May 10, 1968

To The Graduate Council:

I am submitting herewith a thesis written by Charles T. Peal entitled "Management Practices of Selected Cotton Producers in Lauderdale County, Tennessee." 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 Extension.

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MANAGEMENT PRACTICES OF SELECTED COTTON PRODUCERS IN LAUDERDALE COUNTY, TENNESSEE

A Thesis

Presented to

The Graduate Council of

The University of Tennessee

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

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by

Charles T. Peal

June 1968

ACKNOWLEDGEMENTS

The author hereby expresses appreciation to the Lauderdale County cotton producers whose splendid cooperation made this study possible.

Gratitude is expressed to Dr. Robert S. Dotson, Chairman of the graduate committee for his counseling and guidance in the design and writing of this thesis. Appreciation also is extended to other members of the graduate committee, Drs. Larry Parks, Luther Keller, C. E. Carter, Jr. and D. M. Gossett. Their suggestions and patient help were sincerely appreciated.

He wishes to express his appreciation to Dr. Webster Pendergrass, Dean, College of Agriculture, The University of Tennessee, to Dr. Vernon W. Darter, Director, Agricultural Extension Service, The University of Tennessee, and to Agricultural Extension District Supervisors H. T. Short, Clinton Shelby and Gene Turner, for granting in-service training leave for the purpose of doing graduate study.

He is most grateful to his wife, Martha, for her patience, encouragement and assistance, and to his daughter, who was most understanding during the preparation of this study.

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ABSTRACT

Eighty-one randomly selected cotton producers in Lauderdale County were interviewed in 1966 for the purposes of: (1) characterizing those in different cotton yield groups; (2) determining which practices were being used by those in different yield groups, and (3) identifying some of the factors influencing the farmers to use or not to use the 12 practices studied. Cotton producers were divided into 4 yield categories based on pounds of lint cotton produced per acre in 1965, and main comparisons were made between highest and lowest groups.

Findings disclosed that cotton producers in the county in 1965 had the following characteristics: (1) had an average farm size of 78 acres, and (4) had an average of 46 acres of cropland. Most cotton producers were full-time farmers with cotton as their major source of income.

When highest and lowest yield groups were compared it was noted that the latter had: (1) a higher average educational level (9.5 vs. 8.4 grades); (2) a larger average size of farm (79 vs. 67 acres); (3) more average acres of cropland (61 vs. 39 acres); (4) a larger cotton allotment (20.1 vs. 9.7 acres); (5) planted a larger acreage of cotton (27.0 vs. 11.4), and (6) harvested more average acres of cotton mechanically (15.1 vs. 6.3 acres).

With regard to adoption of 12 recommended cotton production practices studied, farmers in the highest yield group had the highest total average practice diffusion rating. There also appeared to be a positive relation between yield and management levels since higher production groups tended to have higher total average practice diffusion ratings than lower yield groups.

Some other factors influencing cotton practice adoption included: (1) the net returns received per acre; (2) the adequacy of machinery and equipment; (3) the amount of technical knowledge of the operator; (4) the relative cost of the practices and benefits received, and (5) the seriousness of land preparation, planting and harvesting problems peculiar to cotton.

With regard to sources of cotton production and marketing advice reported by crop producers, they included neighbors or friends, dealers or salesmen, and Extension workers in that order. Additional sources of information most frequently mentioned were farm magazines, television, radio and weekly newspapers.

Suggestions were made for use of the findings.

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CHAPTER I

INTRODUCTION

I. THE PROBLEM AND NEED FOR THE STUDY

Lauderdale County, located in West Tennessee north of Memphis and bordered by the Mississippi River on the west, Dyer on the north, Tipton on the south, and Crockett and Haywood on the east depends principally on cotton for its agricultural income. Cotton annually accounts for three-fifths of the county gross sales from agricultural products. According to Lauderdale County Agricultural Stabilization and Conservation Service (A.S.C.S.) Office records for 1965, there were 1800 farms on which there were 33,982 acres of cotton harvested. The gross sales totaled about $8,000,000 in 1965.

Based on data collected from Ripley Federal Compress receipts, the average per acre lint production for county producers in 1965 was 665 pounds. By comparison, the four year (1962-1965) average was 626 pounds; while the average for Tennessee during that period was 585 pounds of lint per acre (11:2). Tennessee Crop Reporting Service data for Lauderdale County revealed that yields ranged from 450-1300 pounds of lint per acre for the four-year period.

By following recommended cotton production practices, it had been estimated that farmers of Lauderdale County could increase their yields of cotton by an average of 100 pounds of lint per acre providing an additional gross income valued at $1,000,000 at present market prices (1:14).

Although the Lauderdale County average was above that of the state at the time of the study, it was noted that many cotton producers were below the state average. Some growers consistently produced high lint yields per acre, while others consistently produced low yields. Previous studies had shown that the use of research verified recommended production practices with tobacco was positively associated with yield and net return per acre (3:71; 6:92; 9:71; 12:73).

Prior to the present study, observations in Lauderdale County indicated that cotton producers were not using some of the recommended production practices. For example, among the problems noted (4:5) were: (1) too little control of seedling diseases (4:14); (2) failure to fertilize based on soil test recommendations; (3) lack of use of pre and/or post emergent herbicide; and (4) failure to practice early insect control (4:13-15). It was felt that additional information was needed by the Lauderdale County Extension staff if they were to plan for a more effective educational program involving cotton producers.

II. PURPOSES

The purposes of this study, then were: (1) to determine the characteristics of Lauderdale County cotton producers in two above average and two below average cotton yield categories; (2) to ascertain which of the recommended cotton production practices they were and were not following, and (3) to identify some of the important factors influencing the cotton producers to adopt or not adopt recommended practices.

CHAPTER II

REVIEW OF LITERATURE

Limited information was available on adoption of recommended cultural practices by cotton producers.

In a 1965 study, Gordon, et al. (5:2-3) surveyed 126 cotton producers in Tipton County to secure data in regard to production practices. He found that 26.2 percent owned the farms on which cotton was produced, 21.4 percent rented and 52.4 percent both owned and rented farms on which cotton was grown. Twenty-six percent used soil test recommendations as a guide to fertilization. The number of acres limed within the last 3 years was 32 percent. The average amount of fertilizer reportedly used was 98 pounds of nitrogen, 60 pounds of phosphate and 63 pounds of potassium.

In the Tipton County study, it was further found that 84 percent of the land was planted to a recommended variety. With regard to the source of cottonseed planted, 15 growers used foundation seed, 10 used registered seed, 68 used certified and 56 planted seed saved from the previous year's crop. Machine delinted seed was used by 91.2 percent as the type planted. Also, 17 percent used chemicals to control seedling diseases.

Furthermore, 9 percent planted before April 20, 81 percent, between April 20 and May 10 and 10 percent after

May 10. The planting rates per acre for the acid-delinted seed averaged 29 pounds; for machine-delinted, averaged 26.8 pounds; for flame-delinted, averaged 15 pounds; and for fuzzy (undelinted) seed was 33 pounds. One hundred and eighteen reported hill-dropping seed, 38 drilling and 30 doing both (5:4).

The use of pre-emergent weed control methods was reported by 83.3 percent of the Tipton County farmers interviewed. In contrast, only 24.6 percent were using post-emergent weed control methods. Five percent of those interviewed did not chop their cotton at all, 22.9 percent chopped once, 54.8 percent chopped twice and 17.5 percent chopped more than two times. Two percent did not cultivate their cotton at all, 3 percent cultivated once, 4 percent twice and 91 percent three or more times.

Systemic insecticide for early insect control was used by 12.6 percent of the Tipton cotton producers. Twenty-five percent routinely sprayed for early insect control. A spray program throughout the growing season was followed by 10 percent of the cotton producers as cotton was squaring. Five percent sprayed later as the bolls were beginning to mature.

The practice of defoliation was employed on 9.6 percent of the acreage planted and by 9.5 percent of the cotton producers.

Seventy-seven percent of the cotton acreage harvested in Tipton County was machine picked. A low 21.4 percent of the farmers harvested only dry cotton free of dew. Sixty-nine percent of the cotton producers owned pickers and of these 44.4 percent were one-row and 24.6 percent were two-row.

Silverman and Bailey (10:3) in studying adoption of agricultural practices in Alcorn County, Mississippi found that over a three-year period (1954-1957) the use of recommended farm practices increased 9 percent. The adoption and continued use of individual recommended farm practices are related to other factors such as combining several practices into a workable unit. This was illustrated by the case of corn where adoption of one practice without another could reduce rather than increase expected yields.

In a 1964 Mississippi study of cotton and other farm enterprise practices, Young and Marsh (13:28) found that size of the farm operation was related to the level of adoption. A pioneer worker in the field of practice adoption, Lionberger (8:48) states that many new technological advances require large-scale operations and substantial economic resources for successful adoption. Likewise, operators of small farms may find it economically impossible to adopt certain practices.

Kaufman and Bryant (7:1) found that the median operator in the highest adoption groups was more than ten years

younger than was the case in the lowest level group. The higher adoption groups included decidedly larger proportions under 45 and much smaller proportions over 65. Lionberger (8:14) found that elderly farmers seem to be somewhat less inclined to adopt new farm practices than younger ones.

Young and Marsh (13:28) found that the farmers with the higher levels of adoption are those operators that are more highly educated. For better educated farmers there is a shorter time interval between the introduction of a new practice and the adoption of that practice than is true for the farmers with less schooling. In a Mississippi study of practice adoption, Kaufman and Bryant (7:1) discovered that three-fifths or 61 percent of the highest adoption group, had 9 or more years of schooling as compared with only 4 percent of the lowest group.

Lionberger (8:43) found that high farm income nearly always is associated with high farm practice adoption levels. Kaufman and Bryant (7:1) reported that the median gross farm income was two and one-half times as large for the highest adoption group as for the lowest.

Research indicates that the number of sources used or contacts with information sources is positively related to adoption rates. Young and Marsh (11:29) studying channels of information reported "friends, neighbors, and relatives," the agricultural agency representatives, and the radio as

being the most frequently used sources of information. More of the farmers who had talked with representatives of the agricultural agencies had adopted recommended practices than had those who had not experienced this contact.

Lionberger (8:38) found that where alertness to new developments in farming and early successful acceptance is a status factor, a person's standing in the community (community prestige) is almost certain to be positively related to the adoption of new farm practices. Under such circumstances, farmers with high social standing are expected to constantly remain well informed regarding new developments in farming.

Copp (3:27) in studying personal social factors associated with the adoption of recommended farm practices among cattlemen in Pennsylvania found that practices are not adopted solely on a logical or economic basis, but that their acceptance also is dependent on an appeal to attitudes, values, and perceptions.

CHAPTER III

METHODS AND PROCEDURE

Records of the Lauderdale County Agricultural Stabilization and Conservation Office were used to determine farms producing cotton for the year 1965. The names of producers with an acreage allotment of less than one were eliminated from the original list of 1800. A random sample of 81 cotton producers was then selected for interview from those having one or more acres.

Consideration of factors affecting cotton yields was made with assistance of University of Tennessee staff agronomists. Important, research-verified factors agreed upon were included in the interview schedule prepared for use in the study (see Appendix).

All farmers selected in the sample were visited and interviewed between April 1, 1966, and July 1, 1966. Data were obtained in each case from the farm owner or operator. All farmers were asked the same questions by the same interviewer. All questions were related to the 1965 cotton crop.

Cotton yields for 1965 were obtained and growers were divided into four yield groups for study purposes. The groups will hereafter be referred to in the following terms: (1) Considerably below average (meaning those producing 500-729 pounds of lint per acre); (2) Below average (meaning

those producing 730-789 pounds of lint per acre); (3) Above average (meaning those producing 790-924 pounds of lint per acre), and (4) Considerably above average (meaning those producing 925-1250 pounds of lint per acre).

Analyses were done, in the main, in simple numbers and percents. Averages were computed where applicable. Practice diffusion ratings and averages were computed for individual and production groups where the following ratings applied: (1) 0.0 equals "unaware" of the practice; (2) 1.0 equals "aware" of the practice; (3) 2.0 equals "interested" in the practice; (4) 3.0 equals "planning to try" the practice; (5) 4.0 equals "tried" the practice, but not using it at the time of the study, and (6) 5.0 equals "using" the practice as recommended. Major comparisons were between "considerably below average" and "considerably above average" groups in order to get extremes.

All producers selected for this study had a friendly attitude toward the survey. Most asked how their production practices compared with the average.

Degree to Which Interviewer Knew Cotton Producers

The interviewer was acquainted with more than one-half (53 percent) of the cotton producers, knowing them "very well" or "fairly well" as shown in Table I. Larger percents of these were in the considerably above average (18 percent) and above average (59 percent) categories than were in the

TABLE I

DEGREE TO WHICH INTERVIEWER KNEW RESPONDENTS BY PERCENTS ACCORDING TO 1965 COTTON YIELDS PRODUCED BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Degree to which interviewer knew respondent	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
Very well	37	42	45	27	34
Fairly well	16	26	14	14	11
Not very well	20	16	14	18	33
Not at all	27	16	27	41	22
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

below average (41 percent) and considerably below average (45 percent) categories.

Thus 47 percent of all farmers were either not very well known or not known at all. While less than one-third (32 percent) of the considerably above average producers were in these last categories, more than one-half (55 percent) of the considerably below average producers were not known or were not very well known.

Educational Levels

Data in Table II, relating to the educational level of cotton producers in Lauderdale County, show that 60 percent of those interviewed had less than a ninth grade education. Twenty-five percent had completed training between the ninth and twelfth grade levels. Fifteen percent of the producers had completed one or more years of college. The average grade level attained by those in the considerably above average group was 8.4, while those in the considerably below average group had a grade level average of 9.5 years.

Portion of Land in 1965 Cotton Allotment

Table III shows that 93 percent of the cotton producers interviewed had less than 30 percent of their land in the 1965 cotton allotment. Little difference was noted between extreme yield groups. No trend was shown relating portions of land in cotton allotments to yields.

TABLE II

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO EDUCATIONAL LEVELS ATTAINED BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Educational level attained	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
Grade 1-8	60	63	64	72	44
Grade 9-12	25	16	27	18	39
1 to 4 years of college	15	21	9	10	17
Total	100	100	100	100	100
Average grade level attained	8.3	8.4	7.9	7.8	9.5

*Percents are rounded to the nearest whole number.

TABLE III

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO PORTIONS OF LAND IN COTTON ALLOTMENTS OF 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Portion of land in 1965 cotton allotment	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
1 - 9%	7	11	0	9	6
10 - 19%	48	37	55	55	44
20 - 29%	38	47	36	32	39
30 - 39%	6	0	9	4	11
40 - 49%	0	0	0	0	0
50 - 59%	1	5	0	0	0
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

Age

Reference to Table IV discloses that only 20 percent of the 81 farmers interviewed in this study were below 45 years of age. Seventy-five percent were 45 years of age or older; while 12 percent were 65 or over. The largest group (41 percent) were in the 44-54 year interval. The average age for all farmers was 51.5. No trend was seen indicating a relation between yield and age.

Planting of 1965 Allotments

Fifty-four percent of the 81 farmers interviewed planted full 1965 cotton allotments and while the remaining 46 percent underplanted. Reference to Table V shows some slight positive relationships between yield and planting of the full 1965 cotton allotments since 53 percent of the considerably above and only 44 percent of the considerably below average groups had planted full allotments.

Further reference to the table discloses that most of those underplanting (34 percent of the 81 farmers) did so through an error in measurement; while the other (12 percent of the 81) had failed to measure before planting. A comparison of the highest and lowest yield groups indicates that more of the latter (50 percent) than of the former (31 percent) had made an error in measuring; while more of the former (16 percent) than of the latter (6 percent) had failed to measure before planting.

TABLE IV

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO AGES OF 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Age	All farmers	Yield group (Pounds lint per acre) Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
25 - 35	5	16	0	0	5
35 - 44	20	11	23	14	33
45 - 54	41	36	59	41	28
55 - 64	22	26	18	27	17
65 - 74	12	11	0	18	17
Total	100	100	100	100	100
Average age	51.5	50.5	49.5	55.0	50.6

*Percents are rounded to the nearest whole number.

TABLE V

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO PERCENTS OF 81 LAUDERDALE COUNTY FARMERS PLANTING FULL ALLOTMENTS AND REASONS FOR UNDERPLANTING

Planted 1965 cotton allotment in full	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
Yes	54	53	55	64	44
No	46	47	45	36	56
Failed to measure	12	16	14	14	6
Made an error	34	31	31	22	50
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

Major Occupation

Seventy percent of the 81 cotton producers interviewed were full-time farmers. Reference to Table VI shows that twenty-eight percent were part-time farmers. Single percents were in "wage earner" and "housewife" categories. There appears to be no significant difference between the occupations of farmers and their yield groups.

Sex of Operators

Data presented in Table VII shows that 96 percent of the farms were operated by men and the remaining 4 percent were operated by women. There appears to be no significant difference between sex of operator and yield though none of the women were in the highest yield group.

Practice Adoption Level

Study of data in Table VIII shows that the highest percent (28) of all the cotton farmers interviewed had an adoption level of "a little later than most." A nearly like percent (26) were classified as "sooner than average." Sixteen percent of the farmers were classified as "among the first few" in practice adoption, an equal (16) percent being classed as being "among the last few." The remaining 14 percent were judged to be "soon after the first few."

Comparison of the extreme groups indicates that while nearly two-thirds of the considerably above average cotton

TABLE VI

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO THE MAJOR OCCUPATION OF 81 FARMERS OF LAUDERDALE COUNTY, TENNESSEE

Major occupation	All farmers Percent* (N=81)	Yield group (Pounds lint per acre) Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
Full-time farmer	70	63	68	86	61
Part-time farmer	28	37	22	14	39
Wage-earner	1	0	5	0	0
Housewife or widow	1	0	5	0	0
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

TABLE VII

NUMBERS AND PERCENTS OF 81 FARM OPERATORS IN LAUDERDALE COUNTY IN VARIOUS YIELD GROUPS BY SEX

Sex	All farmers Percent* (N=81)	Yield group (Pounds lint per acre) Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
Man	96	100	95	95	94
Woman	4	0	5	5	6
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

TABLE VIII

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO INTERVIEWER'S JUDGMENT OF 81 LAUDERDALE COUNTY FARMERS' PRACTICE ADOPTION LEVELS

Practice adoption level	Yield group (Pounds lint per acre)				
	All farmers Percent* (N=81)	Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
Among the first few	16	16	18	9	17
Soon after the first few	14	5	23	18	11
Sooner than average	26	42	14	27	22
Little later than most	28	26	36	32	22
Among the last few	16	11	9	14	28
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

growers were "sooner than average" or above, exactly one-half (50 percent) of the considerably below average growers were so classified.

Major Source of Income

Data presented in Table IX disclose that 65 percent of the 81 farmers interviewed depended upon cotton as their major source of income. Fourteen percent were wage earners who farmed on the side. Ten percent of the farmers derived most of their income from either business or professional occupations. Four percent depended upon soybeans for the major portion of their income. Three percent received their major agricultural income from beef and hogs. Two percent were vegetable growers. General farming and rent income and social security were reported as major income sources by one percent of the cotton producers.

The below average producers tended to depend more upon cotton as their major source than was true for the above average producers. Also wage earners who farmed tended to fall in the considerably below average group. In the considerably above average group there appears to be a definite trend toward soybean production and beef and/or hogs as major sources of income. More considerably below average growers (11 percent) than considerably above (5 percent) mentioned business as a major source. One low producer also listed general farming.

TABLE IX

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO MAJOR SOURCES OF INCOME OF 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Source of income	All farmers Percent* (N=81)	Yield group (Pounds lint per acre) Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
1. Cotton	65	58	59	86	56
2. Wage-earner	14	5	23	9	17
3. Business	5	5	5	0	11
4. Professional	5	5	5	5	6
5. Soybeans	4	11	4	0	0
6. Beef and/or hogs	3	11	0	0	0
7. Truck crops	2	5	0	0	5
8. General farm	1	0	0	0	5
9. Rent income and social security	1	0	4	0	0
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

Tenure Status

Fifty-one percent of the farmers who grew cotton were owners, 44 percent shareworkers and 5 percent cash rented as shown in Table X. A slightly higher percent (56) of those in the two above average categories were owners than was true for those in the below average groups (46 percent). There was a slight difference (53 percent) in favor of the below average groups when compared to the above average groups for the shared cotton (44 percent) more of the below average group were cash renters. Of those who cash rent, 6 percent were in the considerably below average group as compared to none in the considerably above average group. Approximately the same percents of the considerably above (58 percent) and considerably below (61 percent) average groups owned their cotton land.

Degree of Respondent's Interest in Improving Cotton Production and Marketing

Data presented in Table XI show that 92 percent of the 81 cotton producers interviewed were at least "somewhat interested" in improving. Eight percent were either "indifferent" or "not interested." Little difference was noted in the degree of interest between the yield groups, though a higher percent of the considerably above average group (95) than of the considerably below (83) were at least "somewhat interested" in improving their cotton production and marketing.

TABLE X

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO THE OWNERSHIP OF COTTON ACREAGE OF 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Ownership of cotton acreage	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
Owned	51	58	55	32	61
Cash rented	5	0	4	9	6
Shared	44	42	41	59	33
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XI

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO THE RESPONDENT'S INTEREST IN IMPROVING COTTON PRODUCTION AND MARKETING OF 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Degree of respondent's interest	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
Somewhat interested	36	42	36	36	28
Very interested	56	53	59	59	55
Indifferent	7	5	5	5	11
Not interested	1	0	0	0	6
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

Cotton Allotments

The data relating to cotton allotments are presented in Table XII. Fifty-seven percent of all farmers interviewed had less than 15 acres cotton allotment. Twenty-nine percent had an allotment of 15 to 35 acres, and 14 percent had between 35 and 150 acres. Data showed that the median acreage of the considerably above average group was 9.7 acres compared to 20.1 acres for the considerably below average group. Eighty-four percent of the producers in the considerably above average group had less than 15 acres while 44 percent of the considerably below average yield group were in this category.

Size of Farm

Data in Table XIII show that sixty-one percent of all farmers interviewed had farms smaller than 100 acres in size, the largest single interval being 50-99 acres accounting for more than one-third (34 percent) of the cotton growers. The median average size of farm was 78 acres.

While three-fourths (74 percent) of the highest yield group had farms smaller than 100 acres in size, considerably fewer of those in the lowest yield group (61 percent) had farms so small. Further, it is interesting to note that the median size of farms for the former was 67 acres and for the latter was 79 acres. Therefore, there was a tendency for high yield to be associated with smaller farms.

TABLE XII

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO THE SIZE OF THE COTTON ALLOTMENTS OF 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

1965 cotton allotment	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
0.1 - 5.0 acre	13	21	27	0	6
5.1 - 15.0 acre	44	63	23	50	38
15.1 - 25.0 acre	16	0	36	18	11
25.1 - 35.0 acre	13	16	9	18	11
35.1 - 45.0 acre	3	0	5	0	6
45.1 - 55.0 acre	7	0	0	5	22
55.1 - 150.0 acre	4	0	0	9	6
Total	100	100	100	100	100
Median	13.6	9.7	15.0	15.1	20.1

*Percents are rounded to the nearest whole number.

TABLE XIII

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO SIZE OF FARM OF 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Size of farm, acres	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
1 - 9	6	11	14	0	0
10 - 29	9	16	10	0	12
30 - 49	12	11	13	14	11
50 - 99	34	36	27	36	38
100 - 249	24	15	36	36	6
250 - 499	11	11	0	5	27
500 - 1000	4	0	0	9	6
Total	100	100	100	100	100
Median	78 acres	67 acres	70 acres	104 acres	79 acres

*Percents are rounded to the nearest whole number

Acres of Cropland

Fifty-five percent of the 81 farmers interviewed had less than 50 acres of cropland, the largest interval being 30-49 acres, accounting for one-fourth (25 percent) of the cotton producers (see Table XIV). The median acreage of cropland was 46.

While more than two-thirds (68 percent) of the highest yield group had less than 50 acres of cropland, only one-half (50 percent) of those in the lowest yield group had so few acres of cropland. When the median acres of cropland are compared, it may be seen that considerably above average producers had a median of 39 acres; while the considerably below had 61 acres. This suggests the tendency for higher yield in cotton to be associated with smaller cropland acreages.

Type of Seed Delinting Used

Ninety-six percent of the 81 cotton producers interviewed used machine delinted seed for planting (see Table XV). This type of seed delinting was the main type used by those in all four yield groups. One producer in the considerably above average group used undelinted seed; while three other individuals in lower production groups used acid delinted or zip flamed seed. There appears to be no relation between yield and type of seed used.

TABLE XIV

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO TOTAL ACRES CROPLAND OF 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Acres of cropland	All farmers Percent* (N=81)	Yield group (Pounds lint per acre) Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
1 - 9	8	10	18	0	5
10 - 19	12	16	9	5	17
20 - 29	10	11	14	5	11
30 - 49	25	31	14	36	17
50 - 99	21	16	31	27	11
100 - 249	16	11	14	22	17
250 - 499	8	5	0	5	22
Total	100	100	100	100	100
Median	46 acres	39 acres	43 acres	58 acres	61 acres

*Percents and medians are rounded to the nearest whole number.

TABLE XV

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO TYPE OF SEED DELINTING USED BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Type of seed delinting used	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
Undelinted	1	5	0	0	0
Machine delinted	96	95	91	95	95
Acid delinted	2	0	4	5	0
Zip flamed	1	0	5	0	0
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

Size of Planter Used

Data presented in Table XVI show little difference in the size of planter regardless of yield group. Sixty-three percent of the 81 farmers interviewed used two-row planters; while 32 percent used four-row planters. Surprisingly 4 individuals in different yield groups used only a one-row planter.

When highest and lowest production groups are compared, it is noted that a slightly larger percent of the former (37) than of the latter (28) used four-row planters. However, any trend or tendency is slight.

Acres of Cotton Planted

Sixty-five percent of the 81 cotton producers interviewed planted less than 15 acres, the actual average being 19.0 as shown in Table XVII. The actual average acreage in the two below average groups ranged from 24.6 to 27.0 acres and in the above average groups from 11.4 to 13.6 acres. Eighty-four percent of the 19 growers in the considerably above average group had less than 15 acres of cotton planted in 1965 whereas only 49 percent in the considerably below average group were in this category. Data also show that no producer in the highest yield group planted more than 35 acres of cotton. There seems to be a negative relation between acreage planted and yield (i.e. the smaller the planting the higher the yield).

TABLE XVI

FREQUENCY OF SIZE OF PLANTER USED IN VARIOUS COTTON YIELD GROUPS BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE, 1965

Size of planter used	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
One row	4	5	5	5	0
Two row	63	58	63	59	72
Four row	32	37	27	36	28
Two and four row	1	0	5	0	0
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XVII

RELATIONS OF 1965 YIELDS PRODUCED TO THE NUMBER OF ACRES OF COTTON PLANTED BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Acres of cotton planted	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
1.0 - 5.0	15	21	27	0	11
5.1 - 15.0	50	63	41	59	38
15.1 - 25.0	8	0	18	9	6
25.1 - 35.0	14	16	9	18	11
35.1 - 45.0	3	0	5	0	6
Above 45	10	0	0	14	28
Total	100	100	100	100	100
Actual average	19.0	11.4	13.6	24.6	27.0

*Percents are rounded to the nearest whole number.

Mechanical Harvesting

Table XVIII discloses that, of the 81 cotton producers interviewed, 73 percent reported using a mechanical harvester on one or more acres for an average of 12.6 acres. Fewer considerably above average growers (58 percent) used mechanical pickers on a smaller scale (an average of 6.3 acres) than was true for those in the considerably below average category. (83 percent using pickers on an average of 15.1 acres of cotton).

Data presented in Table XIX show that 33 percent of the producers interviewed harvested 100 percent of their cotton acreage mechanically. The actual average percent of cotton land harvested was 57.

Thirty-seven percent of the farmers in the highest yield group mechanically harvested all of their cotton. The mechanically harvested was less than one-half (47 percent) of the group's total acreage. Forty-two percent of the considerably above average growers did no mechanical harvesting at all.

At the same time, one-third of those in the lowest yield group harvested 100 percent of their cotton mechanically. On the average, the group mechanically harvested more than one-half (56 percent) of their total cotton acreage. Only 17 percent of the considerably below average growers did no mechanical harvesting at all.

TABLE XVIII

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO NUMBER OF ACRES HARVESTED MECHANICALLY ON 81 FARMS IN LAUDERDALE COUNTY, TENNESSEE

Acres harvested mechanically	All farmers Percent* (N=81)	Yield group (Pounds lint per acre) Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
None	27	42	36	14	17
1.0 - 4.9	10	16	5	4	17
5.0 - 9.9	22	21	14	23	28
10.0 - 24.9	24	11	41	32	11
25.0 - 49.9	13	10	4	18	22
50.0 - 104.9	4	0	0	9	5
Total	100	100	100	100	100
Actual average acres harvested mechanically	12.6	6.3	9.4	19.3	15.1

*Percents are rounded to the nearest whole number.

TABLE XIX

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO PERCENTS AND AVERAGE PERCENTS OF COTTON ACRES HARVESTED MECHANICALLY BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Percent of cotton acres harvested mechanically	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
None	28	42	36	14	17
1 - 25	5	5	0	0	17
26 - 50	14	11	5	23	17
51 - 75	12	5	27	4	11
76 - 99	8	0	5	23	5
100	33	37	27	36	33
Total	100	100	100	100	100
Actual average percent	57	47	51	71	56

*Percents are rounded to the nearest whole number.

Reference to data presented in Table XX show that 26 percent of the 81 cotton producers interviewed owned mechanical pickers of which 20 percent were one-row and 6 percent were two-row. Twenty-one percent of the considerably above average group owned pickers compared to 17 percent for the considerably below average group. Considerably above average growers preferred one-row pickers; while some others had two-row machines.

These facts tend to indicate that at least three kinds of producers compose the highest yield group. First, those with small acreages they harvested by hand. Second, those with larger acreages who harvested entirely by machine, and third, those who have parts of their cotton acreage harvested mechanically on a custom basis.

Nevertheless, data show a negative relation between yield and: (1) use of a mechanical picker; (2) acres of cotton harvested mechanically, and (3) percent of cotton acreage harvested mechanically. The higher the percent and acreage of cotton harvested mechanically, the lower the yield tends to be. There was no apparent advantage to owning pickers.

Turn-row Space

Table XXI discloses that 40 percent of the cotton growers left 6 to 10 feet of turn-row space. There were no

TABLE XX

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO PERCENT OF FARMERS OWNING MECHANICAL PICKERS AND SIZE OF MECHANICAL PICKERS OWNED BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Size of mechanical picker owned	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 924-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
None	74	79	73	63	83
One-row	20	21	23	23	11
Two-row	6	0	4	14	6
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XXI

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO AMOUNTS OF TURN-ROW SPACE ALLOWED BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Number of feet in turn-row space	All farmers Percent* (N=81)	Yield group (Pounds lint per acre) Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
0 - 5	5	5	0	9	6
6 - 10	40	48	46	23	44
11 - 15	29	21	18	50	28
16 - 20	22	26	27	14	22
21 - 30	1	0	0	4	0
Not answered	3	0	9	0	0
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

major differences between yield groups when turn-row spacings were compared.

Texture of Soil

Table XXII shows that 89 percent of all farmers interviewed, produced cotton on loam and silty loam soil, 4 percent on clay soils, 3 percent on sandy soil and 4 percent on loam and clay soil. Data reveal little differences between the percents of above and below average producers on loam and silty loam soils. The 3 percent farming sandy soil were in the considerably above average group, their farms being adjacent to the Mississippi River where there is a large area of this type soil. Production on such soil is high.

Average Practice Diffusion Score and Total Average Ratings

The average individual cotton practice diffusion and total average ratings for the 81 farmers interviewed in the four yield groups for the twelve recommended practices are shown in Table XXIII. Seventy-two percent of the cotton producers "had tried the practices, but were not using them" at the time of the interview (3.50-4.49). Eighteen percent had an average practice diffusion rating between 4.50-5.00, meaning that they were, in the main, "using the practices." The remaining 10 percent were in the 2.50 to 3.49 category denoting that they were "planning to try the practices." The total average rating for all producers was 4.07.

TABLE XXII

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO TEXTURE OF COTTON LAND OF 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Texture of soil	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
Fine sandy loam	3	11	0	0	0
Silt loam	89	79	95	95	83
Clay	4	5	5	5	6
Mixture of loam and clay	4	5	0	0	11
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XXIII

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO AVERAGE COTTON PRACTICE DIFFUSION RATINGS AND TOTAL AVERAGE RATINGS*

Average practice diffusion rating intervals	All farmers Percent** (N=81)	Yield group (Pounds lint per acre) Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
0.00 - 0.49	0	0	0	0	0
0.50 - 1.49	0	0	0	0	0
1.50 - 2.49	0	0	0	0	0
2.50 - 3.49	10	0	18	5	17
3.50 - 4.49	72	74	64	77	72
4.50 - 5.00	18	26	18	18	11
Total	100	100	100	100	100
Total actual average rating	4.06	4.12	4.08	4.07	3.97

*In the rating scale used: 0 = unaware; 1 = aware of the practice; 2 = interested in the practice; 3 = planning to try the practice; 4 = tried the practice, but not now using it; and 5 = using the practice.

**Percents are rounded to the nearest whole number.

Considerably above average producers had the highest total average practice diffusion rating (4.12), and the considerably below average group had the lowest (3.97); though the spread was not great.

Average Cotton Practice Diffusion Ratings and Total Average Ratings

Table XXIV shows the average practice diffusion ratings of those in the various yield groups for each and all of the 12 recommended cotton production practices. It may be noted immediately that there appears to be a direct relation between yield and total average ratings since considerably above average producers had a 4.12 total average rating and the considerably below average had 3.97--middle groups falling in between (4.09 and 4.07).

Practices (2, 3, 4 and 10) related to planting. Producers in both the highest and lowest groups averaged in the "using" stage with regard to related practices, the former outrating the latter in each instance as follows: (1) Practice 2 - planted recommended varieties (5.00 and 4.89, respectively); (2) Practice 3 - planted between April 20 and May 20 (5.00 and 4.94,respectively), and (3) Practice 4 - used recommended seeding rates and procedures (5.00 and 4.94, respectively). The group averaged in the "planning to try" stage for related Practice 10 - fertilized cotton based on soil test (3.42 and 3.06, respectively).

TABLE XXIV

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO AVERAGE COTTON PRACTICE DIFFUSION RATINGS AND TOTAL AVERAGE RATINGS

Cotton management practice	All farmers	Yield group (Pounds lint per acre) Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
1. Harvested only dry cotton	4.99	5.00	5.00	4.95	5.00
2. Planted recommended varieties	4.98	5.00	5.00	5.00	4.89
3. Planted between April 20 and May 20	4.98	5.00	5.00	4.95	4.94
4. Used recommended seeding rates and procedure	4.96	5.00	4.91	5.00	4.94
5. Use of insecticide based on actual field count	4.78	5.00	4.59	4.91	4.61
6. Effectively controlled weeds	4.59	4.47	4.91	4.73	4.17
7. Had cotton classified	4.41	4.58	4.45	4.32	4.28
8. Getting advice of professionals in production and marketing	4.28	4.47	3.64	4.82	4.22

TABLE XXIV (continued)

Cotton management practice	All farmers Percent (N=81)	Yield group (Pounds lint per acre): Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
9. Effectively controlled insects	3.93	3.84	4.09	3.95	3.78
10. Fertilized cotton land based on soil test	3.23	3.42	3.45	3.00	3.06
11. Used recommended material to help control seedling diseases	1.84	1.84	2.05	1.59	1.89
12. Used recommended procedures to help control seedling diseases	1.84	1.84	2.05	1.59	1.89
Total average rating	4.07	4.12	4.09	4.07	3.97

*In the rating scale used: 0 = unaware; 1 = aware of the practice; 2 = interested in the practice; 3 = planning to try the practice; 4 = tried the practice, but not now using it; and 5 = using the practice.

Practices (11, 12, 5, 6 and 9) related to pest control. Practices concerning insect and disease control for the highest and lowest yield groups ran from the "aware" stage (1.84 and 1.89, respectively) for Practices 11 and 12 - use of recommended material and procedures to help control seedling diseases through the "tried" stage (3.84 and 3.78, respectively) for Practice 9 - effectively controlled insects to the "using" stage for Practice 5 - use of insecticides based on actual field count (5.00 and 4.61, respectively) and Practice 6 - effectively controlled weeds (4.47 and 4.17, respectively).

Other Practices (1, 7 and 8). Producers in the highest and lowest yield groups averaged in the "using" stage (5.00 each) with regard to Practice 1 - harvested only dry cotton. For Practice 7 - had cotton classified, those in the highest yield group average in the "using" stage (4.58); while those in the lowest yield group averaged in the "tried" stage (4.28). When comparing the highest and lowest yield groups for Practice 8 - getting the advice of professionals in production and marketing, the average diffusion rating was 4.47 for the former and 4.22 for the latter indicating the "tried" stage.

Stages of the Diffusion Process for 81 Cotton Producers

Data presented in Table XXV show the percents of the 81 farmers in the four yield groups at the various stages of

TABLE XXV

PERCENTS OF 81 FARMERS IN FOUR YIELD GROUPS AT THE VARIOUS STAGES OF THE DIFFUSION PROCESS WITH REGARD TO 1965 COTTON PRODUCTION PRACTICES

Cotton production practice	Unaware Percent*	Aware Percent	Interested Percent	Plan to try Percent	Tried and not using Percent	Using Percent	Total N = 81 Percent
1. Harvested only dry cotton	0	0	0	0	1	99	100
2. Planted a recommended variety of cotton last year	0	0	0	1	0	99	100
3. Planted between April 20 and May 20	0	0	0	0	2	98	100
4. Used recommended seeding rate and procedure for seed used	0	0	0	1	1	98	100
5. Use of insecticides based on actual field counts	2	0	0	5	0	93	100
6. Effectively controlled weeds	0	4	0	12	1	83	100
7. Had cotton classified	1	11	1	0	5	82	100

TABLE XXV (continued)

Cotton production practice	Unaware Percent	Aware Percent	Interested Percent	Plan to try Percent	Tried and not using Percent	Using Percent	Total N = 81 Percent
8. Getting the advice of professionals in the area of cotton production and marketing	1	9	3	11	1	75	100
9. Effectively controlled insects	1	1	0	47	3	48	100
10. Fertilized cotton land according to soil test recommendation	0	26	1	31	7	35	100
11. Used recommended material to control seedling diseases	7	44	15	27	3	4	100
12. Used recommended procedure to control seedling diseases	7	44	15	27	3	4	100
Total average percent	2	11	3	14	2	68	100

*Percents are rounded to the nearest whole number.

the diffusion process with regard to the 12 recommended cotton production practices. Tables XXVI and XXVII present data for the highest and lowest groups, respectively. It is to be noted at the outset that none of the highest producers (Table XXVI) had tried and rejected any of the recommended practices, whereas various small percents of the lowest producers (Table XXVII) had tried and rejected 6 of the 12 recommended practices. Also it may be seen by looking at total average percents that relatively large groups of producers in both production categories fell in "aware" and "planning to try" stages of diffusion. The largest percents, 71 and 64, respectively, were on the average using each practice.

Practices (2, 3, 4 and 10) related to planting. As shown in Table XXV, 99 percent of the cotton producers interviewed were "using" Practice 2 - planting a recommended variety. Ninety-eight percent were in the "using" stage with regard to Practice 3 - planting between April 20 and May 20, and Practice 4 - use of recommended seeding rate. Thirty-five percent of all producers were "using" Practice 10 - fertilizing cotton land according to a soil test. Twenty-six percent were only in the "aware" stage in regard to Practice 10; while 31 percent just "planned to try" it and 7 percent had "tried" it out but not adopted. When the highest (Table XXVI) and lowest (Table XXVII) groups are

TABLE XXVI

PERCENTS OF 19 FARMERS IN LAUDERDALE COUNTY, TENNESSEE WITH 1965 COTTON YIELDS OF 925-1250 POUNDS LINT PER ACRE (CONSIDERABLY ABOVE AVERAGE) AT THE VARIOUS STAGES OF THE DIFFUSION PROCESS WITH REGARD TO COTTON PRODUCTION PRACTICES

Cotton production practice	Unaware Percent*	Aware Percent	Interested Percent	Plan to try Percent	Tried and not using Percent	Using Percent	Total N = 19 Percent
1. Harvested only dry cotton	0	0	0	0	0	100	100
2. Planted a recommended variety of cotton last year	0	0	0	0	0	100	100
3. Planted between April 20 and May 20	0	0	0	0	0	100	100
4. Used recommended seeding rate and procedure for seed used	0	0	0	0	0	100	100
5. Use of insecticides based on actual field counts	0	0	0	0	0	100	100
6. Effectively controlled weeds	0	5	0	16	0	79	100
7. Had cotton classified	0	11	0	0	0	89	100

TABLE XXVI (continued)

Cotton production practice	Unaware Percent	Aware Percent	Interested Percent	Plan to try Percent	Tried and not using Percent	Using Percent	Total N = 19 Percent
8. Getting the advice of professionals in the area of cotton production and marketing	0	5	0	16	0	79	100
9. Effectively controlled insects	0	0	0	58	0	42	100
10. Fertilized cotton land according to soil test recommendation	0	26	0	26	0	48	100
11. Used recommended material to control seedling diseases	5	42	27	21	0	5	100
12. Used recommended procedure to control seedling diseases	5	42	27	21	0	5	100
Total average percent	1	11	4	13	0	71	100

*Percents are rounded to the nearest whole number.

TABLE XXVII

PERCENTS OF 18 FARMERS IN LAUDERDALE COUNTY, TENNESSEE WITH 1965 COTTON YIELDS OF 500-729 POUNDS LINT PER ACRE (CONSIDERABLY BELOW AVERAGE) AT THE VARIOUS STAGES OF THE DIFFUSION PROCESS WITH REGARD TO COTTON PRODUCTION PRACTICES

Cotton production practice	Unaware Percent*	Aware Percent	Interested Percent	Plan to try Percent	Tried and not using Percent	Using Percent	Total N = 18 Percent
1. Harvested only dry cotton	0	0	0	0	0	100	100
2. Planted a recommended variety of cotton last year	0	0	0	6	0	94	100
3. Planted between April 20 and May 20	0	0	0	0	6	94	100
4. Used recommended seeding rate and procedure for seed used	0	0	0	0	6	94	100
5. Use of insecticides based on actual field counts	6	0	0	6	0	88	100
6. Effectively controlled weeds	0	5	0	28	6	61	100
7. Had cotton classified	0	17	0	0	5	78	100

TABLE XXVII (continued)

Cotton production practice	Unaware Percent	Aware Percent	Interested Percent	Plan to try Percent	Tried and not using Percent	Using Percent	Total N = 18 Percent
8. Getting the advice of professionals in the area of cotton production and marketing	0	11	5	6	6	72	100
9. Effectively controlled insects	0	6	6	50	0	44	100
10. Fertilized cotton land according to soil test recommendation	0	33	0	28	6	33	100
11. Used recommended material to control seedling diseases	5	50	6	33	0	6	100
12. Used recommended procedure to control seedling diseases	5	50	6	33	0	6	100
Total average percent	1	14	1	16	3	64	100

*Percents are rounded to the nearest whole number.

compared, it is evident that the former had higher percents "using" the related practices than the latter. The greatest difference between the two is seen on Practice 10 where nearly one-half (48 percent) of the considerably above average producers were fertilizing based on soil test, whereas only one-third of the considerably below producers were so fertilizing. Relatively large percents in each group were at "aware" and "plan to try" stages on this practice.

Practices (11, 12, 5, 6 and 9) related to pest control. Table XXV, page 49, shows that 44 percent of the producers were only in the "aware" stage for Practices 11 and 12, which related to the control of seedling diseases; while another 7 percent were in the "unaware" category. Fifteen percent were "interested," 27 percent "planned to try it," 3 percent had "tried" but had not adopted it, and only 4 percent were actually "using" Practices 11 and 12. Ninety-three percent of all cotton producers reported "using" Practice 5 - use of insecticide based on actual field counts; while only 48 percent were "using" the related Practice 9 - effectively controlling insects. Eighty-three percent of the producers were in the "using" stage for Practice 6 - effectively controlling weeds; while 12 percent were in the "plan to try" stage. When the highest (Table XXVI, page 52) and lowest (Table XXVII, page 54) producers are compared it is noted

that the majority of those in the former group (53 percent) were at least "interested" in Practices 11 and 12 whereas the majority of the latter (55 percent) were not even "interested." All of the highest producers used Practice 5 while 12 percent of the lowest producers had not even "tried" it. Very little difference is noted when production groups are compared with regard to Practice 9, though 6 percent of the lowest producers were only aware of the practice. Seventy-nine percent of those in the highest group were effectively controlling weeds (Practice 6); while only 61 percent in the lowest group were doing so.

Other Practices (1, 7 and 8). Ninety-nine percent of the cotton producers were "using" Practice 1 - harvesting only dry cotton; while only 82 percent were following Practice 7 - had cotton classified as indicated in Table XXV, page 49. Of those getting advice from professionals in the area of cotton production and marketing (Practice 8), 75 percent were "using," 11 percent "planned to try," and 9 percent were "aware" that this advice was available and necessary. When the highest (Table XXVI, page 52) and lowest (Table XXVII, page 54) cotton producers are compared, it is seen that only slight differences exist on Practices 1 and 8. On Practice 7, however, 22 percent of the lowest group were not using the practice as compared to 11 percent for the highest group.

Most Recent Year Cotton Land Tested

Data in Table XXVIII show that 41 percent of the 81 cotton producers interviewed in this study had made soil test at some time. Of these 21 percent had taken test not more than three years prior to the 1965 crop--indicating that tests could have been taken as early as January 1963 and the recommendations still would have been valid. The remaining 20 percent had tested their soil but had done so prior to 1963 (1951-1963). However, surprisingly, many of those in the highest yield category (31 percent) were apparently still following recommendations based on soil tests that were outdated. When comparing the yield groups it is noted that a larger percent of the farmers in each of the above average groups had taken soil tests than was true for those in the two below average yield groups. When the highest and lowest production groups are compared, a higher percent of the former (47) than of the latter (39 percent) had taken soil tests. These comparisons of the yield groups suggest the tendency for higher yield of cotton to be associated with use of soil test.

Number of Weeks Before Planting That Seedbed Was Prepared

Table XXIX reveals that, of the 81 cotton producers interviewed, 38 percent had prepared their seedbeds 3 weeks before planting, 25 percent 4 weeks before, 19 percent 2 weeks before, 15 percent 5-8 weeks before, and 3 percent 1

TABLE XXVIII

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO MOST RECENT YEAR COTTON LAND WAS TESTED ON 81 FARMS IN LAUDERDALE COUNTY, TENNESSEE

Most recent year cotton land tested	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
Not tested	59	53	50	73	61
1951 thru 1962	20	31	18	10	17
1963 thru 1965	21	16	32	17	22
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XXIX

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO NUMBER OF WEEKS BEFORE PLANTING THAT SEEDBED WAS PREPARED FOR 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Number of weeks	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
1 week	3	0	5	4	6
2 weeks	19	42	13	4	11
3 weeks	38	16	27	64	50
4 weeks	25	37	36	14	11
5 - 7 weeks	9	5	10	0	22
8 weeks or more	6	0	9	14	0
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

week before planting. It was interesting to note that those in the highest production group tended to prepare seedbeds either 2 or 4 weeks in advance; while more of those in the lower production groups prepared their seedbeds 3 weeks ahead of planting. Ninety-five percent of those in the considerably above average group prepared seedbeds between 2 and 4 weeks before planting; while only 72 percent of the considerably below average group prepared seedbeds during that period.

Pounds Fertilizer Used

Data presented in Table XXX disclose that 40 percent of the 81 cotton producers interviewed reported having used 450-749 pounds of fertilizer per acre. For all groups an average of 414.3 pounds of fertilizer was used. When comparing the yield groups it is noted that most (78 percent) of the lowest yield group used less than 450 pounds of fertilizer per acre, for an average of 391 pounds; while most (58 percent) of those in the highest group used 450 pounds or more for an average of 450 pounds. Therefore there seems to be a definite positive relation between fertilizer usage and yield (i. e. the use of higher rates increases yield).

Pounds Nitrogen Per Acre

Table XXXI reveals that an average of 75 pounds of nitrogen per acre was used by the 81 cotton producers interviewed. When comparing the considerably above average (79

TABLE XXX

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO TOTAL POUNDS OF FERTILIZER USED AND AVERAGE POUNDS FERTILIZER USED BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Pounds fertilizer used	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
0 - 349	21	21	13	28	23
350-449	39	21	50	27	55
450-749	40	58	37	45	22
Total	100	100	100	100	100
Average pounds fertilizer	414	450	409	407	391

*Percents and averages are rounded to the nearest whole number.

TABLE XXXI

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO ACTUAL POUNDS OF NITROGEN AND AVERAGE POUNDS APPLIED PER ACRE, BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Pounds nitrogen per acre	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
0 - 39	8	16	5	5	6
40 - 79	49	32	59	50	56
80 - 119	39	47	32	41	33
120 - 169	4	5	4	4	5
Total	100	100	100	100	100
Average pounds	75	79	71	78	72

*Percents and averages are rounded to the nearest whole number.

pounds) and considerably below average (72 pounds) groups it is noted that the former did use a few more pounds of nitrogen, on the average. Fifty-two percent of those in the highest yield group used 80 or more pounds of nitrogen per acre as contrasted to 38 percent using as much for the lowest yield group. This seems to indicate a trend toward high yields being associated with higher rates of nitrogen fertilizer.

Pounds of Phosphate Per Acre

An average of 47 pounds of phosphate was used by the 81 cotton producers interviewed as shown in Table XXXII. Little difference was noted when comparing the two above and two below average groups, and no difference existed between the highest and lowest. Therefore application of phosphate does not appear to be related to higher yields.

Pounds Potash Per Acre

Data in Table XXXIII show that an average of 44 pounds of potash was used by the 81 cotton producers interviewed. Of those farmers using less than 45 pounds of potash, the larger percents were in the two below average groups. Sixty-eight percent of the producers in the highest yield group used 45 or more pounds of potash; while 66 percent of those in the lowest yield group used this amount. The average total pounds of potash used by the highest and lowest yield

TABLE XXXII

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO POUNDS OF PHOSPHATE (P_2O_5) AND AVERAGE POUNDS APPLIED PER ACRE, BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Pounds phosphate (P_2O_5) per acre	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
0 - 44	32	32	28	36	28
45 - 84	63	63	68	55	67
85 - 124	5	5	4	9	5
Total	100	100	100	100	100
Average pounds	47	50	47	42	50

*Percents and averages are rounded to the nearest whole number.

TABLE XXXIII

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO POUNDS OF POTASH (K_2O) AND AVERAGE POUNDS APPLIED PER ACRE BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Pounds potash (K_2O) per acre	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
0 - 44	36	32	27	45	34
45 - 84	61	63	69	50	66
85 - 124	3	5	4	5	0
Total	100	100	100	100	100
Average pounds	44	50	46	35	44

*Percents and averages are rounded to the nearest whole number.

groups was 50 and 44 respectively, a difference of 6 pounds per acre. Data seem to indicate that the application of potash may be positively associated to some degree with yield--the higher the rate of potash used, the higher the yield.

Use of Pre- and Post-emergent Herbicides

As seen in Table XXXIV, 77 percent of the 81 cotton producers interviewed were using pre-emergent herbicides. Seventy-five percent of all producers were using diuron, and 1 percent each for CIPC and Trifluralin as their pre-emergent chemical. When highest and lowest production groups are compared, it is noted that a larger percent of the former (79) than of the latter (61) used pre-emergent herbicides. This seems to indicate some slight positive relation between use of pre-emergent herbicides and yield (i.e. those producing highest yields tended to use pre-emergent herbicides).

Data presented in Table XXXV show that 97 percent of the 81 cotton producers used no post-emergent herbicide. Of the 3 percent using post-emergent in 1965, all were in the below average yield groups. Observations since completion of the survey in 1966 would suggest that considerable use may have been made of post-emergent chemicals on 1966 and 1967 crops because of a severe labor shortage.

TABLE XXXIV

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO USE OF PRE-EMERGENT HERBICIDES BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Kind of pre-emergent used	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
None used	23	21	18	14	39
Diuron	75	74	77	86	61
CIPC	1	5	0	0	0
Trifluralin	1	0	5	0	0
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XXXV

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO USE OF POST-EMERGENT HERBICIDES BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Kind of post-emergent used	All farmers	Yield group (Pounds lint per acre) Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
None	97	100	100	95	94
DSMA + surfactant directive	2	0	0	0	6
DSMA + surfactant broadcast	1	0	0	5	0
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

Source of Seed

Forty-five percent of the 81 cotton producers interviewed reported they saved their own seed, 23 percent purchased seed from dealers and 22 percent listed the ginner as a source of seed (see Table XXXVI). When highest and lowest production groups are compared, it is seen that 58 percent of the former and only 39 percent of the latter saved and used at least some of their own seed. When middle groups are considered, it appears that no difference of large consequence may really exist. Other untabled data showed that 48 percent of the farmers interviewed (mostly in the above average yield groups) purchased certified seed, and 2 percent used registered seed.

Hilldrop Planting of Seed

Data in Table XXXVII show that 66 percent of the 50 cotton producers hilldropped 16-20 pounds of seed per acre, 30 percent hilldropped 21-30 pounds and 4 percent hilldropped 10-15 pounds per acre. The average pounds of seed used for the 50 producers was 20 pounds. Comparison of data for the highest and lowest groups show the cotton producers in the former group (20 pound average per acre) to be using a little more than the latter (18 pounds average per acre).

Drilling of Seed

Thirty-nine percent of the 31 cotton producers who drilled seed used 20-30 pounds and 32 percent used 31-35

TABLE XXXVI

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO SOURCE OF SEED USED BY 81 FARMERS OF LAUDERDALE COUNTY, TENNESSEE

Source of seed	All farmers Percent* (N=81)	Yield group (Pounds lint per acre) Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
Saved own	45	42	50	55	33
Dealer	23	21	32	9	33
Ginner	22	21	18	23	28
Dealer and saved own	9	16	0	9	6
Breeder	1	0	0	4	0
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XXXVII

RELATIONS OF 1965 COTTON YIELDS PRODUCED BY 50 FARMERS IN LAUDERDALE COUNTY, TENNESSEE, WHO HILLDROPPED SEED TO POUNDS OF SEED PLANTED PER ACRE AND AVERAGE POUNDS

Pounds of seed planted per acre	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=50)	Percent (N=11)	Percent (N=14)	Percent (N=16)	Percent (N=9)
10-15	4	0	0	6	11
16-20	66	73	50	63	78
21-30	30	27	50	31	11
Total	100	100	100	100	100
Average pounds seed used	20	20	22	20	18

*Percents and average pounds are rounded to the nearest whole number.

pounds as shown in Table XXXVIII. Twenty-six percent used rates ranging from 36 to 65 pounds. The average pounds of seed used for the 31 farmers was 31. When comparing the the highest and lowest yield group it is noted that a lower percentage (25 percent) used the 20-30 pound rate than did the latter (33 percent). For the 31-35 pound rate data show that in the highest yield group 50 percent were in this category; while only 34 percent in the lowest yield group planted this rate. Twenty-five percent of those in the highest yield group planted 36-65 pounds of seed per acre and of those in the lowest yield group 33 percent did so. Data indicates that drilling of 31-35 pounds of seed per acre as being an average amount needed to obtain higher yields.

Early Insecticide Program

Twenty-two percent of the 81 cotton producers interviewed reported the use of disyston for early insect control (Table XXXIX). There was little difference between yield groups except for a slight trend toward the use of more disyston for the highest yield group (32 percent) as compared to the lowest yield group (22 percent).

Other untabled data show that 90 percent of the cotton producers did not spray for early insects. Eight percent of those who sprayed did so at the two-leaf stage, the remainder at the 5 to 6-leaf stage. Thirty-two percent of those in

TABLE XXXVIII

RELATIONS OF 1965 COTTON YIELDS PRODUCED BY 31 FARMERS IN LAUDERDALE COUNTY, TENNESSEE WHO DRILLED SEED TO POUNDS OF SEED PLANTED PER ACRE AND AVERAGE POUNDS

Pounds of seed planted per acre	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=31)	Percent (N=8)	Percent (N=8)	Percent (N=6)	Percent (N=9)
10-15	3	0	12	0	0
16-19	0	0	0	0	0
20-30	39	25	50	50	33
31-35	32	50	13	33	34
36-45	13	12	13	17	11
46-55	10	13	12	0	11
56-65	3	0	0	0	11
Total	100	100	100	100	100
Average pounds seed used	31	35	30	31	30

*Percents and average pounds are rounded to the nearest whole number.

TABLE XXXIX

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO SYSTEMIC INSECTICIDE USED BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Systemic insecticide used	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
None used	78	68	82	82	78
Di-Syston	22	32	18	18	22
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

the highest yield group sprayed; while of those in the lowest yield group 22 percent sprayed. Those mentioning kind of insecticide used indicated DDI and toxaphene.

Number of Times Cultivated and Effectiveness of Weed Control

Eighty-two percent of the 81 cotton producers interviewed cultivated 4 or more times as shown in Table XL. When comparing the two above average groups and the two below average groups it is noted that a smaller percentage of the former cultivated four or more times than did the latter. While 21 percent of the highest yield group cultivated three times or less, considerably fewer of those in the lowest yield group (17 percent) did so. Further it is interesting to note that 5 percent of the highest yield group cultivated only one time.

Reference to data presented in Table XLI show that of all farmers interviewed, 47 percent reported the effectiveness of weed control as being good, 39 percent excellent and 14 percent fair. When comparing the considerably above and considerably below average groups, it is seen that, while 32 percent of the former rated their weed control just "fair," only 5 percent of the latter rated their control that low.

Use of Defoliant and Kind of Defoliant Used

Only 4 percent of the 81 cotton producers interviewed used defoliant. Of these, 14 percent were in the above

TABLE XL

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO NUMBER OF TIMES COTTON WAS CULTIVATED BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Number of times cultivated	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
One	1	5	0	0	0
Two	5	5	9	0	6
Three	12	11	18	9	11
Four or more	82	79	73	91	83
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XLI

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO JUDGMENT OF EFFECTIVENESS OF COTTON WEED CONTROL BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Effectiveness of weed control	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
Excellent	39	31	45	41	39
Good	47	37	50	45	56
Fair	14	32	5	14	5
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

average yield groups and 4 percent in the below average yield groups. Five percent of the highest yield group used defoliant as compared to none in the lowest yield group. Calcium cynamid was the material used.

Hour of Harvest

Table XLII shows that 37 percent of the 81 cotton producers interviewed harvested cotton before 9:00 A.M. and 63 percent harvested after 9:00 A.M. No trend concerning the hour of harvest was indicated for any of the yield groups.

Plans for Future Management of Cotton Enterprise

Data in Table XLIII show that 47 percent planned to continue to operate their cotton enterprise as before, 19 percent planned to add 1 new practice, 19 percent planned to add 2 practices, 4 percent at least 3, 2 percent planned to expand the cotton enterprise, and 1 percent planned to sell his allotment; while 8 percent gave no evidence of having any plans for the future at all.

It was notable that a higher percent of those in the highest yield group planned to continue the present plan (53) than was true for those in the lowest yield group (33 percent). While 26 percent of those in the considerably above average yield category planned to add 1 new practice, only 17 percent of those in the considerably below average yield group planned to add one. The reverse was true for those

TABLE XLII

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO HOUR OF HARVEST BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Hour of harvest	Yield group (Pounds lint per acre)				
	All farmers	Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
Before 9 a.m.	37	32	50	32	33
After 9 a.m.	63	68	50	68	67
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XLIII

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO PLANS FOR FUTURE MANAGEMENT OF COTTON ENTERPRISE BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Plans for future management	All farmers Percent* (N=81)	Yield group (Pounds lint per acre) Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
Had no evidence of any plan	8	5	14	4	11
To continue present plan	47	53	50	50	33
To add 1 new practice	19	26	23	9	17
To add 2 new practices	19	16	9	23	28
To add at least 3 new practices	4	0	0	14	0
To expand cotton enterprise	2	0	4	0	6
To quit raising cotton	1	0	0	0	5
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

planning to add 2 new practices since only 16 percent of the highest producers and 28 percent of the lowest reported such plans.

From this it might be inferred that farmers in the highest yield group were better satisfied with the plan they were using than were those in the lowest.

What Farmers Liked Most About Cotton Production

Reference to Table XLIV shows that 78 percent of the 81 cotton producers interviewed said income received was what they liked most about cotton production. Nine percent liked to watch cotton grow and 5 percent said that cotton crops were helpful in obtaining bank loans.

When the highest and lowest yield groups are compared, it is seen that fewer of the former (69 percent) than of the latter (83 percent) mentioned income received. Ten percent of the considerably above average grower reported liking the challenge of trying to get a good yield and the same percent liked machine harvesting and the selling of the cotton; while none in the lowest group mentioned these likes. The individual who didn't like cotton production, one of the lowest producers, planned to quit raising it the following year--as noted earlier in Table XLIII

What Farmers Disliked Most About Cotton Production

As seen in Table XLV, 25 percent of the farmers interviewed disliked soil preparation, planting and harvesting

TABLE XLIV

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO THINGS LIKED MOST ABOUT COTTON PRODUCTION MENTIONED BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Thing liked most about cotton production	All farmers Percent* (N=81)	Yield group (Pounds lint per acre) Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
Didn't like cotton production	1	0	0	0	5
Income received	78	69	86	73	83
To watch it grow	9	5	14	9	6
Bank loans can be based on cotton crops	5	6	0	14	0
Challenge to get good yield	3	10	0	4	0
Machine harvesting and selling it	2	10	0	0	0
Liked farming it	1	0	0	0	6
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XLV

RELATIONS OF COTTON YIELDS PRODUCED TO THINGS DISLIKED MOST ABOUT COTTON PRODUCTION MENTIONED BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Thing disliked most about cotton production	All farmers Percent* (N=81)	Yield group (Pounds lint per acre) Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
No dislike	1	0	0	0	5
Soil preparation, planting and harvesting problems	25	11	32	27	28
Small uncertain margin of profit	20	26	14	18	22
Labor involved and difficulty of getting adequate labor	16	10	27	18	6
Expense involved	12	16	5	18	11
Chopping	9	16	5	5	11
Government policies and control	9	16	4	9	6
Insect and weed control	6	5	9	5	6
Soil depletion	1	0	0	0	5
Sales procedure	1	0	4	0	0
Total	100	100	100	100	100

*Percents are rounded to the nearest whole number.

problems, 20 percent the small uncertain margin of profit, 16 percent the labor involved and difficulty of getting adequate labor, 12 percent the expense involved, 9 percent chopping, 9 percent governmental policies and control, 6 percent insect and weed control, and 1 percent each to soil depletion and sale procedure. One producer had no dislikes. The largest percent (26) of those in the highest yield group disliked the small uncertain margin of profit; while the largest percent (28) of those in the lowest group disliked soil preparation, planting and harvesting problems. Data seem to indicate less concern for cultural practices and greater attention to financial aspects for the highest yield group than for the lowest yield group.

Reasons Why Cotton Farmers Do Not Adopt Recommended Cotton Management Practices

Ninety-eight percent of the 81 cotton producers interviewed listed lack of adequate machinery and equipment as the first, second or third most important reasons why cotton farmers do not adopt recommended cotton management practices (see Table XLVI). Eighty-seven percent named lack of technical knowledge either first, second or third, 53 percent listed the cost of the practice outweighing the benefit, 31 percent suggested more rewarding activities claim owners' time and money, 25 percent didn't believe the practices sound, and 3 percent each had tried the practices and found them unsatisfactory, and felt allotments too small.

TABLE XLVI

PERCENTS OF 81 COTTON PRODUCERS IN LAUDERDALE COUNTY STATING VARIOUS REASONS WHY COTTON FARMERS DO NOT ADOPT RECOMMENDED COTTON MANAGEMENT PRACTICES (IN THE TOP 3)*

Reason why cotton farmers do not adopt recommended practices	All farmers Percent** (N=81)	Yield group (Pounds lint per acre) Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
Lack adequate machinery and equipment	98	99	91	100	100
Don't have the technical knowledge needed	87	84	86	91	89
The cost of the practices outweigh the benefits	53	58	40	64	50
More rewarding activities claim owners' time and money	31	37	19	28	45
Don't believe practices are sound	25	22	50	13	11
Have tried practices and found them unsatisfactory	3	0	0	4	5
Cotton allotments are too small	3	0	14	0	0

*Each farmer gave three reasons why cotton growers do not adopt recommended cotton production and marketing practices, therefore percents in the table total 300 percent instead of 100 percent.

**Percents are rounded to the nearest whole number.

Few differences of consequence seem to exist when yield groups are compared. However, fewer of those in the highest yield group (37 percent) than in the lowest (45 percent) felt that more rewarding activities than cotton farming claimed the resources of owners. A higher percentage (22) of those in the considerably above average group named "don't believe practices sound" as being a reason why cotton farmers do not adopt recommended practices than was true for the considerably below average group (11 percent). Further, it is interesting to note that the 9 percent of those named "have tried practices and found them unsatisfactory" as being a reason about equally divided between the two below average yield groups.

Sources of Advice Sought

Eighty-three percent of the 81 cotton producers interviewed sought advice from neighbors or friends who also were cotton growers, as shown in Table XLVII. Sixty-nine percent sought advice from seed, fertilizer, pesticide dealer or salesman, 57 percent from cotton ginners, 54 percent from the County or Assistant Agent, 27 percent from the equipment dealer, 27 percent from the banker or Production Credit (PCA) representative, 10 percent from cotton buyers, 7 percent from the Extension Cotton Specialist, 5 percent from a Farmers' Home Administration (FHA) representative, 4 percent from a Soil Conservation Service (SCS) representative, 3 percent

TABLE XLVII

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO ADVICE SOUGHT, FROM VARIOUS SOURCES, ABOUT COTTON MARKETING AND PRODUCTION BY 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Source of advice	All farmers	Yield group (Pounds lint per acre) Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
None sought	6	5	14	0	6
Neighbor or friend (cotton grower)	83	89	77	82	83
Seed fertilizer, pesticide dealer or salesman	69	58	68	68	83
Cotton ginner	57	58	45	68	56
County or assistant agent	54	47	59	68	39
Equipment dealer	27	21	32	18	39
Banker or PCA representative	27	5	23	27	56
Cotton buyer	10	11	5	14	11
Extension cotton specialist	7	5	9	5	11
FHA representative	5	0	14	5	0
SCS representative	4	0	0	5	11
ASCS representative	3	11	0	0	0
Vo-ag teacher	1	0	0	0	6

*Percents do not add up to totals since some owners mentioned more than one source.

from an Agricultural Stabilization and Conservation Service (ASCS) representative and 1 percent from a vocational agriculture (Vo-Ag) teacher. Six percent reportedly did not seek advice from any source.

When the highest and lowest yield groups are compared it may be seen that 89 percent of the highest yield group sought advice from neighbors or friends; while 83 percent of the lowest yield group also did so. At the same time, higher percents of the lowest than the highest used a seed, fertilizer and/or pesticide dealer or salesman (83 percent versus 58 percent); an equipment dealer (39 percent versus 21 percent), and a banker or P.C.A. representative (56 percent versus only 5 percent). Nearly equal percents of those in the highest and lowest yield groups sought the advice of the cotton ginner (58 versus 56, respectively) and cotton buyer (11 each). Forty-seven percent of those in the highest yield group sought information from the County or Assistant Agent as compared to 39 percent for those in the lowest yield group. Other sources of advice for the highest and lowest yield groups and the respective percents were: (1) Extension Cotton Specialist--5 and 11; (2) SCS representative--0 and 11; (3) ASCS representative--11 and 0, and (4) Vo-Ag teacher--0 and 6.

Source of Marketing and Production Information

Concerning other sources cotton producers turned to for information, Table XLVIII shows that 83 percent sought the farm magazines. Sixty-eight percent of all producers named television, 63 percent radio, 58 percent weekly newspapers, 48 percent University of Tennessee bulletins and publications, 46 percent daily newspapers, 36 percent farm meetings, 30 percent commercial (seed Co.) bulletins, 10 percent field days and tours, and 4 percent mentioned Extension newsletters.

Comparison of the data relating to the considerably above and considerably below average yield groups shows higher percents of the former than the latter who used all the sources mentioned excepting newsletters. All of the highest producers and 83 percent in the lowest yield group gave farm magazines as a source of advice--a difference of 17 percent. Other particularly large differences between the highest and lowest yield groups are shown for: (1) television--a difference of 18 percent; (2) radio--a difference of 24 percent; (3) daily newspapers--a difference of 14 percent, and (4) commercial (seed Co.) bulletins--a difference of 14 percent. This would seem to indicate a trend toward highest yields being associated with the use of the many sources of information available. Smaller differences in

TABLE XLVIII

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO SOURCES OF MARKETING AND PRODUCTION INFORMATION FOR 81 FARMERS IN LAUDERDALE COUNTY, TENNESSEE

Sources of information	All farmers	Yield group (Pounds lint per acre) Considerably above average 925-1250	Above average 790-924	Below average 730-789	Considerably below average 500-729
	Percent* (N=81)	Percent (N=19)	Percent (N=22)	Percent (N=22)	Percent (N=18)
None sought	4	0	5	5	6
Farm magazine	89	100	91	82	83
Television	68	79	59	73	61
Radio	63	74	59	68	50
Weekly newspaper	58	63	55	59	56
University bulletins and publications	48	53	50	45	44
Daily newspapers	46	53	45	45	39
Farm meetings	35	42	36	27	33
Commercial (seed co.) bulletins	30	42	32	18	28
Field days and tours	10	16	14	0	11
Newsletters	4	0	14	0	0

*Percents do not add up to totals since owners mentioned more than one source.

favor of the highest producers existed for: (1) weekly newspapers--a difference of 7 percent; (2) University of Tennessee bulletins and publications--a difference of 9 percent; (3) farm meetings--a difference of 9 percent, and (4) field days and tours--a difference of 5 percent.

CHAPTER V

SUMMARY

Approximately 60 percent of Lauderdale County's total farm income was derived from the sale of cotton in 1965. Gross cotton sales totaled about $8,000,000. Lauderdale County's three-year average yield per acre (1963-1965) was 626 pounds of lint. This was 41 pounds more per acre than the state average for the same period. Nevertheless, study of Lauderdale County cotton yield data showed wide variations in per acre cotton yields, ranging from a low of 450 pounds to a high of 1300 pounds of lint, and many producers were at the low end of the scale.

Since information was not available concerning current grower practices, Extension personnel had no definite way of knowing which practices needed emphasis if cotton producers were to be assisted in their efforts to grow more pounds of lint for higher net returns per acre.

The general purpose of this investigation was to establish a bench mark (based on a survey of the growers and their practices) that could be used as a basis for formulating a five-year plan of work and for planning further, more detailed research. A special interview schedule was developed and used to collect data concerning the characteristics of cotton producers, production practices followed and

factors influencing them to adopt recommended practices.

A random sample of 81 from the 1800 cotton producers in Lauderdale County was selected and interviewed for the study. Growers were divided into four main yield groups, namely: (1) considerably below average; (2) below average; (3) above average; and (4) considerably above average. Almost equal numbers of growers were in each of the four yield categories.

A review of related literature available disclosed that few relevant studies had been conducted. Findings in the present study tended to verify those reported from research done elsewhere.

Findings Related to Characteristics of Cotton Producers

With regard to findings related to the objective of characterizing cotton producers in the various yield groups considered in this study, a number of summary statements may be made.

Survey data comparing educational levels indicated that the average grade level of those in the highest yield group was 8.4 years compared to 9.5 years for the lowest yield group.

Seventy-five percent of the farmers interviewed were 45 years of age or over. The average age was 51.5 with both highest and lowest yield groups being slightly younger, 50.5 and 50.6, respectively.

Seventy percent of the 81 cotton producers surveyed were full-time farmers and 28 percent were part-time farmers; while 65 percent of the 81 cotton producers depended upon cotton as their major source of income.

Cotton was grown by the owner on 51 percent of all farms surveyed, worked on shares on 44 percent, and cash rented on the remaining 5 percent.

Eighty-four percent of the farmers in the highest yield group planted less than 15 acres of cotton in 1965; whereas only 49 percent in the lowest yield group were in this small an amount.

Seventy-three percent of the cotton producers interviewed reported using a mechanical harvester on one or more acres for an average of 12.6 acres. One hundred percent of the cotton was harvested mechanically by 33 percent of all producers, by 37 percent of those in the highest yield group, and by 33 percent of those in the lowest yield group. Of those who did no mechanical harvesting at all, 42 percent were in the highest and 17 percent were in the lowest yield groups.

Findings Related to Cotton Production Practices

The farmers in the highest yield group had a higher average practice diffusion rating (4.12) than that recorded for the lowest yield group (3.97).

More than two-thirds (68 percent) of the cotton producers interviewed, on the average, were in the "using" stage with regard to each of the 12 recommended cotton production practices. Of those in the highest yield group, 71 percent, on the average, were "using" each practice; while 64 percent of those in the lowest yield group were doing so.

Forty-one percent of the farmers interviewed reported following soil test recommendations in cotton fertilization, a larger percent (47) of the highest yield group that of the lowest yield group (39 percent) using the practice.

Fertilizer usage data showed that the highest yield group used an average of 450.3 total pounds of fertilizer per acre and the lowest yield group 391.4 pounds. More than one-half (52 percent) of those in the highest yield group used 80 or more pounds of nitrogen per acre as contrasted to 35 percent of those in the lowest yield group using that much.

An average of 47 pounds of phosphate was used by the cotton producers. Little difference was noted between highest and lowest yield groups.

The average total number of pounds of potash used by the highest and lowest yield groups were 50 and 44, respectively.

Seventy-seven percent of the cotton producers interviewed were using pre-emergent herbicides. When the highest and lowest production groups are compared, 79 percent of the

former and 61 percent of the latter were using the pre-emergent herbicides. Survey data show that 97 percent of the cotton producers interviewed were using no post-emergent herbicide at all.

Two-thirds (66 percent) of the 50 farmers who hill-dropped used 16-20 pounds of seed per acre and 30 percent used 21-30 pounds. The highest yield group averaged hill-dropping 20 pounds per acre compared to 18 pounds per acre for the lowest yield group.

One-half (50 percent) of the farmers in the highest yield group drilled 31-35 pounds of seed per acre; while only 34 percent in the lowest yield group planted this rate. The average rate for the former was 25 pounds of seed drilled and for the latter was 30 pounds.

Twenty-two percent of the farmers interviewed were using early insect control chemicals. More of the highest producers, about one-third, than the lowest, about one-fifth, used such chemicals.

Forty-seven percent of the farmers interviewed planned to continue the same production practices. Fifty-three percent of the highest yield group as compared to 33 percent for the lowest yield group planned to continue the same production practices. Similar percents of the highest and lowest yield groups (42 and 45, respectively) planned to add one or two new practices.

Findings Related to Factors Influencing Practice Adoption

Seventy-eight percent of the cotton producers interviewed said "income received" was what they liked most about cotton production. Sixty-nine percent of those in the highest yield group listed income as being most important; while 83 percent of the lowest yield group did so. Other reasons listed by both groups were, "like to watch it grow," "challenge to get high yield," "can be harvested with a machine," "gathering and selling" and "providing a diversion of interest."

Survey data relating what farmers disliked most about cotton production indicated that, 26 percent of the highest yield group disliked the small uncertain margin of profit; while 28 percent of the lowest yield group listed certain land preparation, planting and harvesting problems.

Ninety-eight percent of those interviewed listed the lack of adequate machinery and equipment as the reason why farmers do not adopt recommended cotton management practices. Eighty-seven percent named lack of technical knowledge, 53 percent felt the cost of the practices outweighed the benefits, 31 percent suggested the competition of more rewarding activities and 28 percent didn't believe the practices were sound or they had tried them and found them to be unsatisfactory.

Eighty-nine percent of the highest yield group and 83 percent of the lowest yield group sought advice from neighbors or friends. Seed, fertilizer and pesticide dealers had counciled with 58 percent of the highest and 83 percent of the lowest yield groups.

Nearly equal percents (58 and 56, respectively) in the highest and lowest yield groups sought advice from cotton ginners. The same was true for those seeking aid from Extension staff members since 52 percent of the highest and 50 percent of the lowest reported such assistance.

All (100 percent) of the farmers in the highest yield group and 83 percent of those in the lowest yield group used farm magazines as a source of information on cotton production and marketing. Sources such as television, radio, newspaper, university publications, farm meetings, commercial bulletins and field days, in that order, also were popular, larger percentages always being reported by those in the highest yield group than by those in the lowest.

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BIBLIOGRAPHY

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APPENDIX

APPENDIX

THE AGRICULTURAL EXTENSION SERVICE, UNIVERSITY OF TENNESSEE
Knoxville, Tennessee

TENNESSEE COTTON PRODUCTION SURVEY

INTRODUCTION: I am helping with a survey that is being made by the University of Tennessee. The purpose is to obtain information to use in planning programs helpful to cotton growers. The answers you give will be added to those given by other cotton growers who are being interviewed in this county and other parts of the state to get a complete picture of the cotton situation. Could I have a little of your time to go over these questions?

1. About how many acres do you have in your farm(s)? Cropland? Improved pasture? Unimproved pasture? Woodland? Other land?
   a. Total (b + c + d + e + f) land in farm(s) _____Acres
   b. Cropland _____ Acres
   c. Improved pasture _____ Acres
   d. Unimproved pasture _____ Acres (Check to be sure
   e. Woodland _____ Acres items add up to
   f. Other land _____ Acres total in a)

2. What was your cotton allotment last year? _____ Acres

3. How many acres of cotton did you plant last year? ___Acres

4. TO THE INTERVIEWER: If respondent planted less than allotted, ask him "why?" _____
   _____

5. How many acres of cotton did you harvest last year?
   _____ Acres. Per acre lint yield? _____

6. How much of the harvested acreage was __Owned, ___ Cash rented, ___ Shared?

7. Major occupation of the respondent
   a. Full-time farmer _____ e. Wage earner _____
   b. Part-time farmer _____ f. Housewife or widow ___
   c. Business (specify) _____ g. Retired _____
   d. Professional (specify) _____ h. Other (specify) _____

8. Is cotton your major source of income?
   a. Yes _____ b. No _____

9. If your answer to question #8 above is NO, what is your major source of income? _____

10. Would you please complete this sentence? (Hand respondent card) "The thing I like most about cotton production is _____

_____

TO THE INTERVIEWER: If the respondent mentions more than one thing, write down all of them and ask him "which is most important?" Then underscore it.

11. Would you please complete this sentence? (Hand respondent card) "The thing I dislike most about cotton production is _____

_____

TO THE INTERVIEWER: If the respondent mentions more than one thing, write down all of them, and ask him "which is most important?" Then underscore it.

TO THE INTERVIEWER: The purpose of the next question is to find out if the respondent--
(1) is aware of certain recommended practices
(2) is interested in using them
(3) has tried them
(4) is still using them, or will use them when the need arises
(5) and his reason for never trying the practices, or for not using them after trying them.

INTERVIEWER hand each card to respondent separately after saying "I have here a set of cards. On each card is a cotton production practice. Would you read each card and tell me whether or not you have tried that practice?" (Check Yes or No in the "Has Tried" column below.)

In his reply, the respondent may also answer the other four points. If not, INTERVIEWER WILL ASK APPROPRIATE QUESTIONS TO OBTAIN THE ANSWERS. Check in appropriate columns below.

12. Cotton Production Practices	Read or heard of		Interested		Plans to try		Has tried		Is using	
	Yes (a)	No (b)	Yes (c)	No (d)	Yes (e)	No (f)	Yes (g)	No (h)	Yes (i)	No (j)
(1) Planted a cotton variety or varieties recommended last year (as in EC 643 or Performance Trials--that year)										

i. Reasons for never trying practice OR not using after trying _____

	Read or heard of		Interested		Plans to try		Has tried		Is using	
	Yes (a)	No (b)	Yes (c)	No (d)	Yes (e)	No (f)	Yes (g)	No (h)	Yes (i)	No (j)
(2) Planted between April 20 and May 20 last year (see Ext. Pub. 432)										

i. Reasons for never trying practice OR not using it after trying

---

(3) Used the recommended seeding rate and procedure for the kind of seed used

(1. "hilldrop" 20 lbs. of machine delinted seed, 2. "hilldrop" 10-12 lbs. of acid delinted seed, or 3. drill 30-40 lbs. of machine delinted seed, 4. "hilltop" 20 lbs. of machine delinted seed or 5. drill 35-50 lbs. undelinted seed).

i. Reasons for never trying practice OR not using it after trying

---

(4) Used recommended material to help control seedling diseases (PCNB 10% + Captan 10%)

i. Reasons for never trying practice OR not using it after trying

---

(5) Used recommended procedure to help control seedling diseases (hopper box or furrow)

i. Reasons for never trying practice OR not using it after trying

---

(6) Fertilized cotton land according to soil test recommendations (lime, fertilizer and boron)

i. Reasons for never trying practice OR not using it after trying

---

(7) Effectively controlled weeds last year by using recommended procedures (see EC 639)

Read or heard of		Interested		Plans to try		Has tried		Is using	
Yes (a)	No (b)	Yes (c)	No (d)	Yes (e)	No (f)	Yes (g)	No (h)	Yes (i)	No (j)

i. Reasons for never trying practice OR not using it after trying

---

(8) Effectively controlled insects last year by using recommended procedures (see Ext. Pub. 387)

i. Reasons for never trying practice OR not using it after trying

---

(9) Made decisions concerning use of insecticides based on actual field counts (see Ext. Pub. 387)

i. Reasons for never trying practice OR not using it after trying

---

(10) Harvested only dry (roughly 8-10% moisture) cotton free from dew and/or rain

i. Reasons for never trying practice OR not using it after trying

---

	Read or heard of		Inter-ested		Plans to try		Has tried		Is using	
	Yes (a)	No (b)	Yes (c)	No (d)	Yes (e)	No (f)	Yes (g)	No (h)	Yes (i)	No (j)
(11) Had cotton classified by the USDA Classing Office										

i. Reasons for never trying practice OR not using it after trying

_____

(12) Getting the advice of professionals in the area of cotton production and marketing										

i. Reasons for never trying practice OR not using it after trying

_____

13. During the past year have you talked to anyone about your cotton production and marketing?
    a. Yes _____ b. No _____

TO THE INTERVIEWER: If No, skip to Question #15. If YES, ask Question #14 first.

14. With whom have you talked? (Check one or more of the following. If respondent gives names, write them at the side and check list later.)
    a. County or assistant agent _____
    b. Extension cotton specialist _____
    c. Cotton ginner _____
    d. Cotton buyer _____
    e. Vo-Ag teacher _____
    f. SCS representative _____
    g. FHA representative _____
    h. Equipment dealer _____
    i. Seed, fertilizer or pesticide dealer or salesman _____
    j. Banker or PCA representative _____
    k. Neighbor or friend (cotton grower) _____
    l. Other (specify) _____

15. From which of the following sources did you receive useful information concerning your cotton production and marketing last year?
    a. Univ. bulletins and publications _____
    b. Commercial (seed company) bulletins _____
    c. Farm magazines _____
    d. Daily newspapers _____
    e. Weekly newspapers _____
    f. Radio _____
    g. Television _____
    h. Farm meetings _____
    i. Field days and tours _____
    j. Newsletters _____

16. What was the highest grade level that you completed? Circle one.

0	1 2 3 4 5 6 7 8	9 10 11 12	1 2 3 4	Bachelor's	Master's	Doctor's
None	Grade Sch.	H. S.	College Underg.	Degree	Degree	Degree

17. Age of respondent?
    a. Under 25 _____
    b. 25 - 34 _____
    c. 35 - 44 _____
    d. 45 - 54 _____
    e. 55 - 64 _____
    f. 65 - 74 _____
    g. 75 or more _____

18. What plans do you have for the future of your cotton enterprise? Expansion? (Including use of the 12 production practices listed plus others mentioned)

_____

_____

19. (If respondent says he has no plans in question #18 above, ask "why not?").

_____

_____

20. How many weeks ahead of planting did you begin seedbed preparation last year? _____Weeks

21. Were stalks shredded before you prepared your land?
    Yes _____ No _____

22. Did you prepare a well-pulverized, firm smooth seedbed?
    Yes _____ No _____

23. What size planter did you use? ____ One-row, ____ Two-row, ____ Four-row, ____ Six-row.

24. Did you periodically check the adjustment of your planter to assure a uniform row width?
_____ Yes _____ No.

25. From whom did you get your seed? _____Ginner, _____ Dealer, _____ Farmer, _____ Other (specify) _____

26. Was the seed you planted _____Certified? _____ Registered? (check if appropriate).

27. How did you plant? (how much seed per acre and kind of seed and procedure used) Lbs. seed per acre _____

Kind of seed _____

Procedure used _____

28. About how deep did you generally plant your cotton seed?
_____ 1/2", _____ 3/4", _____ 1", _____ Other (specify)
_____

29. In the main, of what texture does your cotton land tend to be? (check one) a. _____ Sandy soil, b. Loamy soil, c. _____ Clay soil.

30. Have you ever had the soil on your cotton land tested?
_____ Yes _____ No.

31. (If Yes to question #30) When? _____ (Most recent year)

32. (If Yes to question #30) By whom was it done? _____ U.T., _____Federal Chemical Co., _____ U. S. Soil Testing, _____ Other (specify) _____

33. How much fertilizer did you apply?
_____ Grade _____ Lbs. per acre
_____ Grade _____ Lbs. per acre
_____ Grade _____ Lbs. per acre

34. (If Yes to question #30) Was the p^H _____ under 6.0 _____ above 6.0?

35. Did you use boron? _____ Yes _____ No.

36. How did you control weeds last year? Please check appropriate sequence)

a. _____ Used a pre-emergent herbicide (If so, which one or ones?)
(1) ___ Diuron (Karmex)
(2) ___ DCPA (Dacthal)
(3) ___ Prometryne (Caparol)
(4) ___ CIPC
(5) ___ Other (specify) _____.

b. _____ Used a post-emergent herbicide (If so, which one or ones?)
(1) ___ Herbicidal oil
(2) ___ DSMA + surfactant (___Directive ___Broadcast)
(3) ___ Diuron + surfactant
(4) ___ Prometryne + surfactant
(5) ___ Other (specify) _____.

c. _____ Cultivated (If so, how many times?)

(1) ___ One
(2) ___ Two
(3) ___ Three
(4) ___ Four or more.

d. _____ Used "flame burner (If so, how many times?)

(1) ___ One
(2) ___ Two
(3) ___ Three
(4) ___ Four or more

37. How effective would you say your weed control was last year? _____Excellent, _____Good, _____Fair, _____Poor.

38. How did you control insects last year? (Please check appropriate sequence)

a. _____ Used a systemic insecticide at planting time (If so, which?)
(1) ___ Di-Syston
(2) ___ Thimet
(3) ___ Other (specify) _____.

b. _____Sprayed at the two-leaf stage of plant growth (If so, what did you use?)

_____

39. How many times did you poison insects last year? _____

40. Which insect or insects gave you the greatest problem?

_____

41. What insecticide(s) did you use? _____

42. How did you decide when to use insecticides?

_____

43. How effective was your insect control last year?
_____ Excellent, _____ Good, _____ Fair, _____ Poor.

44. How much of your harvested acreage of cotton was harvested mechanically? _____%

45. Do you own a mechanical picker? _____ Yes _____ No
(If Yes, how many row? _____ ROWS.)

46. If you own a picker (Yes in question #45), how many acres were harvested with it last year? _____ ACRES

47. If you harvested any acreage mechanically last year, did you use a defoliant? _____ Yes _____ No.

48. If you used a defoliant, what did you use?

_____

49. What time of day did you usually start to harvest?
_____ Before 9 A.M. _____ After 9 A.M.

50. How much turn-row space did you leave? _____ FEET

51. We have listed on these cards some reasons why cotton growers sometimes do not adopt recommended cotton production and marketing practices. (Hand respondent set of cards). Now, here is what we would like you to do:

a. Please look through all cards, read each one; and pick out the 3 cards that show why you believe cotton growers do not use better production practices. After you have selected 3, please hand me the rest.

b. Now, these 3 reasons are not of the same importance; so please go through them and decide which one is probably of most importance. Please give me the number on the back of the card. Also, please do this with the other 2 cards.

Rank Card Number	1	2	3

c. Are there any other reasons why you believe cotton growers do not adopt recommended cotton production and marketing practices? _____

_____

52. (OPTIONAL) Approximately what was your total gross family income last year? (Hand card to respondent and ask him to select a category.)

a. 0-1,999	_____	i. 16,000-17,999	_____
b. 2,000- 3,999	_____	j. 18,000-19,999	_____
c. 4,000- 5,999	_____	k. 20,000-21,999	_____
d. 6,000- 7,999	_____	l. 22,000-23,999	_____
e. 8,000- 9,999	_____	m. 24,000-25,999	_____
f. 10,000-11,999	_____	n. 26,000-29,999	_____
g. 12,000-13,999	_____	o. 30,000-49,999	_____
h. 14,000-15,999	_____	p. 50,000-99,999	_____

Name of Respondent_____

Address _____ County_____ Number_____

Date _____ Tenure Status _____

NAME OF RESPONDENT_____

NUMBER_____

QUESTIONS FOR THE INTERVIEWER TO ANSWER:

53. All people do not adopt practices at the same rate or time. About where would you place the respondent with respect to adopting new recommended cotton production and management practices?
    a. _____Among the first few
    b. _____Soon after the first few
    c. _____Sooner than average
    d. _____A little later than most
    e. _____Among the last few.

54. Is the respondent

    a. _____Man? b. _____Woman?

55. Interest of respondent in improving cotton production and marketing? (In interviewer's judgment)
    a. _____Very interested
    b. _____Somewhat interested
    c. _____Indifferent
    d. _____Not interested.

56. Respondent's attitude toward the survey? (In interviewer's judgment)
    a. _____Friendly
    b. _____Somewhat friendly
    c. _____Indifferent
    d. _____Antagonistic.

57. Should the respondent pay more attention to his cotton production and marketing?

    a. _____ Yes. b. _____ No. c._____ Uncertain.

58. How well do you know the respondent?
    a. _____Very well
    b. _____Fairly well
    c. _____Not very well
    d. _____Not at all.

VITA

I was born August 29, 1927. My parents are Robert T. and Ellene C. Peal. I attended Hillcrest Elementary School and Dyersburg High School at Dyersburg, Tennessee.

My undergraduate study began at The University of Tennessee Junior College, Martin, Tennessee. I received a B. S. degree in Agriculture with a major in Agricultural Education from Mississippi State College, Starkville, Mississippi in 1951. My graduate study was at The University of Tennessee, Knoxville, Tennessee.

I was raised on the farm and was active in 4-H Club work. I have been employed as an Assistant Agricultural Extension Agent in Lauderdale County, Tennessee for 17 years. I am a Methodist, the Church treasurer, a Rotarian and active in civic programs in our community. I am married to the former Martha Ann Morris and we have one daughter, Melinda.