointed out that there are many jobs connected with an enterprise and that failure to carry out any one of these jobs successfully may lead to failure. He set up a plan for studying the farming in the local community as a basis for planning course calendars.

Garris⁹ devoted a whole chapter to planning course calendars, using the system of starting with individual job calendars. He listed step by step procedure and showed different forms to use for planning. He stated that the enterprises would have to be analyzed into jobs and the jobs arranged into months and years.

⁷Lloyd J. Phipps and Glenn Charles Cook, A Handbook for Teaching Vocational Agriculture, (Danville, Illinois: The Interstate Printers and Publishers, 1952) pp. 176-198.

⁸Tipton C. Estep, Relationship Between Course Content and Community Types of Farming, Non-Thesis Study, The University of Tennessee Agriculture Education Department, 1949.

⁹E. W. Garris, Teaching Vocational Agriculture, (New York: McGraw-Hill Book Company, Inc., 1954) pp. 121-138.

Elliot¹⁰ set up a method for planning course materials, showed examples of enterprise breakdowns, and gave many other helps for the local teacher in planning for instruction.

Richards¹¹ broke the enterprises down into jobs and listed things to consider in studying jobs.

Wiegers¹² included sets of enterprise job calendar forms in a notebook for students of vocational agriculture. The accompanying instructions discussed and illustrated answers to these questions: What is a job calendar? Why make a job calendar? and, How can a job calendar be made?

Methods of Procedure and Sources of Data

The procedure followed was to make a review of recent literature devoted to the subject of planning courses for vocational agriculture. From these readings and discussions with the district supervisor and teacher trainers the investigator set up a list of enterprises found on East Tennessee farms. This list was verified by comparing it with a list of enterprises obtained from the district supervisor, taken from the

¹⁰Eugene B. Elliot, et.al., Teaching Techniques and Instructional Planning for High School Classes in Vocational Agriculture, Bulletin 290, The Division of Education, Michigan State College, 1948.

¹¹C. E. Richards, et.al., Suggested Teaching Units in Vocational Agriculture, Agriculture Education Bulletin No. 17, Virginia Polytechnic Institute, Revised 1952.

¹²George W. Wiegers, Jr., Notebook for the Student of Vocational Agriculture, (Alcoa, Tennessee: B-D-F Service, 1955).

final supervised farming reports.

The enterprises were broken down by the investigator, using the related literature and block teaching plans obtained from the Tennessee Agricultural Education Department as sources of suggestion.

These jobs were compared with the course calendars of ten selected teachers of vocational agriculture. These teachers were selected in conferences with the district supervisor and teacher trainers.

This job breakdown was presented to eight professors of technical agriculture at the University of Tennessee for their comments and suggestions.

A questionnaire was mailed to the ten teachers whose course calendars had been used, asking them to state when each job should be done and how much instructional time should be allotted. These questionnaires were also distributed to fifteen other teachers in summer school at the University of Tennessee and twenty teachers attending a field course at Hixson high school. All people included in the study were asked to comment on job breakdowns and add any jobs needed.

Twenty-five teachers returned questionnaires. These teachers were from the following East Tennessee counties: Anderson, Blount, Bradley, Carter, Claiborne, Grainger, Greene, Hamblen, Hamilton, Hawkins, Jefferson, Knox, Loudon, Marion, McMinn, Monroe, Morgan, Rhea, Sequatchie, Sevier, Sullivan,

and Washington.

The investigator summarized the data obtained and then applied the findings to his local situation.

This application was made by planning a course calendar for the sophomore agriculture class at Everett high school. Methods of procedure recommended in this study were used and conclusions and recommendations were made.

Organization of the Study

Chapter I introduces the problem and sets forth the procedure followed in solving it.

Chapter II presents the enterprises found in East Tennessee and the job breakdown of those enterprises which are most important.

Chapter III presents the hours needed for teaching each job.

Chapter IV presents the month or months that each job should be done in the boy's program. It also suggests the month that the job should be included in the instructional program.

Chapter V presents a summary of findings, an application of findings, and recommendations.

CHAPTER II

ENTERPRISES AND JOB ANALYSIS

General

In determining the major enterprises in East Tennessee the investigator interviewed the district supervisor of vocational agriculture and obtained the course calendars of ten teachers who were considered representative of all areas of East Tennessee. Later a list of final supervised farming reports was obtained.

Job breakdowns made by the investigator were compared with the ten course calendars and revised in interviews with teachers, teacher trainers, and technical agriculture workers.

Presentation of Findings

Table I shows field crop enterprises that were reported in students' farming programs for 1954. It shows that the enterprises of major proportion were as follows: corn, cotton, hay, small grains, pasture, and tobacco.

In Table II it is seen that the major horticulture enterprises were as follows: gardens, Irish potatoes, sweet potatoes, tomatoes, snap beans, and strawberries. A number of students also had orchards and watermelons.

Table III shows the number and scope of farm animal and poultry enterprises. Bees are also included in this table. It is seen that the major livestock enterprises were as follows:

TABLE I

NUMBER AND SCOPE OF FIELD CROP ENTERPRISES REPORTED BY
EAST TENNESSEE VOCATIONAL AGRICULTURE STUDENTS
FOR THE YEAR ENDING DECEMBER 31, 1954

Enterprise	Number	Unit	Scope
Corn for grain	1894	Acres	5801.5
Corn for silage	7	"	7.0
Cotton	45	"	86.9
Alfalfa hay	94	"	598.7
Lespedeza hay	158	"	1029.5
Mixed hays	292	"	1874.3
Soybean hay	15	"	90.0
Soybean for seed	2	"	5.0
Small grains ^a	202	"	1348.2
Pastures	56	"	495.2
Burley tobacco	1697	"	1132.9
Crimson clover seed	3	"	25.0
Grain sorghums	19	"	20.1
Sericea seed	1	"	20.0

^aIncludes Wheat, Barley and Oats

TABLE II

NUMBER AND SCOPE OF HORTICULTURE ENTERPRISES REPORTED BY
EAST TENNESSEE VOCATIONAL AGRICULTURE STUDENTS
FOR THE YEAR ENDING DECEMBER 31, 1954

Enterprise	Number	Unit	Scope
Home garden	592	Acres	325.7
Market garden	124	"	172.4
Irish potatoes	625	"	262.8
Sweet potatoes	132	"	104.6
Tomatoes	116	"	55.3
Snap beans	133	"	144.6
Corn for roasting ears	15	"	10.2
Pepper	15	"	15.0
Okra	5	"	5.3
Peanuts	9	"	7.6
Cantaloupes	5	"	6.0
Watermelons	38	"	31.6
Strawberries	186	"	107.6
Orchard	19	"	31.6

TABLE III

NUMBER AND SCOPE OF FARM ANIMAL AND POULTRY ENTERPRISES
 REPORTED BY VOCATIONAL AGRICULTURE STUDENTS
 FOR THE YEAR ENDING DECEMBER 31, 1954

Enterprise	Number	Unit	Scope
Beef cattle breeders	359	Head	818
Beef cattle feeders	636	"	1359
Dairy cattle for milk	771	"	2084
Dairy cattle young stock	430	"	805
Swine breeders	623	"	776
Swine feeders	1153	"	2345
Veal calves	10	"	21
Horses	3	"	3
Poultry for broilers	265	Birds	215,713
Poultry for eggs	334	"	13,764
Capons	1	"	10
Turkeys	3	"	45
Rabbits	13	Head	154
Bees	53	Hives	258
Sheep	20	Head	624
Milk goats	6	"	40

beef cattle, dairy cattle, swine, and sheep. Poultry includes egg production, broilers, and an insignificant number of capons and turkeys.

The investigator selected the nineteen enterprises that seemed to be the most important and broke them down into jobs. These enterprises are as follows: beef cattle, dairying, sheep, swine, poultry, corn, cotton, hay, pastures, small grains, soybeans, tobacco, gardens, Irish potatoes, tomatoes, small fruits, strawberries, tree fruits, and forestry. Further study indicates that perhaps sweet potatoes, snap beans, and bees should have been included.

The job analysis set forth in the remaining pages of this chapter is a summary of the comments made by technical agricultural workers, teacher trainers, and teachers. It sets forth, in the opinion of the investigator and others, the best job breakdown now available to meet East Tennessee conditions.

Job analysis of the enterprises was as follows:

A. Beef

1. Determining possibilities
2. Selecting and procuring breeding stock
3. Providing housing and equipment
4. Breeding heifers and cows
5. Caring for cow and calf at calving time
6. Selecting and procuring feeder stock
7. Feeding

8. Controlling diseases
9. Controlling parasites
10. Butchering
11. Marketing and grading
12. Dehorning and castrating
13. Fitting and showing
14. Keeping and using records.

B. Dairy

1. Determining possibilities
2. Selecting and procuring cows
3. Providing housing and equipment
4. Breeding heifers and cows
5. Caring for cow and calf at calving
6. Feeding for milk production
7. Milking and caring for milk
8. Controlling diseases
9. Controlling parasites
10. Marketing dairy products
11. Selecting and managing bulls
12. Raising dairy calves
13. Marketing surplus animals
14. Fitting and showing animals
15. Keeping and using records

The original jobs of testing milk and keeping production records were included in the job of keeping and

using records. Using artificial insemination was included in the breeding job. All jobs with young stock were included in raising dairy calves.

C. Sheep

1. Determining possibilities
2. Selecting and procuring breeding stock
3. Providing housing and equipment
4. Feeding
5. Flushing and breeding
6. Caring for ewes during gestation
7. Caring for ewes and lambs during lambing
8. Docking and castrating
9. Controlling diseases
10. Controlling parasites
11. Shearing
12. Marketing sheep, lambs, and wool
13. Butchering
14. Fitting and showing
15. Keeping and using records

D. Swine

1. Determining possibilities
2. Selecting and procuring breeding stock
3. Providing houses and equipment
4. Breeding sows and gilts
5. Feeding and caring for pregnant sows

6. Caring for the sow and litter
7. Controlling diseases
8. Controlling parasites
9. Castrating
10. Selecting feeder hogs
11. Feeding for meat production
12. Marketing
13. Butchering and preserving pork
14. Fitting and showing animals
15. Judging market hogs
16. Registering purebred stock
17. Keeping and using records

E. Poultry

1. Determining possibilities
2. Choosing the breed and procuring chicks
3. Brooding and housing growing stock
4. Producing and marketing broilers
5. Controlling diseases
6. Controlling parasites
7. Raising pullets
8. Housing and managing the laying flock
9. Feeding for egg production
10. Marketing eggs
11. Culling hens and pullets
12. Producing capons, turkeys, etc.

13. Exhibiting poultry and eggs

14. Keeping and using records

F. Corn

1. Determining possibilities

2. Locating the field site

3. Selecting the variety and procuring seed

4. Preparing the seedbed

5. Fertilizing

6. Planting

7. Controlling weeds

8. Controlling diseases and pests

9. Harvesting

10. Storing

11. Marketing

12. Keeping and using records

G. Cotton

1. Determining possibilities

2. Locating the field site

3. Selecting the variety and procuring seed

4. Preparing the seedbed

5. Fertilizing

6. Planting

7. Controlling weeds

8. Controlling insects and diseases

9. Defoliating

10. Harvesting
11. Ginning
12. Marketing
13. Keeping and using records

H. Hay

1. Determining possibilities
2. Locating the field site
3. Selecting the variety and procuring seed
4. Preparing the seedbed
5. Fertilizing
6. Inoculating seed
7. Seeding
8. Controlling diseases and insects
9. Maintaining the crops
10. Harvesting
11. Storing
12. Marketing
13. Keeping and using records

I. Pastures

1. Determining pasture needs
2. Locating the field site
3. Selecting the plants and procuring seed
4. Preparing the seedbed
5. Fertilizing and liming
6. Seeding
7. Managing grazing

8. Controlling weeds and excess growth
9. Controlling diseases and insects
10. Irrigating
11. Keeping and using records

J. Small Grains

1. Determining possibilities
2. Locating the field site
3. Selecting the variety and procuring seed
4. Preparing the seedbed
5. Fertilizing
6. Seeding
7. Harvesting
8. Storing
9. Controlling insects and diseases
10. Marketing
11. Producing certified seed
12. Keeping and using records

K. Soybeans

1. Determining possibilities
2. Locating the field site
3. Selecting the variety and procuring seed
4. Preparing the seedbed
5. Treating and inoculating seed
6. Fertilizing
7. Seeding

8. Controlling weeds
9. Harvesting
10. Storing
11. Marketing
12. Keeping and using records

L. Tobacco

1. Determining possibilities
2. Locating the field site
3. Selecting the variety and procuring seed
4. Preparing the plantbed
5. Managing the plantbed
6. Preparing the field site
7. Fertilizing the crop
8. Transplanting or setting the crop
9. Cultivating the crop
10. Controlling field diseases and insects
11. Topping the plants
12. Suckering the plants
13. Harvesting the crop
14. Housing and curing the crop
15. Stripping, grading and bulking
16. Marketing the crop
17. Handling the soil between crops
18. Keeping and using records

M. Gardens

1. Determining kind and amount of vegetables needed
2. Planning the garden to meet needs
3. Selecting the field site
4. Selecting varieties
5. Constructing, planting, and managing cold frames and hot beds
6. Selecting and procuring seeds and plants
7. Preparing the seedbed
8. Fertilizing, manuring and using cover crops
9. Planting seed and setting plants
10. Controlling weeds
11. Controlling diseases and insects
12. Harvesting
13. Exhibiting
14. Preserving and storing
15. Marketing
16. Keeping and using records

N. Irish Potatoes

1. Determining possibilities
2. Locating the field site
3. Selecting variety and procuring seed
4. Preparing the seedbed
5. Fertilizing
6. Planting
7. Controlling weeds

8. Controlling diseases and insects
9. Harvesting
10. Storing
11. Grading and marketing
12. Keeping and using records

O. Tomatoes

1. Determining possibilities
2. Selecting the field site
3. Selecting varieties and procuring seed or plants
4. Raising plants
5. Preparing the seedbed
6. Fertilizing
7. Transplanting
8. Controlling weeds
9. Controlling diseases and insects
10. Harvesting
11. Storing
12. Marketing
13. Keeping and using records

P. Small Fruits

1. Determining possibilities
2. Selecting the field site
3. Choosing varieties and procuring plants
4. Preparing the land for planting
5. Setting out plants

6. Fertilizing
7. Controlling weeds
8. Selecting systems of training
9. Pruning
10. Controlling diseases and insects
11. Harvesting and marketing
12. Mulching
13. Propagating plants
14. Keeping and using records

Q. Strawberries

1. Determining possibilities
2. Selecting the field site
3. Choosing the variety and procuring plants
4. Preparing the land for planting
5. Fertilizing
6. Setting the plants
7. Controlling weeds
8. Thinning
9. Mulching
10. Harvesting
11. Marketing
12. Renovating
13. Controlling diseases and insects
14. Producing certified plants
15. Keeping and using records

R. Tree Fruits

1. Determining possibilities
2. Selecting the site
3. Selecting varieties and procuring trees
4. Preparing land for planting
5. Setting out plants
6. Fertilizing
7. Cultivating
8. Selecting systems of training
9. Pruning
10. Controlling diseases and insects
11. Thinning
12. Picking fruit
13. Grading and packing
14. Storing
15. Marketing
16. Propagating plants
17. Keeping and using records

S. Forestry

1. Determining possibilities
2. Selecting land for tree planting
3. Studying tree growth
4. Selecting trees for economic importance
5. Managing the farm woodlot
6. Renewing the forest

7. Protecting the forest
8. Measuring the forest
9. Harvesting the timber crop
10. Marketing timber
11. Preserving and using timber products
12. Keeping and using records

It will be noted that keeping and using records was added to all enterprises. Normally, record keeping is taught as a separate unit in the vocational agriculture course but it was pointed out by technical people that most enterprises need special types of records. This is especially true of livestock enterprises where breeding animals and milk cows should be culled on the basis of individual production.

The word cultivating was changed to controlling weeds because much of the weed control is now being done by chemical means.

Judging beef cattle was included in the jobs of selecting and grading because it was felt that major emphasis needed to be placed on the selection of animals to meet the individual's needs.

Feeding swine was divided into special areas of feeding sows and feeding for meat production to make each job better fit a teaching unit.

The job of producing capons, turkeys, and other birds was added to the poultry enterprise to give boys a look at

other possibilities in that field.

The job of preserving and using timber was added to the forestry enterprise because it seemed to fit into the idea of timber harvesting, thinning, and marketing.

These jobs are not necessarily the only ones possible, but represent the combined opinions of the people interviewed and surveyed in this study.

CHAPTER III

INSTRUCTIONAL HOURS

Instructional hours for teaching jobs and enterprises vary greatly from one school to another. Some teachers place greater emphasis on certain jobs than others do. Some enterprises are not common to all sections of East Tennessee. An example of this is cotton which is confined mostly to the southern portion of the district.

Several teachers included in this study teach only a portion of the jobs listed. A few teachers combine some of the jobs and teach them as one unit. In all cases, however, they divided the time and reported it as separate units.

In Table IV it is seen that selecting and feeding beef cattle required the most time to teach, while record keeping required the least time. Twenty teachers taught all of the jobs listed for beef cattle.

Table V shows that selecting cows and feeding for milk production require the largest amount of time in the dairy enterprise. The least amount of time was spent in teaching the marketing of surplus animals. Seven of the twenty-two teachers did not teach this job.

Fifteen teachers included sheep in their teaching program. Only eight of these taught all of the sheep jobs. Selecting and feeding are shown in Table VI as the jobs

TABLE IV

INSTRUCTIONAL HOURS USED IN TEACHING
THE BEEF CATTLE ENTERPRISE

Jobs	Number of Cases	Hours		
		Central Tendency Mean	Median	Range
Determining possibilities	22	2.0	2	1-4
Selecting and procuring breeding stock	22	2.7	2	1-8
Providing housing and equipment	22	1.7	2	1-4
Breeding heifers and cows	22	1.9	2	1-6
Caring for cow and calf at calving time	22	1.9	2	1-4
Selecting and procuring feeder stock	22	1.8	2	1-4
Feeding	22	3.7	3	1-10
Controlling diseases	22	2.2	2	1-5
Controlling parasites	22	1.7	2	1-3
Butchering	20	1.8	2	1-3
Marketing and grading	22	2.0	2	1-4
Dehorning and castrating	22	1.5	1	1-4
Fitting and showing	21	2.2	2	1-4
Keeping and using records	21	1.2	1	1-3

TABLE V

INSTRUCTIONAL HOURS USED IN TEACHING
THE DAIRY CATTLE ENTERPRISE

Jobs	Number of Cases	Hours		
		Central Mean	Tendency Median	Range
Determining possibilities	22	2.1	2	1-4
Selecting and procuring cows	22	4.4	4	2-8
Providing housing and equipment	21	2.0	2	1-4
Breeding heifers and cows	18	1.8	2	1-4
Caring for cow and calf at calving time	21	2.1	2	1-4
Feeding for milk production	21	4.2	4	1-10
Milking and caring for milk	21	3.1	1	2-6
Controlling diseases	21	1.4	2	1-4
Controlling parasites	21	1.2	1	1-3
Marketing dairy products	19	1.6	1.5	1-3
Selecting and managing bulls	18	1.3	1	1-2
Raising dairy calves	21	2.7	2.5	1-5
Marketing surplus animals	15	1.1	1	1-2
Fitting and showing animals	20	2.1	2	1-4
Keeping and using records	19	1.7	1	1-4

TABLE IV

INSTRUCTIONAL HOURS USED IN TEACHING
THE SHEEP ENTERPRISE

Jobs	Number of Cases	Hours		
		Mean	Median	Range
Determining possibilities	15	1.9	2	1-5
Selecting and procuring breeding stock	13	3.1	3	1-5
Providing housing and equipment	12	1.8	1	1-4
Feeding	13	3.1	3	1-10
Flushing and breeding	12	1.5	1	1-3
Caring for ewes during gestation	12	1.3	1	1-3
Caring for ewes and lambs during lambing	11	2.1	2	1-3
Docking and castrating	12	1.5	2	1-2
Controlling diseases	12	1.5	1	1-3
Controlling parasites	12	1.5	1	1-2
Shearing	11	1.7	2	1-3
Marketing sheep, lambs, and wool	12	1.8	2	1-3
Butchering	8	1.7	1	1-3
Fitting and showing	10	1.7	1	1-4
Keeping and using records	10	1.1	1	1-2

requiring the greatest number instructional hours. Technical people stress the importance of parasite control in producing sheep, but it was allowed only 1.5 hours by teachers.

As seen in Table VII, 95 per cent of the teachers included all of the swine jobs. This is the highest percentage reported for any livestock enterprise. There was not as much variation in the average time used for teaching swine jobs as there was in other animal enterprises. The median time used was one hour for record keeping and two hours for caring for the sow and litter.

Table VIII shows that teachers used from one to ten hours in teaching boys to feed hens for egg production. More than half of the teachers used two hours with the average time being 3.1 hours. Six of the teachers did not include capons and turkeys in their teaching program.

From one to six hours were spent in teaching the jobs in the corn enterprise. The highest average was 2.2 hours for selecting the variety and procuring seed. As seen in Table IX, the median time per job was only one hour for teaching eight of the corn jobs.

Only eight teachers included cotton in their course calendars. Table X shows that the time spent in teaching jobs in this enterprise ranged from one to three hours. Nine of the jobs were allotted only one hour per job by more than half of the teachers.

TABLE VII

INSTRUCTIONAL HOURS USED IN TEACHING
THE SWINE ENTERPRISE

Jobs	Number of Cases	Hours		
		Central Mean	Tendency Median	Range
Determining possibilities	22	2.2	2	1-5
Selecting and procuring breeding stock	22	2.5	2	1-4
Providing houses and equipment	22	2.0	2	1-4
Breeding sows and gilts	22	1.9	2	1-4
Feeding and caring for pregnant sows	22	2.0	2	1-5
Caring for the sow and litter	22	2.6	2	1-5
Controlling diseases	22	2.1	2	1-5
Controlling parasites	22	1.4	1	1-3
Castrating	22	1.5	1	1-4
Selecting feeder hogs	22	2.1	2	1-4
Feeding for meat production	22	2.2	2	1-5
Marketing	22	1.6	2	1-4
Butchering and preserving pork	22	2.6	2	1-6
Fitting and showing animals	22	1.9	2	1-4
Judging market hogs	21	2.1	2	1-5
Registering purebred stock	20	1.5	1	1-4
Keeping and using records	20	1.3	1	1-3

TABLE VIII

INSTRUCTIONAL HOURS USED IN TEACHING
THE POULTRY ENTERPRISE

Jobs	Number of Cases	Hours		
		Central Mean	Tendency Median	Range
Determining possibilities	22	2.1	2	1-5
Choosing the breed and procuring chicks	22	2.5	2	1-8
Brooding and housing growing stock	22	2.5	2	1-6
Producing and marketing broilers	22	2.5	2	1-7
Controlling diseases	22	2.0	2	1-5
Controlling parasites	22	1.5	1	1-3
Raising pullets	20	1.5	1	1-3
Housing and managing the laying flock	22	2.5	2.5	1-6
Feeding for egg production	22	3.1	2	1-10
Marketing eggs	21	1.5	1	1-4
Culling hens and pullets	22	2.2	2	1-5
Producing capons, turkeys, and etc.	16	1.3	1	1-4
Exhibiting poultry and eggs	16	1.5	1	1-4
Keeping and using records	21	1.5	1	1-3

TABLE IX

INSTRUCTIONAL HOURS USED IN TEACHING
THE CORN ENTERPRISE

Jobs	Number of Cases	Hours		
		Central Mean	Tendency Median	Range
Determining possibilities	22	1.7	2	1-4
Locating the field site	22	1.5	1	1-4
Selecting the variety and procuring seed	22	2.2	2	1-6
Preparing the seedbed	22	1.7	2	1-4
Fertilizing	22	2.0	2	1-4
Planting	22	1.2	1	1-2
Controlling weeds	22	1.3	1	1-2
Controlling diseases and pests	22	1.5	1	1-3
Harvesting	22	1.4	1	1-3
Storing	21	1.4	1	1-4
Marketing	20	1.2	1	1-2
Handling the soil between crops	20	1.7	2	1-4
Keeping and using records	20	1.1	1	1-2

TABLE X

INSTRUCTIONAL HOURS USED IN TEACHING
THE COTTON ENTERPRISE

Jobs	Number of Cases	Hours		
		Mean	Median	Range
Determining possibilities	8	1.7	1	1-3
Locating the field site	8	1.1	1	1-2
Selecting the variety and procuring seed	8	1.6	2	1-2
Preparing the seedbed	8	1.3	1	1-2
Fertilizing	8	1.5	1	1-2
Planting	8	1.1	1	1-2
Controlling weeds	8	1.4	1	1-2
Controlling insects and diseases	8	2.0	2	1-3
Defoliating	8	1.1	1	1-2
Harvesting	8	1.7	2	1-3
Ginning	8	1.3	1	1-2
Marketing	8	1.6	2	1-2
Keeping and using records	8	1.1	1	1-2

All types of hay were included as one enterprise in this study. Several people have commented that hay should have been broken down into at least three types, namely: alfalfa, lespedeza, and mixed hays. Teaching time for jobs in this enterprise ranged from one hour for teaching the inoculation of seed to 1.9 hours for teaching how to select the variety and procure seed. Table XI shows the instructional hours used in teaching the hay enterprise.

Determining the pasture needs required more teaching time than any other pasture job, as shown in Table XII. One teacher reported that he used fertilizing and liming pastures to teach the basic information about soil acidity and plant food reactions.

Table XIII shows that the median hours used was only one hour for teaching each job in the small grain enterprise except selecting the variety. Wheat, oats, barley, and rye were included under one enterprise heading because the jobs would be very similar in each of them.

In Table XIV it is seen that very little time was spent in teaching the jobs in the soybean enterprise. Only nine teachers taught all of the jobs and more than half of them used only one hour per job. The range was from one to two hours for each soybean job.

Nineteen teachers used all of the tobacco jobs listed, as shown in Table XV. The median instructional hours used

TABLE XI

INSTRUCTIONAL HOURS USED IN TEACHING
THE HAY ENTERPRISE

Jobs	Number of Cases	Hours		
		Central Mean	Tendency Median	Range
Determining possibilities	22	1.9	2	1-6
Locating the field site	22	1.5	1	1-4
Selecting the variety and procuring seed	22	1.9	2	1-4
Preparing the seedbed	22	1.5	1	1-4
Fertilizing	22	1.6	1	1-4
Inoculating seed	22	1.0	1	1-2
Seeding	22	1.4	1	1-2
Controlling diseases and insects	18	1.5	1	1-4
Maintaining the crops	19	1.7	2	1-4
Harvesting	22	1.7	2	1-4
Storing	18	1.7	1	1-6
Marketing	16	1.4	1	1-3
Keeping and using records	18	1.4	1	1-2

TABLE XII

INSTRUCTIONAL HOURS USED IN TEACHING
THE PASTURE ENTERPRISE

Jobs	Number of Cases	Hours		
		Central Mean	Tendency Median	Range
Determining pasture needs	22	2.7	2.5	1-8
Locating the field site	22	1.5	1	1-4
Selecting the plants and procuring seed	22	2.4	2	1-5
Preparing the seedbed	22	1.8	1.5	1-4
Fertilizing and liming	22	2.2	2	1-4
Seeding	22	1.3	1	1-2
Managing grazing	22	2.2	2	1-5
Controlling weeds and excess growth	22	1.8	1	1-4
Controlling diseases and insects	20	1.5	1	1-4
Irrigating	12	1.3	1	1-2
Keeping and using records	12	1.1	1	1-2

TABLE XIII

INSTRUCTIONAL HOURS USED IN TEACHING
THE SMALL GRAIN ENTERPRISE

Jobs	Number of Cases	Hours		
		Central Mean	Tendency Median	Range
Determining possibilities	22	1.9	1.5	1-6
Locating the field site	22	1.2	1	1-2
Selecting the variety and procuring seed	22	1.9	2	1-4
Preparing the seedbed	22	1.4	1	1-4
Fertilizing	22	1.5	1	1-3
Seeding	22	1.2	1	1-2
Harvesting	22	1.6	1.5	1-3
Storing	22	1.4	1	1-3
Controlling insects and diseases	21	1.6	1	1-3
Marketing	19	1.4	1	1-3
Producing certified seed	14	1.3	1	1-2
Keeping and using records	12	1.2	1	1-2

TABLE XIV

INSTRUCTIONAL HOURS USED IN TEACHING
THE SOYBEAN ENTERPRISE

Jobs	Number of Cases	Hours		
		Central Mean	Tendency Median	Range
Determining possibilities	12	1.4	1	1-2
Locating the field site	10	1.2	1	1-2
Selecting the variety and procuring seed	11	1.5	1	1-2
Preparing the seedbed	11	1.4	1	1-2
Treating and inoculating seed	11	1.3	1	1-2
Fertilizing	11	1.3	1	1-2
Seeding	11	1.5	1	1-2
Controlling weeds	9	1.3	1	1-2
Harvesting	11	1.5	1	1-2
Storing	10	1.3	1	1-2
Marketing	10	1.3	1	1-2
Keeping and using records	9	1.1	1	1-2

TABLE XV

INSTRUCTIONAL HOURS USED IN TEACHING
THE TOBACCO ENTERPRISE

Jobs	Number of Cases	Hours		
		Central Tendency		Range
		Mean	Median	
Determining possibilities	19	1.8	2	1-3
Locating the field site	19	1.4	1	1-3
Selecting the variety and procuring seed	19	1.5	1	1-3
Preparing the plantbed	19	2.0	2	1-4
Managing the plantbed	19	1.8	1	1-4
Preparing the field site	19	1.4	1	1-4
Fertilizing the crop	19	2.1	2	1-4
Transplanting	19	1.6	1	1-3
Controlling weeds	19	1.5	1	1-3
Controlling field diseases and insects	19	2.3	2	1-6
Topping the plants	19	1.4	1	1-3
Suckering the plants	19	1.2	1	1-3
Harvesting	19	1.7	2	1-4
Housing and curing	19	2.2	2	1-5
Stripping, grading, bulking	19	3.0	3	1-6
Marketing	19	1.7	1	1-4
Handling the soil between crops	19	1.5	1	1-4
Keeping and using records	19	1.2	1	1-3

was one hour for suckering the plants and three hours for stripping, grading, and bulking the crop. Six of the twenty-five teachers included in this study did not teach the tobacco enterprise.

More total time was spent in teaching the garden enterprise than in teaching any other enterprise included in this study. The median time used was two hours each for teaching nine of the garden jobs. The range of time used per job was one to six hours as shown in Table XVI.

Table XVII shows that the mean and median hours used for teaching controlling diseases and insects of Irish potatoes was two. One hour was the median point for all other jobs in the Irish potato enterprise.

Several teachers reported that they taught tomato production in connection with the garden enterprise. It is seen in Table XVIII that sixteen teachers taught tomatoes as a separate enterprise. No teacher spent more than three hours teaching any job in this enterprise.

The small fruit enterprise as used in this study would include mostly grapes and brambles. This enterprise was reported in only one boy's supervised farming program in 1954. Fourteen teachers, as shown in Table XIX, taught jobs concerned with small fruit. Controlling diseases and insects required the highest average time of any job in this enterprise.

Table XX shows that the time used for teaching jobs in

TABLE XVI

INSTRUCTIONAL HOURS USED IN TEACHING
THE GARDEN ENTERPRISE

Jobs	Number of Cases	Hours		
		Central Mean	Tendency Median	Range
Determining kind and amount of vegetables needed	22	2.3	2	1-4
Planning the garden to meet needs	22	2.3	2	1-4
Selecting the field site	21	1.2	1	1-2
Selecting varieties	21	2.5	2	1-6
Constructing, planting, managing cold frames and hot beds	21	2.2	2	1-4
Selecting and procuring seeds and plants	21	1.9	2	1-4
Preparing the seedbed	21	1.4	1	1-4
Fertilizing and manuring	22	1.9	2	1-3
Planting seed, setting plants	20	2.4	2	1-6
Controlling weeds	21	1.4	1	1-3
Controlling diseases and insects	22	2.5	2	1-6
Harvesting	21	2.0	2	1-4
Exhibiting	16	1.3	1	1-2
Preserving and storing	17	1.7	1	1-6
Marketing	17	1.3	1	1-6
Keeping and using records	12	1.4	1	1-4

TABLE XVII

INSTRUCTIONAL HOURS USED IN TEACHING
THE IRISH POTATO ENTERPRISE

Jobs	Number of Cases	Hours		
		Mean	Median	Range
Determining possibilities	20	1.7	1	1-4
Locating the field site	20	1.2	1	1-2
Selecting variety and procuring seed	20	1.5	1	1-3
Preparing the seedbed	20	1.4	1	1-3
Fertilizing	20	1.5	1	1-2
Planting	20	1.2	1	1-2
Controlling weeds	20	1.2	1	1-3
Controlling diseases and insects	20	2.0	2	1-6
Harvesting	20	1.4	1	1-4
Storing	20	1.2	1	1-4
Grading and marketing	20	1.4	1	1-4
Keeping and using records	12	1.2	1	1-2

TABLE XVIII

INSTRUCTIONAL HOURS USED IN TEACHING
THE TOMATO ENTERPRISE

Jobs	Number of Cases	Hours		
		Central Mean	Tendency Median	Range
Determining possibilities	15	1.7	2	1-3
Selecting the field site	15	1.1	1	1-2
Selecting varieties and procuring seed or plants	16	1.4	1	1-3
Raising plants	15	1.5	2	1-3
Preparing the seedbed	15	1.2	1	1-2
Fertilizing	16	1.4	1	1-3
Transplanting	16	1.2	1	1-2
Controlling weeds	16	1.2	1	1-2
Controlling diseases and insects	16	1.8	1	1-3
Harvesting	16	1.2	1	1-2
Storing	9	1.0	1	1
Marketing	15	1.1	1	1-2
Keeping and using records	9	1.1	1	1-2

TABLE XIX

INSTRUCTIONAL HOURS USED IN TEACHING
THE SMALL FRUIT ENTERPRISE

Jobs	Number of Cases	Hours		
		Mean	Median	Range
Determining possibilities	14	1.6	1	1-3
Selecting the field site	12	1.2	1	1-2
Choosing varieties and procuring plants	14	2.1	2	1-3
Preparing the land for planting	13	1.3	1	1-2
Setting plants	13	1.5	1	1-3
Fertilizing	13	1.4	1	1-3
Controlling weeds	12	1.5	1	1-3
Selecting systems of training	13	1.5	2	1-2
Pruning	12	2.2	2	1-3
Controlling diseases and insects	13	2.6	2	1-5
Harvesting and marketing	12	2.0	2	1-4
Mulching	13	1.3	1	1-2
Propagating plants	12	1.6	2	1-2
Keeping and using records	8	1.1	1	1-2

the strawberry enterprise ranged from 1.1 hours to 1.9 hours. As in small fruits, teaching the job of controlling diseases and insects required the most time.

In teaching the tree fruit enterprise, teachers used an average of 3.1 hours for teaching the job of controlling diseases and insects. The next highest average was 2.6 hours used for teaching pruning. In Table XXI it is seen that more teachers taught training and pruning than any other jobs connected with fruit trees.

Table XXII shows that teachers used an average of 2.3 hours in teaching the job of managing the farm woodlot. One teacher included protecting the forest as the only forestry job in his teaching program. Measuring the forest and harvesting the timber crop required 2.1 instructional hours each.

Summary

The following things are shown in this chapter:

1. The median time used was one or two hours for teaching most of the jobs included in this study.
2. Teachers used a median of three or four hours for most of the jobs concerned with selecting and feeding animals.
3. In most instances the mean was higher than the median. In a few cases, however, the reverse was true.
4. The mean and median were the same in only a very few instances.

TABLE XX

INSTRUCTIONAL HOURS USED IN TEACHING
THE STRAWBERRY ENTERPRISE

Jobs	Number of Cases	Hours		
		Mean	Median	Range
Determining possibilities	19	1.7	2	1-3
Selecting the field site	18	1.3	1	1-2
Choosing the variety and procuring plants	19	1.8	2	1-4
Preparing the land for planting	19	1.3	1	1-2
Fertilizing	19	1.4	1	1-3
Setting the plants	19	1.1	1	1-2
Controlling weeds	19	1.4	1	1-3
Thinning	17	1.1	1	1-3
Mulching	18	1.2	1	1-2
Harvesting	19	1.5	1	1-4
Marketing	18	1.8	1.5	1-4
Renovating	18	1.6	1	1-3
Controlling diseases and insects	18	1.9	2	1-4
Producing certified plants	13	1.4	1	1-2
Keeping and using records	12	1.1	1	1-2

TABLE XXI

INSTRUCTIONAL HOURS USED IN TEACHING
THE TREE FRUIT ENTERPRISE

Jobs	Number of Cases	Hours		
		Central Mean	Tendency Median	Range
Determining possibilities	15	1.7	1	1-3
Selecting the site	16	1.4	1	1-2
Selecting varieties and procuring trees	16	2.3	2	1-4
Preparing land for planting	16	1.5	1	1-4
Setting out plants	15	1.5	1	1-2
Fertilizing	16	1.6	1.5	1-3
Cultivating	15	1.5	1	1-2
Selecting systems of training	17	2.0	2	1-4
Pruning	17	2.6	3	1-4
Controlling diseases and insects	16	3.1	3	1-5
Thinning	14	1.3	1	1-3
Picking fruit	13	1.6	2	1-2
Grading and packing	14	2.0	2	1-3
Storing	12	1.8	1.5	1-4
Marketing	13	1.6	1	1-3
Propagating plants	13	1.1	1	1-2
Keeping and using records	12	1.2	1	1-2

TABLE XXII

INSTRUCTIONAL HOURS USED IN TEACHING
THE FORESTRY ENTERPRISE

Jobs	Number of Cases	Hours		
		Central Mean	Tendency Median	Range
Determining possibilities	18	1.7	2	1-2
Selecting land for tree planting	18	1.5	1.5	1-2
Studying tree growth	16	1.8	2	1-4
Selecting for economic importance	16	1.7	2	1-3
Managing the farm woodlot	18	2.3	2	1-5
Renewing the forest	18	1.6	1.5	1-4
Protecting the forest	19	1.8	2	1-5
Measuring the forest	15	2.1	2	1-5
Harvesting the timber crop	17	2.1	2	1-5
Marketing timber	16	1.8	2	1-5
Preserving and using timber products	10	1.8	2	1-6
Keeping and using records	10	1.1	1	1-2

5. The least time used for any job was one hour.
6. The highest number of hours used for teaching a single job was ten.
7. The median time was usually higher for teaching jobs in the farm animal enterprises than for teaching jobs in the crop enterprises.
8. The most total time was used for teaching the garden enterprise.

CHAPTER IV

MONTHS TO DO THE JOBS

Teachers of vocational agriculture should have each student make out an enterprise job calendar for each enterprise in his farming program. This job calendar should show the month or months each job is usually done and when the student intends to study the jobs listed.

The teachers included in this study were asked to check the month or months that each job should be done in the students farming program. Some teachers checked all twelve months for jobs that are continuous. Other teachers checked only one month for these same jobs. It is believed that a few teachers checked the months that the jobs were included in their instructional calendars. A definite pattern, however, is seen to exist in the months reported for most of the jobs.

Most jobs in this study showed a seasonal pattern.

The seasons used in this study are as follows:

1. Spring: March, April, and May
2. Summer: June, July, and August
3. Fall: September, October, and November
4. Winter: December, January, and February

Table XXIII shows the months to do jobs in the beef cattle enterprise. Although feeding is a continuous job, the largest number of teachers checked it in October and November

TABLE XXIII

MONTHS TO DO JOBS IN THE BEEF ENTERPRISE AS INDICATED BY
TEACHERS OF VOCATIONAL AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Determining possibilities	22	1	1	8	6	5	1		1		1		
Selecting and procuring breeding stock	22	1		7	8	3	1			1	2		
Providing housing and equipment	22		1	4	4	7	5					1	
Breeding heifers and cows	22			1	1	8	2	2			2	4	2
Caring for cow and calf at calving time	22		1	3	1	3	3	3	9	1	1		
Selecting and procuring feeder stock	22	2	3	1	1	1	2	2	2	3	2	1	1
Feeding	22	2	2	4	11	8	4	4	2	2	2	2	2
Controlling diseases	22	1	1	2	3	7	5	4	7	1	2	1	2
Controlling parasites	22	1	1	2	4	5	7	2	2	4	2	1	1
Butchering	20	1	1	1	5	7	6	2	1	3	1	1	1
Marketing and grading	22		3	7	1	8				3	2		1
Dehorning and castrating	22					2	1		6	6	6	1	
Fitting and showing	21		5	9	1	1			1	2	4	1	
Keeping and using records	19	1	1	1	4	6	5	1	1	2	1	1	1

when cattle would usually go on winter feed. Several of the beef cattle jobs were checked in all twelve months.

Many of the dairy jobs were found to be continuous throughout the year as shown in Table XXIV. It is interesting to note that four teachers did not include breeding in their lists of jobs for the dairy enterprise.

Table XXV shows that caring for ewes and lambs during lambing should be done in December, January, February, and March. This corresponds to the normal lambing time in the sheep enterprise. Only eight people included butchering as one of the jobs a boy should do.

As shown in Table XXVI the first three jobs in the swine enterprise are concentrated in the fall months. The job of judging was checked most in March and April, corresponding with the April judging contest. Selecting feeder hogs was divided between fall and spring.

Exhibiting poultry and eggs should be done in September as shown in Table XXVII. Only 73 per cent of the teachers included exhibiting in their teaching program. All of the jobs connected with raising chicks were concentrated in the late winter and early spring months.

Field crop jobs show a greater concentration in the different seasons of the year than the farm animal jobs did. Table XXVIII shows that the corn production jobs should be done in the spring and summer and that harvesting, storing,

TABLE XXIV

MONTHS TO DO JOBS IN THE DAIRY ENTERPRISE AS
INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Determining possibilities	22		5	6	5	2	1	1	1	1			
Selecting and procuring cows	22			9	5	4		1	1		1	1	
Providing housing and equipment	21			5	7	6	3						
Breeding heifers and cows	18			3	3	3		3	3	1	1		3
Caring for cow and calf at calving time	21			5	3	1	1	4		3	3	1	
Feeding for milk production	21	1	1	1	6	10	1	5	1	1	1	1	1
Milking and caring for milk	21	1	1	2	4	8	3	7		1	1	1	1
Controlling diseases	21	1	1	1	3	4	4		9	4	1	1	1
Controlling parasites	21	1	1	1	3	4	4		9	4	1	1	1
Marketing dairy products	19	1	1	4	4	6	9		2	1	1	1	1
Selecting and managing bull	18	1	1	2	7	5	6	2	2	2	1	1	1
Raising dairy calves	21	1	1	5	3	3	3	5	1	2	5	2	1
Marketing surplus animals	15			3	2	4	4			1	1		
Fitting and showing	20		5	1	1		1	2		5	5		

TABLE XXV

MONTHS TO DO JOBS IN THE SHEEP ENTERPRISE AS
INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Determining possibilities	15			4	1	4	4	1	1				
Selecting and procuring breeding stock	13			4			4		2	4			
Providing housing and equipment	12			1	1	2	2	4	2				
Feeding	13			1	1	4	3	2	3				
Flushing and breeding	12		2	1		2	1	1	1	1	1	1	
Caring for ewes during gestation	12				2	4	4	2					
Caring for ewes and lambs during lambing	11			1	1		2	3	2	2			
Docking and castrating	12				1	1	1	2	2	4	1		
Controlling diseases	12	1	1	2	1	2	2	2	1	5	2	1	1
Controlling parasites	12	1	1	2	1	2	1	2	1	4	3	1	1
Shearing	11							1	1	3	3	2	1
Marketing sheep, lambs, and wool	12						1			2	6	2	1
Butchering	8			1	1	1	1	2			1	1	
Fitting and showing	10			4	1			1		2	1		1

TABLE XXVI

MONTHS TO DO JOBS IN THE SWINE ENTERPRISE AS
INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Determining possibilities	22		1	0	2	5	2			4			
Selecting breeding stock	22			7	4	7	1			2	5		
Providing houses and equipment	22			4	6	6	4			2			
Breeding	22		2	1	1	7	7	3			1	3	
Feeding pregnant sows	22			2	1	1	7	7	3		1	3	
Caring for sow and litter	22	1	2	4	4	3	1	5	3	5	1		
Controlling diseases	22	1	1	3	4	5	4	4	6	2	2	1	1
Controlling parasites	22	1	1	2	5	3	4	4	6	2	2	2	2
Castrating	22		1	1	6	2	2	2	5	3	2	1	
Selecting feeder hogs	22			5	3	1			1	6	4	2	
Feeding for meat	22	2	2	3	8	8	7	3	2	2	4	2	2
Marketing	22	1	1	6	2	1	1	3	4	5	3	1	
Butchering and preserving	22				5	9	3	3	2				
Fitting and showing	21	1	3	6			1	2	2	4	2	1	1
Judging market hogs	21	1	2	4					1	7	5	2	
Registering purebred stock	20		1	3	2	2	1	1	1	5	6	1	

TABLE XXVII

MONTHS TO DO JOBS IN THE POULTRY ENTERPRISE AS
INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Determining possibilities	22		1	6	4	2	7	4	1				
Choosing the breed and procuring chicks	22			2	2	1	1	1	2	2			
Brooding and housing	22			1	1	1	1	10	4	3	2	1	
Producing and marketing broilers	22					2	1	8	5	4	2	1	
Controlling diseases	22			1	1	3	2	10	6	4	1	1	1
Controlling parasites	22			1	1	2	1	9	3	4	2	2	2
Raising pullets	20					1		8	6	5	3	1	
Housing and managing the laying flock	22	1	4	6	2	4	3	3	1	2	2	4	2
Feeding for egg production	22	3	3	4	7	3	5	3	3	4	2	4	2
Marketing eggs	21	2	3	5	6	2	4	4	3	5	4	3	2
Culling hens and pullets	22	2	4	6	2	3	1	3	1	1	2	1	
Producing capons, turkeys, and etc.	16				2	1	1	6	4	2			
Exhibiting poultry and eggs	16		2	9	2			1	1		1		
Keeping and using records	21				6	2	5	7	1				

TABLE XXVIII

MONTHS TO DO JOBS IN THE CORN ENTERPRISE AS
INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers												
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	
Determining possibilities	22			5	2	1	6	5	3					
Locating the field site	22			2	4	2	4	5	7					
Selecting the variety and procuring seed	22			1			1	6	2	8	4			
Preparing the seedbed	22			1		1	1		6	8	7			
Fertilizing	22			1					5	8	9	3	1	
Planting	22			1					1	6	8	6		
Controlling weeds	22			1		1				1	5	12	4	
Controlling diseases and pests	22			1	1				1	3	5	9	2	
Harvesting	22		1	7	9	3	2				1			
Storing	20			5	11	6					1			
Marketing	20		1	2	7	4	2	1			1			
Handling the soil between crops	20		2	5	6	4	1	1	1	2	3		2	
Keeping and using records	20			3	4	4	3		2	2	2			

and marketing should be done in the fall.

It is seen in Table XXIX that there was very close agreement as to when cotton should be planted. All the teachers except two listed this job in April. One teacher listed ginning a month later than harvesting.

All the jobs involved in establishing hay crops are concentrated in both early fall and early spring as shown in Table XXX. This was attributed to the fact that all types of hay were included under one heading. It is common practice in East Tennessee to seed alfalfa and mixed hays in the fall and to seed lespedeza and other annual crops in the spring.

Table XXXI shows that pastures, as in the case of hay, should be established in both spring and fall. East Tennessee farmers normally use a system of long rotational pastures supplemented by winter and summer annual crops.

It is seen in Table XXXII that all of the teachers said small grain should be seeded in the fall. Four teachers also recommended spring seeding. It is interesting to note that three teachers checked harvesting in September. The investigator knows of no small grain which would be harvested as late as September.

Most of the soybean jobs should be done in the spring and summer months as shown in Table XXXIII. There was a considerable amount of disagreement as to when harvesting should be done. This may be due to the fact that it was not clearly

TABLE XXIX

MONTHS TO DO JOBS IN THE COTTON ENTERPRISE AS
INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Determining possibilities	8			1	1	1		3		1	1		
Locating the field site	8				1	1			2	3	1		
Selecting the variety and procuring seed	8				1		1			3	3		
Preparing the seedbed	8						1		1	3	4		
Fertilizing	8						1			1	5	2	1
Planting	8										6	2	
Controlling weeds	8	1								1	2	4	1
Controlling insects	8	1									2	5	
Defoliating	8		2	4	2							2	
Harvesting	8			5	4								
Ginning	8			5	3	1							
Marketing	8			4	3		1						
Keeping and using records	8			2	3					1	2		

TABLE XXX

MONTHS TO DO JOBS IN THE HAY ENTERPRISE AS
INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers												
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	
Determining possibilities	22			7	2	2	2	3	3	1			1	1
Locating the field site	22	6	2	5		3		6	4	2				
Selecting the variety and procuring seed	22	5	1	5		1	1		10	1	1			
Preparing the seedbed	22	4	2	5		1		1	7	4	1	1		
Fertilizing	22	1	5	4		1			7	4	3	1		
Inoculating seed	22	1	4	6		1			5	4	4			
Seeding	22	1	4	6		1			4	6	4	2		
Controlling diseases and insects	18	1		2	1	3	2		2	3	2	2	1	
Maintaining the crops	19	1	1	5	1	2	3	1	5	4	4	4	2	
Harvesting	22	1	3	6	2				3	1	3	10	2	
Storing	18	1	2	6	2				1	1		7	1	
Marketing	16		2	2	3	2	2	2	1	2		3		
Keeping and using records	18		2	2			4	4		2	2	2		

TABLE XXXI

MONTHS TO DO JOBS IN THE PASTURES ENTERPRISE AS
INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Determining pasture needs	22	2	3	6	1	1	4	5	1	2			
Locating the field site	22	3	3	3	1		2	2	2			1	1
Selecting the plants and procuring seed	22	3	3	5	1			1	6	2		2	
Preparing the seedbed	22	3	5	6					5	3	2	1	
Fertilizing and liming	22		6	6					6	2	3	1	1
Seeding	22		4	8				1	3	3	2	1	
Managing grazing	22	2	2	6	3	2	1	2	3	7	7	7	1
Controlling weeds and excess growth	22	3	1					1	1	2	10	8	2
Controlling diseases and insects	20	1	1	1				1	2	2	7	6	2
Irrigating	12	2	2	4								2	2
Keeping and using records	12	1	1	1			2			4	1	1	1

TABLE XXXII

MONTHS TO DO JOBS IN THE SMALL GRAIN ENTERPRISE AS
INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers												
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	
Determining possibilities	22	1	5	11	1	1	3							
Locating the field site	22	4	4	4	1	2	1	2	2				1	1
Selecting the variety and procuring seed	22	1	7	13	2				1		1			
Preparing the seedbed	22	1	4	15	1				2					
Fertilizing	22		5	14	3				3	1				
Seeding	22		4	13	5	1				3			1	
Harvesting	22	1		3						1	5	8	7	
Storing	22	1	1	2							7	5	6	
Controlling insects and diseases	21		2	8	2			1	1	1	4	4	2	
Marketing	19	3	1	3		1				1	4	3	4	
Producing certified seed	14		3	4		1		3				1	2	
Keeping and using records	12		2	2	2						2	2	2	

TABLE XXXIII

MONTHS TO DO JOBS IN THE SOYBEAN ENTERPRISE AS
INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Determining possibilities	12			1	1	1	2	1	2	1	3		
Locating the field site	10			1	1		2	1		2	3		
Selecting the variety and procuring seed	11				1			3	1	2	2	2	
Preparing the seedbed	11							1	3	2	3	3	
Treating and inoculating seed	11						1	1	3		4	2	1
Fertilizing	11							1	2	1	6	1	1
Seeding	11							1	1	2	1	6	1
Controlling weeds	9									1	1	6	1
Harvesting	11		1	5					1	2		3	
Storing	10			5			1		1	1		2	
Marketing	10			2	2	1		1	1	1		2	
Keeping and using records	9					2	4	2	1				

stated whether harvesting was for beans or for hay.

Table XXXIV shows that nearly all teachers agreed that tobacco should be harvested in August and September. A high degree of regularity is shown in most of the jobs in this enterprise.

It is seen in Table XXXV that most of the garden jobs should be done in spring and summer. Only one man recommended seeding gardens in the fall.

Table XXXVI shows that most of the Irish potato jobs should be done in the spring and early summer. Only one teacher checked planting in a month after March. Harvesting was checked in all months from March to September.

The tomato enterprise, as shown in Table XXXVII, followed the same pattern as gardens and potatoes. There was very close agreement as to when the jobs should be done. The months to do the jobs ranged from late winter to September.

Table XXXVIII shows that there was considerable disagreement as to the time to do jobs in the small fruit enterprise. Most jobs in this enterprise were checked in more than one month by a majority of the teachers.

In Table XXXIX it is seen that most of the strawberry jobs should be done in the spring and early summer. The month checked for setting strawberry plants was equally divided between February and March.

There was a great variety of months checked for doing

TABLE XXXV

MONTHS TO DO JOBS IN THE GARDEN ENTERPRISE AS
INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Determining needs	22			2		2	6	6	6	1			
Planning to meet needs	22			2		2	3	8	6	1			
Selecting the field site	21			1	1	2	3	4	9	1			
Selecting varieties	21			1		2	1	6	9	3			
Constructing, planting, man- aging beds, cold frames	21						1	7	12	2	1		
Procuring seeds and plants	21			1		1	1	2	10	7			
Preparing the seedbed	21			1		1	4	9	6	2			
Fertilizing and manuring	22		1	3	1			4	6	8	4		
Planting	20			1				1	6	14	7	3	
Controlling weeds	21	2	2							8	11	5	2
Controlling diseases and insects	22	2	2					1	1	5	12	6	4
Harvesting	21	5	5	5	1					2	9	11	5
Exhibiting	16		3	8							1	4	
Preserving and storing	17	2	6	6	3					1	3	7	3
Marketing	17	5	5	1	2					1	5	10	6
Keeping and using records	12							2	4	2	2	2	

TABLE XXXVI

MONTHS TO DO JOBS IN THE IRISH POTATO ENTERPRISE
AS INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Determining possibilities	20		1	2	2	1	4	8	2	1			
Locating the field site	20				1	2	1	7	9	1			
Selecting the variety and procuring seed plants	20						1	8	8	4			
Preparing the seedbed	20			1	1	1		4	11	5	1		
Fertilizing seedbed	20							1	9	12	1		
Planting	20							1	6	13	1		
Controlling weeds	20	1							1	7	9	8	3
Controlling diseases and insects	16 20									2	5	8	2
Controlling diseases										6	7	8	1
Harvesting	20	3	2	2						3	6	6	3
Storing	20	3	3	3	3					1	3	5	2
Grading and marketing	20	3	2	6	3		1	1	1	2	5	2	
Keeping and using records	12	4	2	2			2	4	2	1	1	2	3
Keeping and using records	9	1					2	2			2	2	

TABLE XXXVIII

MONTHS TO DO JOBS IN THE SMALL FRUITS ENTERPRISE
AS INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Determining possibilities	14		2	4	2	2	2	2					
Selecting field site	12		1	3		3		4	2				
Choosing varieties and procuring plants	14			2	3	1	1	6	2	1			
Preparing the land for planting	13			3		4	2	3	3	1			
Setting plants	13			3		2		4	4	4			
Fertilizing	13		1	4		1		3	5	3			
Controlling weeds	12	1						1	2	2	5	6	1
Selecting systems of training	13					3	3	3	3	1		2	
Pruning	12			1	1	3	7	4	2	1			
Controlling diseases and insects	13	2			1		2	4	2	3	6	4	2
Harvesting and marketing	12	2	4	1	1						5	4	3
Mulching	13			3	7	4		2					
Propagating plants	12			1	1	1	2	2	1	4	1	1	1
Keeping and using records	8						2	2	1	1	1	1	1

TABLE XXXIX

MONTHS TO DO JOBS IN THE STRAWBERRY ENTERPRISE
AS INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Determining possibilities	19			2		4	4	8	1	1			
Selecting the field site	18			1		2	1	6	6	1			
Choosing the variety and procuring plants	19		1			1	1	3	9	4			
Preparing the land	19		1				1	2	10	5			
Fertilizing	19			1					13	5			
Setting the plants	19			1					8	8	1	1	
Controlling weeds	19	1	1	1				1	1	9	4	5	2
Thinning	17	1		2	2				1	3	3	7	3
Mulching	18			6	4	1	2			3	2	2	
Harvesting	19									1	7	10	1
Marketing	18					1				3	7	10	1
Renovating	18	3	2	3					1	2	2	7	3
Controlling diseases and insects	18	1	1	1				2		8	2	7	1
Producing certified plants	13						1	3	3	1	2	3	
Keeping and using records	12	1						2	2	2	3	2	

the jobs in the treefruit enterprise as shown in Table XL. Closest agreement was evidenced in the job of pruning which should be done in the late fall and winter months. A horticulturist at the University of Tennessee said that February is usually the best month to prune fruit trees.

Table XLI shows that forestry jobs were listed in several months of the year. Harvesting timber was checked in the fall months in the majority of cases. The winter months were selected for renewing the forest.

Summary

There was a wide difference of opinion as to when jobs should be done on the farm as shown in the data in this chapter. Some teachers seemed to have no logical conception of when certain jobs should be done. This was evidenced by one instance in which the job of planting corn was checked in September.

Some of the things shown in this chapter are these:

1. Most jobs were checked in several different months.
2. A majority of the jobs showed definite clusters in certain months.
3. Field crop jobs showed a more definite pattern by seasons than farm animal jobs did.
4. Some jobs that are done every month were not checked in every month.

TABLE XL

MONTHS TO DO JOBS IN THE TREE FRUITS ENTERPRISE
AS INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Determining possibilities	15		2	4	4	1	3	2					1
Selecting the site	16			3	6	3	1	3	1				1
Selecting varieties and procuring trees	16		1	1	6	5	1	2	4				
Preparing land for planting	16			2	4	4	1	3	5	1			
Setting plants	15			1	3	6	2	3	4	2			
Fertilizing	16				3	3		2	6	4	2		
Cultivating	15	1						1	2	6	5	4	2
Selecting training systems	17		1	1	3	2	5	4	2	1	1		
Pruning	17			1	2	4	5	6	6				
Controlling diseases and insects	16	1			1	1	2	4	9	3	5	4	3
Thinning	14				1	1	1	3	4		1	5	3
Picking fruit	13	5	6	6	3	2			2	1	1	2	2
Grading and packing	14	2	5	6	5	2			2	1	1	2	
Storing	12	2	2	5	5	2			1	1	1	1	
Marketing	13	2	3	5	6	3			1	1		3	
Propagating plants	13			1	2				4	2	3	1	

TABLE XLI

MONTHS TO DO JOBS IN THE FORESTRY ENTERPRISE AS
INDICATED BY TEACHERS OF VOCATIONAL
AGRICULTURE IN EAST TENNESSEE

Job	Number of cases	Month Selected by Teachers											
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Determining possibilities	18	1	2	4	4	4	3	2					
Selecting land for tree planting	18		2	2	5	4	2	2	1				
Studying tree growth	16		2	1	3	3	1	3		1		3	1
Selecting trees for economic importance	16		2	1	2	3	2	4	1	1	1	1	1
Managing the farm woodlot	18		1	2	1	3	1	6	3		1	1	
Renewing the forest	18		1	2	1	3	2	5	5	2	1	1	
Protecting the forest	19			4	1	6	2	5	3	3	3	2	
Measuring the forest	15	1		2	1	4		3	2	1		1	
Harvesting timber	17		1	4	2	5	4		2	1		1	2
Marketing timber	16		1	5	3	4	3	1	3	1		1	2
Preserving and using timber products	10		2	2	2	2				2	2	2	
Keeping and using records	10		1	3	2	1	1	2					

5. The time to do jobs in the tobacco enterprise were checked with more regularity of months than in any other enterprise.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Summary

The Problem

This study attempted to seek solutions to the following course building problems in vocational agriculture:

1. What productive enterprises are in evidence on East Tennessee farms?
2. What jobs should vocational agriculture students know and be able to do in their farming programs?
3. What month or months should each job be done?
4. What month or months should each job be studied?
5. What amount of instructional time should be scheduled for teaching each job?
6. How can job calendars be used in making course calendars?

Some answers to these problems are presented in this summary.

Method of Procedure

In conducting this study the investigator used the following procedure:

1. Reviewed related literature.
2. Made up a tentative list of productive enterprises.
3. Made a job breakdown of these enterprises using

related literature as a source of suggestions.

4. Obtained a list of enterprises reported in the farming programs of East Tennessee vocational agriculture students.
5. Compared the list of enterprises and jobs with the course calendars of ten teachers selected by the district supervisor and teacher trainers.
6. Interviewed eight technical people for their comments and suggestions.
7. Distributed questionnaires to forty-five East Tennessee teachers.

Twenty-five of the questionnaires were returned.

Teachers returning questionnaires represented twenty-two East Tennessee counties. The data obtained in this study are summarized in the following paragraphs.

Review of Literature

In planning course calendars the vocational agriculture teacher should use the following steps:

1. Make a list of enterprises and units to be included in each year's program. This list should be based on the farming programs of the students, the FFA program of work, and the farm mechanics needs of the students.
2. Divide enterprises and units into jobs to be taught.

3. Decide how much time should be allotted to each job.
4. Decide what month each job should be taught. Jobs should be scheduled as seasonably as possible.
5. Make a monthly layout of jobs to be taught.

Enterprises and Job Breakdowns

The major productive enterprises reported by vocational agricultural students in East Tennessee are these: beef cattle, dairy cattle, sheep, swine, poultry, corn, cotton, hay, small grains, pasture, tobacco, gardens, Irish potatoes, snap beans, strawberries, sweet potatoes, orchards, and bees.

Each productive enterprise was broken down into eleven or more jobs. Each job constitutes a normal teaching unit in the class and/or a normal work unit on the farm. Each of these jobs presents a number of problems within itself.

A list of jobs for each of the nineteen enterprises was presented in Chapter II. This list covers every phase of production and marketing of each enterprise.

Instructional Hours

In this study it was found that time used by teachers for teaching jobs ranged from one to ten hours. Other things shown in this study were these:

1. The median time used for teaching most jobs was one or two hours.
2. More time was used for teaching selecting and

feeding than was used for other jobs in the farm animal enterprises.

3. There was a variation in the mean and median hours for most jobs.
4. Teachers used more time per job in teaching the farm animal enterprises than they did in teaching the field crop enterprises.

Time to do the Job

There were more differences of opinion as to when jobs should be done on the farm than there were for any other part of this study. Some teachers seemed to have no logical conception of when certain jobs should be done as evidenced by one instance in which the job of planting corn was checked in September. There was evidence to show that at least two teachers checked the month to study the jobs rather than the months to do them.

Some of the things shown in Chapter IV are these:

1. Most jobs were checked in several different months.
2. A majority of the jobs showed definite clusters in certain months.
3. Field crop jobs showed a more definite pattern by seasons than farm animal jobs did.
4. Some jobs that are done every month were not checked in every month.

5. The time to do jobs in the tobacco enterprise were checked with more regularity of months than in any other enterprise.
6. The job of feeding cattle was checked in the fall months by a majority of teachers.

Recommendations

Application

The information obtained in this study ought to be useful to teachers of vocational agriculture if proper application is made of it.

In applying the findings of this study the investigator planned a course calendar for his vocational agriculture classes at Everett high school.

The group selected as an example was the sophomore class. This class consists of twenty students who will be entering their second year of vocational agriculture in September, 1955.

The following steps were used in planning the course calendar for this class:

1. Each student made out an enterprise job calendar for each enterprise in his supervised farming program. These job calendars included the job breakdown, when to do the job, when to study the job, and a space to check when the job was studied.

2. These job calendars were examined to determine what enterprises should be included in the year's instruction. A list was made of these enterprises and other units which should be included. Table XLII shows the list of enterprises and the number of students who have them in their farming programs.
3. The jobs to be taught were selected from the students' job calendars and supplemented with other needed jobs or problem areas.
4. The tables in Chapter three and four were used to help determine when each job should be taught and how many days to devote to each job. An attempt was made to schedule jobs to be studied just before they should be done on the farm. An attempt toward continuity of jobs was also made where possible.
5. The school calendar was used to determine how many teaching days there would be per month.
6. A monthly layout of jobs in the productive enterprise was made.
7. Other problem areas were included in the months in which they seemed to fit best or when there was sufficient time left to schedule them.

The course calendar for this class is shown on the following pages.

TABLE XLII

PRODUCTIVE ENTERPRISES OF TWENTY SOPHOMORE
 VOCATIONAL AGRICULTURE BOYS AT
 EVERETT HIGH SCHOOL, 1955

Enterprise	Number Having	
	As Major Unit	As Supplementary Job
Beef Cattle	12	8
Dairy	2	18
Swine	15	5
Poultry	10	10
Corn	13	5
Hay	5	13
Pastures	0	20
Tobacco	5	4
Gardens	5	2
Treefruits	2	18
Forestry	0	16

Course Calendar for Sophomores

Area	Job	Days
September -- 22 days		
Records	Transferring records up to date	1
Miscellaneous	Yourself, Incorporated	1
Beef	Marketing and grading	2
Poultry	Housing and managing laying hens	3
Poultry	Feeding for egg production	2
Poultry	Culling hens and pullets	2
Hay	Selecting varieties and procuring seed	1
Hay	Inoculating seed	1
Pastures	Fertilizing and liming	2
Pastures	Seeding	1
Tobacco and	Harvesting	2
Gardens	Exhibiting vegetables	
Tobacco	Housing and curing	2
FFA	Meeting and committee work	2
October -- 21 days		
Swine	Breeding	2
Dairy	Feeding for milk production	4
Dairy	Milking and caring for milk	2
Tobacco	Stripping, grading, and bulking	3
Forestry	Protecting the forest	2
Forestry	Measuring the forest	2
Forestry	Harvesting the timber crop	2
FFA	Learning parliamentary procedure	3
Miscellaneous	Evaluation	1
November -- 22 days		
Beef cattle	Providing housing and equipment	2
Beef cattle	Butchering	2
Swine	Feeding and caring for pregnant sows	2
FFA	Meetings and committee work	2
Miscellaneous	Evaluation	1
Farm mechanics	Learning basic skills	13
December -- 12 days		
Farm mechanics	Learning basic skills	12

January -- 22 days

S.F.P.	Closing accounts and analyzing records	5
S.F.P.	Replanning the farming program	2
Tobacco and Gardens	Preparing the plantbed Constructing, planting, and managing hot beds and cold frames	2
Beef cattle	Caring for cow and calf at calving	2
Poultry	Controlling diseases	2
Poultry	Controlling parasites	1
FFA	Learning public speaking	4
Miscellaneous	Semester review and evaluation	4

February -- 20 days

Beef cattle	Controlling diseases	2
Swine	Controlling diseases	2
Swine	Caring for the sow and litter	2
Poultry	Raising and marketing broilers	2
Hay	Selecting varieties	1
Tree fruits	Pruning	3
Tree fruits	Controlling diseases and insects	3
Tobacco	Managing the plantbed	1
Gardens	Selecting and procuring seeds and plants	2
FFA	Meetings and committee work	2

March -- 22 days

Beef cattle	Controlling parasites	2
Swine	Controlling parasites	1
Corn	Preparing the seedbed	2
Corn	Fertilizing	2
Pastures	Managing grazing	2
Forestry	Managing the farm woodlot	2
Miscellaneous	Evaluating	1
Farm Mechanics	Learning basic skills	10

April -- 20 days

Farm mechanics	Learning basic skills	5
Beef cattle	Fitting and showing	2
Corn	Planting	1
Hay	Harvesting	2
Hay	Storing	1
Pastures	Controlling weeds and excess growth	1
Hay	Marketing	1
S.F.P.	Studying individual problems	4
FFA	Planning parent and son banquet	3

May -- 14 days

Corn	Controlling weeds	1
Corn	Controlling diseases and pests	2
Tree fruits	Thinning	1
Tobacco	Topping and suckering	2
Miscellaneous	Semester review and evaluation	4
S.F.P.	Planning the summer's work	2
FFA	Planning the summer's work	2

Suggestions for Use of Data

Some things that would help the teacher in planning course calendars are the following:

1. Have each student make an enterprise job calendar for each productive enterprise and each improvement project in his supervised farming program. This job calendar should show these things: when each job is to be done, when each job is to be studied, when each job was studied, and when plans were made.
2. Plan the FFA program of work before planning the course calendar.
3. Plan for the most efficient use of time in teaching farm mechanics.
4. Discuss with students the jobs in which they will have the most immediate and pressing problems.
5. Keep a record of the time used in teaching each job. This will help in planning the following year's course calendar.

Each teacher should study local farms to see if other

enterprises are important enough to include in the instructional program.

The job breakdowns presented in this study are probably good enough to meet the needs of most students in any East Tennessee community where these enterprises are found.

Further study should be made to determine the proper job breakdowns of enterprises and units that were not included in this study.

The information obtained in this study can be used in determining what month each job should be done and should be studied if the teacher will carefully compare it with the knowledge he has of the local farming situation. Further, more careful study should be made to determine what month or months each job should be done. Technical people and farmers could lend valuable assistance in this area.

It is believed that the data presented in the chapter on instructional hours will be the most useful part of this study. Teachers who were interviewed and others who have made comments indicated that careful thought was given to this part of the questionnaire.

The teacher should use this data as a source of suggestion, keep a record of time actually used, and adjust the calendar when that job is used again as a teaching unit.

Job calendars can be used effectively in planning course calendars if the teacher will help the students to

carefully plan these job calendars. The job calendars may be used by the teacher in the following ways:

1. To determine what jobs are to be done in the student's farming program.
2. To determine what jobs have already been studied.
3. To determine what jobs need to be studied during the current year.
4. To determine when the jobs should be studied.
5. To help the student to see that the instructional program is his program.
6. To encourage the student to help in planning the instructional program.

Suggested Studies

1. A study to clarify when the jobs should be done.
2. A study to adapt this information to other areas.
3. A study to use the information obtained in this study to evaluate its usefulness.
4. A study to seek the same types of information for enterprises and units not included in this study.

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APPENDIX



To: Selected Teachers of Vocational Agriculture
From: Clarence R. Evans
Re: Course Calendars for Vocational Agriculture

I am conducting a research problem on Course Calendars for Vocational Agriculture. I am trying to determine the proper job breakdown of Productive Enterprises, when the job should be done, when the job should be studied, how much instructional time is needed, and how this information can be used to build Course Calendars.

Would you please check the enclosed sheets and return them to me as soon as possible. I would like to have this information available to teachers by early fall. I need to finish my thesis in August.

Check (1) in the month or months that each job should be done. Insert in the proper column the number of instructional hours that you would normally use to teach the job. If in your opinion any of the jobs should be re-worded please feel free to do so, also make any comments that you wish to or add any jobs that have been left out.

Sincerely,

Clarence R. Evans
Everett High School
Maryville, Tennessee