A STUDY OF

COTTON PLANTING SEED IN CENTRAL OKLAHOMA

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By

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PREFACE

Many different varieties of cotton are produced in central Oklahoma. The purpose of this study is to determine the volume of the many varieties, the basis for the selection of varieties, and the origin of specific varieties. It is hoped that the information in this study will help to provide basic background material for further study and improvement of cotton marketing and production.

ACKNOWLEDGMENTS

The writer wishes to thank the supervisor of the State Seed Laboratory, and the farmers and ginners who earnestly cooperated in furnishing data for this study. The writer is greatly indebted to the Department of Agricultural Economics, Oklahoma A. & M. College, and in particular to Dr. Adlowe L. Larson, Mr. John D. Campbell, and Mr. Raymond B. Marshall whose material help and assistance made this study possible.

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INTRODUCTION

Cotton is one of the major crops produced in central Oklahoma. A great number of varieties of cotton planting seed are planted. Little information is available as to why varieties are planted by producers, and where the seed originates. Examination of the agricultural history of Oklahoma and the United States, makes it possible to trace the chain of events that have led to the present situation in cotton production.

HISTORY AND BACKGROUND

In the early history of cotton production in the United States, the number of varieties were not much of a problem. All the work from planting until spinning into cloth was done by hand, and the quality differences among varieties were not considered important.

In the middle part of the 18th century several important changes took place. The application of power to textile manufacturing coupled with the invention of the cotton gin by Eli Whitney resulted in an enormous demand for cotton. Cotton production expanded westward through the southern states.[1/] The spread of the cotton boll weevil, beginning in Texas in 1892, provided a challenge. By 1915, the cotton boll weevil had spread over a great portion of the cotton belt, and was inflicting tremendous damage.[2/] Seed Breeders began trying to develop an earlier maturing variety of cotton that would have a chance to mature before the boll weevil attack. When cotton became susceptible to plant diseases such as wilt, seed breeders again attempted to develop a variety that would be resistant. As spinning and

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1/ Gove Hambidge, "Farmers in a Changing World--A Summary," United States Department of Agriculture, Yearbook of Agriculture 1940, pp. 13-19.

2/ F. W. Farley, "Growth of the Beef-Cattle Industry in the South, United States Department of Agriculture, Yearbook of Agriculture 1917, pp. 329-331.

weaving equipment were improved, the manufacturers became conscious of the differences existing in cotton and began to demand certain qualities, or that is, in their buying began to select certain qualities. Breeders began trying to develop varieties with higher yields and longer staple, and in later years have been considering fiber properties such as strength and fineness.

The over-all result has been the production of several hundred varieties of cotton in the cotton belt. In order to maintain a high degree of uniformity in a stock, selection must be maintained. The problem is further complicated by the fact that varieties cross readily and become mixed in the ginning process.3/ Varieties bred for certain properties or qualities are mixed with other varieties bred for different purposes. Thus a selected variety soon becomes mixed and lost with other varieties, and the lint which may be of a desired quality loses its identity before reaching the mills. Then the mill finding they have a superior quality of cotton would have no means of locating more cotton of the same approximate quality.

Cotton Planting Seed Improvement Programs

Some of the more important cotton planting seed improvement programs have been the "One Variety Program," and the program that was administered through the War Food Administration during the war years.

A "One Variety Cotton Community" is a group of farmers organized for the purpose of standardizing production on a single improved variety. Such a community theoretically helps to eliminate cross-pollination, to maintain variety purity of a single improved variety, to provide growers with a suitable plan for growing and distributing planting seed of known origin

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3/ O. F. Cook, "One Variety Cotton Communities," United States Department of Agriculture, Bulletin 1111, p. 19.

and purity at a reasonable cost, to obtain more uniform staple length, and to gain promptly the full benefits from growing improved varieties.4/

The advantages of cotton improvement in "One Variety Communities" were first pointed out by O. F. Cook of the Bureau of Plant Industry in 1909, and in an outline program of "Cotton Improvement on a Community Basis," was published in 1911.5/ The plan was first demonstrated by voluntary cooperation of farmers in irrigated valleys of the Southwest (Arizona and California), and cotton planting seed sales were successful enough that, in 1925, the State Legislature of California passed laws prohibiting the planting of more than one variety in certain areas.6/

There were 2,194 one-variety communities reported in various states of development in 1944. Of the approximately 750 cotton producing counties of the United States, "One Variety" production had been reported in one or more communities in 581 counties.7/ However, since some confusion has existed as to differences between the "One Variety" program and the "Smith-Doxey" program (a program providing for cotton classing and market news service), it has been difficult to determine accurately the number of "One Variety Communities."

A list of "One Variety Communities" compiled by the Oklahoma Extension Service indicates that nine communities were reported in the area under study in 1948. Five of the nine communities were visited, and none reported

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4/ O. F. Cook, "Cotton Improvement on a Community Basis," United States Department of Agriculture, Yearbook of Agriculture 1911, pp. 123-130.

5/ Ibid., pp. 397-410.

6/ McKeever, H. G., "Community Production of Acala Cotton in the Coachella Valley of California," United States Department of Agriculture, Bulletin 1467, pp. 29-36.

7/ "Research Achievement Sheet," Agricultural Research Administration, United States Department of Agriculture, Issued September 14, 1945.

that they were active as a "One Variety Community." Differences in opinion as to what constitutes a "one variety community" may be a factor causing variation or lack of agreement in the number of "communities" reported.

There may be some question as to what constitutes improved cotton. Improved cotton is that cotton which has been developed into a "breed of high-yielding strains of medium-length staple, good spinning quality, and equal adaptation to wilt or non-wilt soils."[8/]

In 1943, the United States began a cotton planting seed improvement program to be administered by the Cotton and Fiber Branch of the Office of Distribution, War Food Administration. The objectives of the program were: (1) to encourage the growth of a single improved variety of cotton by all growers in an area where growing conditions were uniform so as to improve cotton, (2) to increase yields per acre, and (3) to standardize production by the elimination of a large number of inferior varieties. Under this program the War Food Administration was authorized to make payments to grower associations in connection with the normal production of cotton.[9/]

In setting up the program, a grower committee and a technical committee were appointed by a four man State board. These committees divided the state into zones, and designated a variety of cotton for each zone. Where a zone was irregular and definitely needed an additional variety, a subzone was set up and an additional variety designated for it. In Oklahoma, every zone had a subzone; therefore, two varieties were designated for each zone

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8/ E. E. Berkley and H. D. Barker, "What makes Cotton Good?" United States Department of Agriculture, Yearbook of Agriculture 1943-47, pp. 368c-368e, 369-372.

9/ Clarence E. Pike, "Cotton Seed Improvement Associations," United States Department of Agriculture, Farm Credit Administration, Circular C-130, April, 1947, p. 7.

(Figures 1-3). The Committees also functioned to set up a State Association to handle subsidy claims and other business in the participating state.[10/]

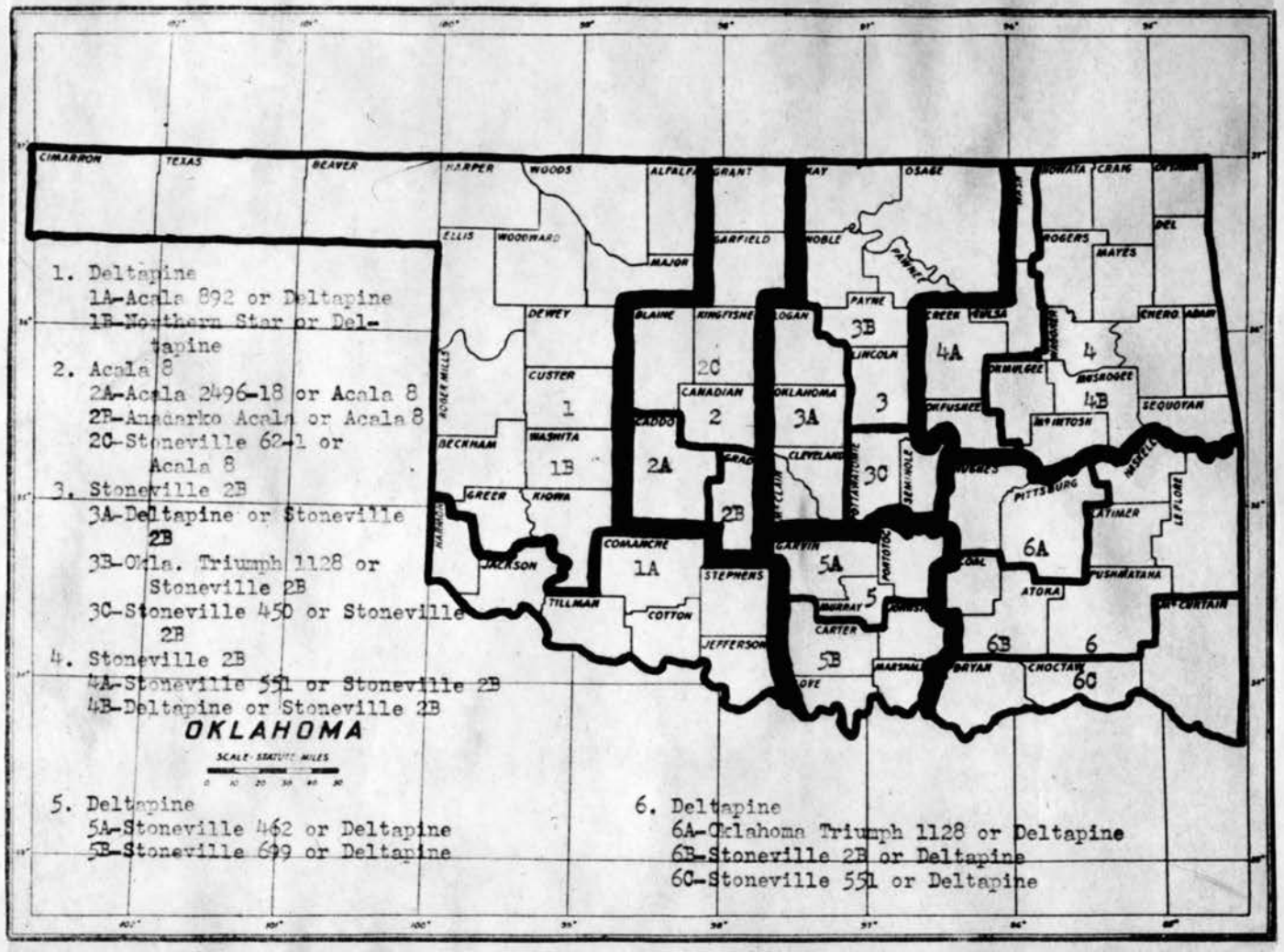
Subsidy payments, under the program, were to be made on two classes of seed: Class A Seed which was seed produced by a foundation breeder and was approved by the Technical Committee; Class B Seed which was seed that was approved by the Technical Committee and which was grown in a certain named year from seed acquired from the foundation breeder between certain specified dates.[11/]

The payment rates provided for under the program in 1943 were $3.00 per hundred pounds for Class A Seed, and $1.50 per hundred pounds for Class B Seed. Those payments had to be made to the State Association. Before the Association could be in a position to claim such payments, it had to show evidence that payments had been made to the grower at the rate of not less than $2.25 per hundred pounds for Class A Seed, and $1.10 per hundred pounds for Class B Seed. The State Association retained 25 percent of the original payments made by the program to be used for the creation of a revolving fund. This fund was for the purpose of paying employees salaries, and for other expenses connected with the operation of an office. The grower could make claim for payment as soon as the planting seed was received, but before the State Association could make claim to the United States Department of Agriculture, it had to be certain that the grower had complied with all regulations.

10/ Grover B. Hill, "Cotton Improvement Planting Program," United States Department of Agriculture, Agricultural Marketing Administration, Cotton Branch, Form sp-100 for the fiscal year 1943, pp. 1-3.

11/ Foundation Breeder is a grower of seed of a certain specified variety or strain who is recognized as the originating source of such variety or strain.

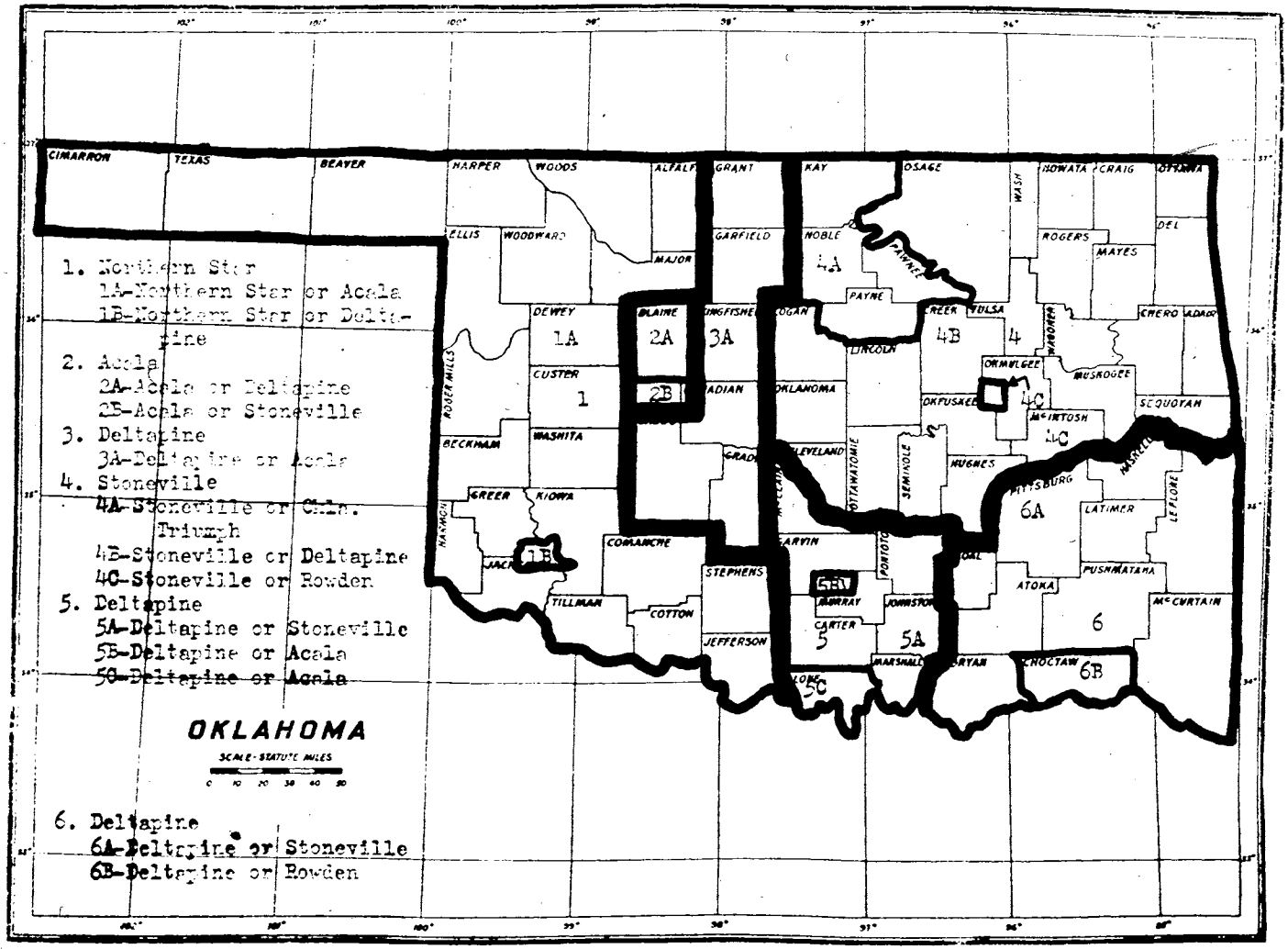
COTTON PLANTING SEED VARIETIES AND ZONES FOR
OKLAHOMA AS ESTABLISHED BY THE COTTON PLANTING SEED IMPROVEMENT PROGRAM FOR 1943



SOURCE: Cotton Planting Seed Improvement Program for 1943.

Figure 1.

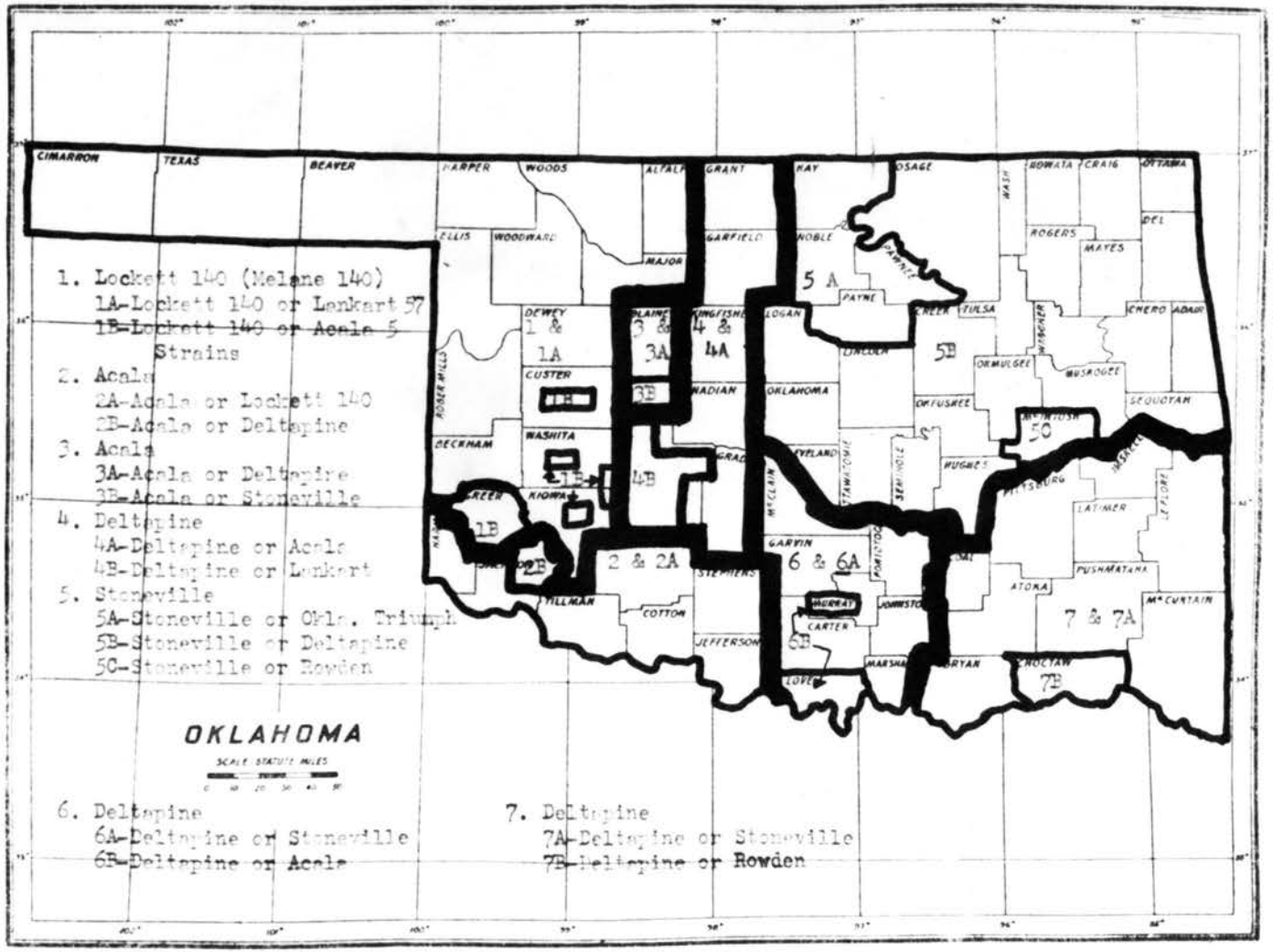
COTTON PLANTING SEED VARIETIES AND ZONES FOR
OKLAHOMA AS ESTABLISHED BY THE COTTON PLANTING SEED IMPROVEMENT PROGRAM FOR 1944



SOURCE: Cotton Planting Seed Improvement Program for 1944.

Figure 2.

COTTON PLANTING SEED VARIETIES AND ZONES FOR
OKLAHOMA AS ESTABLISHED BY THE COTTON PLANTING SEED IMPROVEMENT PROGRAM FOR 1945



SOURCE: Cotton Planting Seed Improvement Program for 1945.

Figure 3.

The communities under the program were organized on a "gin basis," because the ginner was considered a key man in the cotton community and interested in cotton quality improvement. After a community organization had been set up, it was necessary that one of the varieties designated for the community be selected, and the seed be purchased only from approved sources. The zone boundaries and varieties set up by the committees varied somewhat for each year (Figures 1-3).

The main accomplishment of the program was the progress made in improving the varieties planted (improvement in quality) during the three year period of operation (1943-45). The Oklahoma Crop Improvement Association through an agreement with the Department of Agriculture handled most of the administrative details (including the financing, subsidy payments, etc.). When the program was discontinued in 1945, all accounts were closed, and the remaining operating funds derived from the handling of seed were retained by the Oklahoma Crop Improvement Association. Some work is being carried on, however, by the Oklahoma Crop Improvement Association which actually administered the above program in Oklahoma.[12/]

Area of Study

The area covered by this study is referred to as the "Project Area." Included in the Project Area are four "Type of Farming Areas."[13/] (Figure 4). The main cotton producing sections of these areas were studied.

These "Type of Farming Areas" are described as follows: Area 3--Cash grain, general farming, some dairy and poultry; 3A--wooded area of sandy

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12/ Clarence E. Pike, Op. cit., p. 11.

13/ Peter Nelson, "Geographical Variability in Type of Farming in Oklahoma," Current Farm Economics, Vol. IX No. 1, (February, 1946), pp. 3-14.

LOCATION OF PROJECT AREA

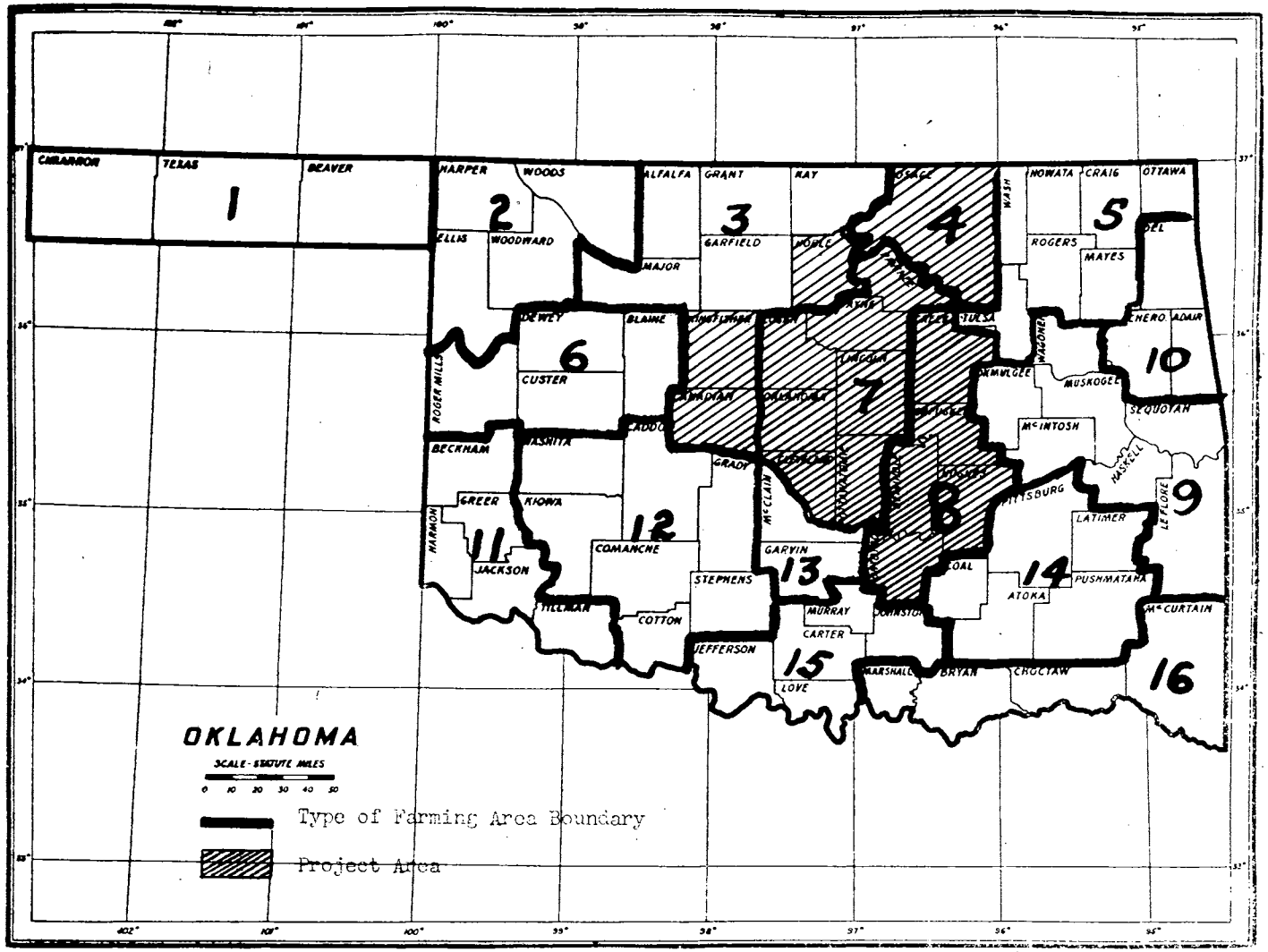


Figure 4.

soil, general farming, some cotton produced in this strip; Area 4--range livestock, some general farming; Area 7--general farming, cotton, livestock, dairy and poultry; and Area 8--cotton, general farming, self sufficing, dairy. (An area of generally poor soil, except on small bottoms) (Figure 5)

Temperature and Rainfall

The average temperature in the Project Area ranged from 36.6° F. to 40.4° F. in January and from 80.7° F. to 82.9° F. in July. The minimum temperature recorded was -26.0° F. and the maximum was 118.0° F. The date of the last killing frost ranges from March 26 in the south to April 9 in the north. The date of the first killing frost ranges from October 26 in the north to November 8 in the south. (Appendix Table I)

The length of growing season in the Project Area ranges from 203 to 225 days, an average of about 214 growing days.

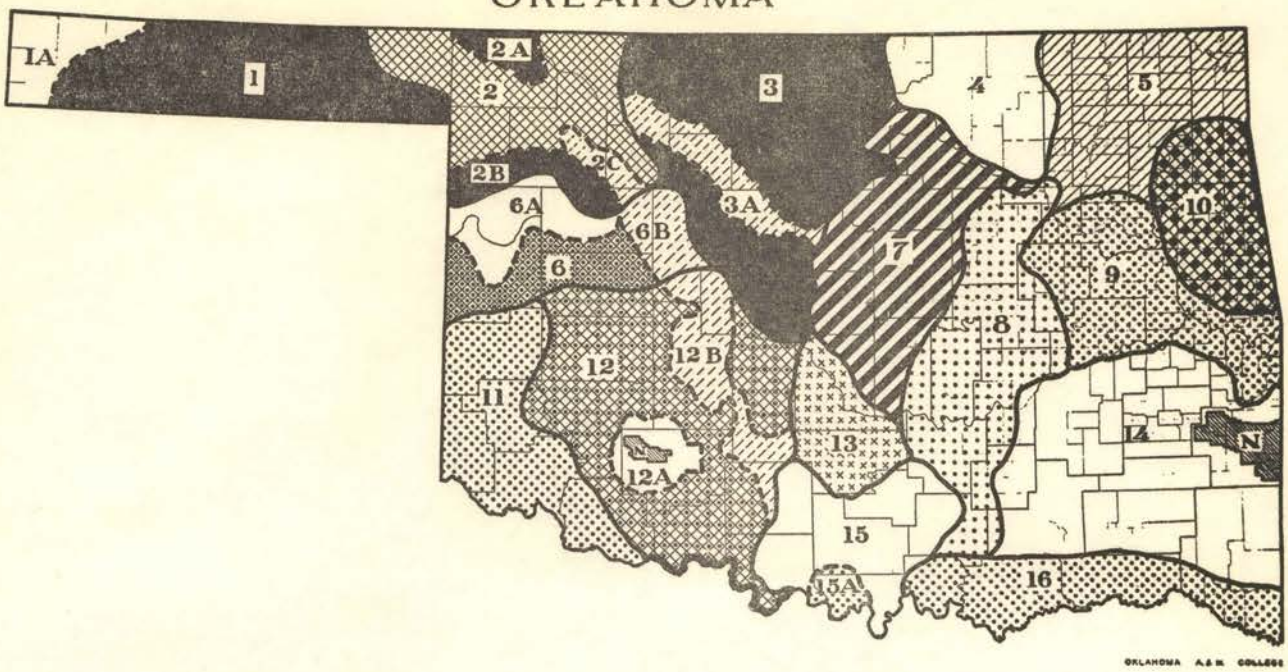
The annual rainfall over the period in which records have been kept ranges from 27.95 inches to 37.83 inches. The greatest precipitation occurs during the months of April and May and the least amount during the month of January.

Major Crops

The major crops in the Project Area have been cotton, wheat, corn, oats, grain sorghums, and hay.

During the last decade and a half, the percentage of the crop land in cotton has decreased steadily. Corn acreage also declined except for the five year period, 1935-40, when a slight increase occurred. Some of the decrease in the cotton acreage of the area is reflected in the increases in the other major crops and in the decrease of the percentage of land in crops. The land in crops decreased; although, "all land in farms" increased.

PRELIMINARY TYPE-OF-FARMING MAP OF OKLAHOMA



Area Description of Counties by Type-of-Farming Areas in Oklahoma

Area 1: Beaver, Cimarron, Texas	1. Cash grain and livestock 1A Largely range livestock
Area 2: Ellis, Harper, Woods, Woodward	2. Somewhat broken topography—some small grains, feed crops, livestock. 2A Cash wheat primarily. 2B. Cash wheat primarily. 2C. Sandy area, general farming
***Area 3:** Alfalfa, Canadian, Garfield, Grant, Kay, Kingfisher, Major, Noble	3. Cash grain, general farming. 3A. A wooded area of sandy soil, general farming, some cotton produced on this strip
***Area 4:** Osage	4. Range livestock—some general farming
Area 5: Craig, Mayes, Nowata, Ottawa, Rogers, Tulsa, Washington	5. General farming, livestock, dairy, poultry and self-sufficing
Area 10: Blaine, Custer, Dewey, Roger Mills	6. Cash grain, general farming, cotton, livestock 6A Rough sandy area, scarcely any farming, some range livestock 6B Wooded area, general farming, and cotton
***Area 7:** Cleveland, Lincoln, Logan, Oklahoma, Pawnee, Payne, Pottawatomie	7. General farming, cotton, livestock, dairy, and poultry
***Area 8** Creek, Hughes, Okfuskee, Pontotoc, Seminole	8. Cotton, general farming, self-sufficing, dairy. (An area of generally poor soil, except on small bottoms)
Area 9: Haskell, LeFlore, McIntosh, Muskogee, Okmulgee, Sequoyah, Wagoner	9. Cotton, some dairy, potatoes, commercial vegetables, self-sufficing
Aera 10: Adair, Cherokee, Delaware	10. Some fruit, general farming, dairy and poultry, self-sufficing (rough wooded land)
Area 11: Backham, Greer, Harmon, Jackson, Tillman	11. Cotton, supplemented with cash grain, livestock dairy and poultry
Area 12: Caddo, Comanche, Cotton, Grady, Kiowa, Stephens, Washita	12. Cotton, cash grain, livestock, some dairy and poultry 12A Range livestock 12B Sandy, wooded section, cotton, general farming
Area 13: Garvin, McClain	13. Cotton, livestock, general farming, broomcorn
Area 14: Atoka, Coal, Latimer, Pittsburg, Pushmataha	14. Cotton, self-sufficing, livestock (rough, mountain and wooded area)
Area 15: Carter, Jefferson, Johnston, Love, Murray	15. Range livestock, general farming, self-sufficicing 15A Cotton
Area 16: Bryan, Choctaw, Marshall, McCurtain	16. Cotton, general farming

* Project Area

Figure 5

(Table I, Figure6) The decrease in the acreage of cotton is more understandable when labor requirements and yields per acre were considered.

TABLE I

PERCENTAGE OF ALL LAND IN FARMS IN PROJECT AREA BY DESIGNATED CLASSIFICATION, 1930-45*

Land Classification	1930	1935	1940	1945
All land in farms (Acres)	9,950,636	10,158,472	10,043,483	10,529,199
Proportion of Land in Farms (percent)	86.7	74.9	82.5	89.7
Land in Crops (percent)	48.7	41.5	45.8	47.3
Percent in:				
Cotton	5.8	4.5	2.0	1.6
Corn	8.8	3.7	3.9	3.3
Wheat	23.4	19.2	25.9	26.4
Oats	3.8	4.5	3.9	5.8
Grain Sorghums	3.3	4.8	2.5	4.0
Hay	3.4	3.7	3.7	3.8
Other Crops	1.2	1.1	3.9	2.4
All Other Land[1/] in Farms	50.3	58.5	54.2	52.7
Total	100.0	100.0	100.0	100.0

1/ Includes all land in pasture and woodland not pastured.

* Compiled from the "United States Census of Agriculture, 1930 through 1945."

PERCENT OF ALL LAND IN CROPS IN THE PROJECT AREA
1930-45*

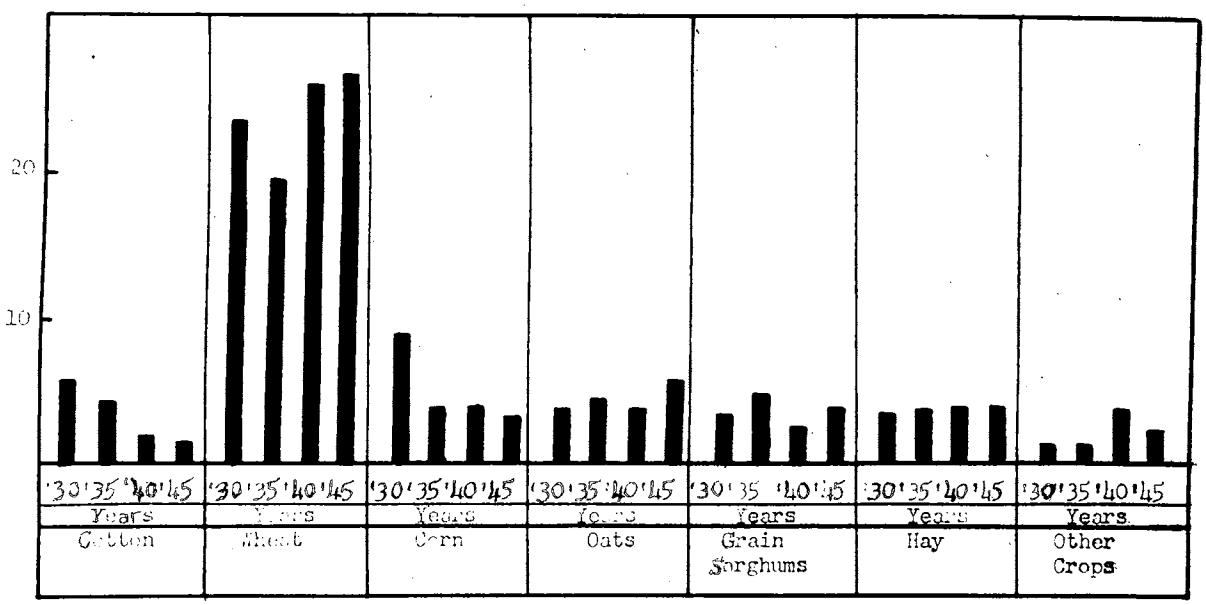


Figure 6.

* Compiled from the "United States Census of Agriculture, 1930 thru 1945."

Cotton Acreage, Yield, and Production

The number of farms reporting cotton in the Project Area decreased from 30,127 to 14,260, a decrease of 52.7 percent in the 15 year period, 1930-45. Cotton acreage, in the same period, decreased 68 percent from a total of 674,553 acres to a total of 215,840 acres. The total cotton acreage for the state decreased 64 percent.

The yield per planted acre influenced largely by weather conditions fluctuated up and down. It reached a high of 285 pounds per acre in 1940, and a low of 142 pounds per acre in 1947. (Table II)

TABLE II

HARVESTED ACREAGE, YIELD, AND PRODUCTION OF COTTON IN PROJECT AREA, 1930-45*

Year	Acres	Yield pounds	Production bales
1930	674,553	124	160,826
1935	506,009	67	69,184
1940	249,135	191	87,579
1945	215,840	250	98,645
Average		158	

* Source: Compiled from the "United States Census of Agriculture, 1030-45."

PURPOSE AND SCOPE

The purpose of this study is to determine the varieties and volume of cottonseed for planting purposes handled by ginners and planted by farmers, to provide an insight into the marketing risks and practices involved, and to determine the volume and origin of cotton planting seed originating outside of Oklahoma that were marketed in the area.

The area covered by this study consists of Type of Farming Area 3, Type of Farming Area 4, Type of Farming Area 7, and Type of Farming Area 8. These four Type of Farming Areas comprise the major portion of central Oklahoma. (Figure 4)

Method and Procedure

A sample for the Project Area was taken instead of making a complete survey, because of the time and expense involved. The Gin Points used in the sample were selected from the gins operating in each county. These were stratified so as to include a representative sample of the various types of active gins located in the Project Area (Cooperative, Line, and Independent Gins). The number of gins included in the sample from a given county was determined by the volume of cotton produced in the county as related to the total production in the Project Area, and by the number of the different types of gins operating in the county as, again, related to the total for the Project Area.

The Farmer Sample was drawn from the Agricultural Adjustment Administration's cotton insurance listing sheet for 1945 in such a manner as to secure randomization. The size of the farmer sample was determined by the number of "farms reporting cotton" in the 1945 Census of Agriculture. The number of "farms reporting cotton" per county were rounded off to the nearest hundred. Approximately 0.5 of one percent of the total number

of farms reporting cotton were visited, or a total of 72 farmers in the Project Area. (Table III)

TABLE III

SELECTION OF FARMER SAMPLE

County	Number of Farmers* Rounded	Number of Farmers* Actual	Number Interviewed	Percent of Total Rounded	Percent of Total Actual
1. Noble	300	269	2	.67	.74
2. Kingfisher	200	216	1	.50	.46
3. Canadian	500	517	3	.60	.58
4. Osage	500	495	3	.57	.61
5. Pawnee	700	743	4	.56	.54
6. Payne	900	896	5	.56	.56
7. Logan	800	801	4	.50	.50
8. Lincoln	1600	1670	8	.50	.48
9. Oklahoma	400	445	2	.50	.45
10. Cleveland	500	466	3	.60	.64
11. Pottawatomie	1000	1026	5	.50	.49
12. Creek	1400	1441	7	.50	.49
13. Okfuskee	2000	1978	10	.50	.51
14. Hughes	1500	1504	8	.53	.53
15. Seminole	1000	1000	5	.50	.50
16. Pontotoc	700	712	2	.29	.28
	14000	14945	72	.52	.55

* Number of farmers was rounded off to the nearest hundred.

VARIETIES OF COTTON PLANTING SEED HANDLED AND PLANTED IN CENTRAL OKLAHOMA

Varieties Handled by Ginners in the Project Area

A total of 365,876 pounds of cotton planting seed, comprising 16 different varieties, were handled in 1945 by the ginners interviewed in the Area (Table IV). The six leading varieties were Stoneville 2B, D&PL 14, Acala 8, Watson Rowden, Stoneville 62, and Rowden, and composed 84 percent of all varieties handled (Table V). The seven most promising varieties from the standpoint of staple length and yield in eastern Oklahoma as shown by regional averages of Experiment Station plots for the years 1939-45 were: Oklahoma Triumph, Deltapine, Hi-Bred, Acala 892, Rowden, Stoneville 2B, and Acala 8.[1/]

In 1946, the cotton planting seed handled by ginners increased to 492,170 pounds, an increase of 35 percent over the previous year; the number of varieties increased to 19. (Table IV) The seven leading varieties handled by ginners in 1946 were: Stoneville 2B, D&PL 14, Stoneville 62, Acala 8, Watson Rowden, Rowden, and Stoneville 551. These seven varieties composed 419,358 pounds, 85 percent of the total volume of cotton planting seed handled by ginners in the Project Area. (Figure 7, Table V)

The cotton acreage in the Project Area in 1945 was 215,840 acres. (Table II) In 1946, the acreage had decreased to 127,450 acres, a decrease of 41 percent from the previous year.

The increase in the volume of planting seed handled by ginners, despite a considerable decrease in acreage, is probably due to farmers planting better quality seed on the cotton land, and to the poor quality of the cotton planting seed produced locally.

1/ Henry E. Dunlavy, I. M. Parrott, Fred W. Self, and Merrill Gober, "Oklahoma Cotton Variety Tests for 1944 and 1945," Mimeo. Cir. No. M-157, March, 1946.

TABLE IV

VARIETIES OF COTTON PLANTING SEED HANDLED BY GINNERS IN THE PROJECT AREA, 1945-47*

1945			1946			1947		
Variety	Amount (Pounds)	Percentage of Total (percent)	Variety	Amount (Pounds)	Percentage of Total (percent)	Variety	Amount (Pounds)	Percentage of Total (percent)
Acala 8	46,463	12.70	Acala 5	1,500	.31	Acala 5	900	.17
Acala 537	352	.60	Acala 8	43,877	8.92	Acala 8	41,606	8.05
D & P L 14	59,107	16.15	Acala 537	2,144	.42	D & P L 14	112,908	21.85
D & P L 15	4,000	1.09	D & P L 14	89,010	18.09	D & P L 15	4,000	.77
Stoneville 2B	111,950	30.59	D & P L 15	4,000	.81	Stoneville 2B	99,546	19.27
Stoneville 62	31,548	8.62	Stoneville 2B	115,817	23.53	Stoneville 62	70,336	13.61
Watson Mebane	7,680	2.10	Stoneville 62	76,384	15.52	Stoneville 551	27,200	5.26
Stufflebeme Mebane	6,368	1.74	Stoneville 551	27,200	5.53	Watson Mebane	14,720	2.85
Floyd's 8G Mebane	1,664	.45	Watson Mebane	11,232	2.28	Stufflebeme Mebane	9,728	1.88
Mebane	8,780	2.40	Stufflebeme Mebane	6,272	1.27	Mebane	12,680	2.45
Watson Rowden	32,992	9.02	Floyd s 8G Mebane	1,280	.26	Floyd's 8G Mebane	3,072	.60
Stufflebeme Rowden	5,542	1.51	Bryant's Mebane	3,200	.65	Watson Rowden	12,680	5.77
Sunshine Rowden	4,800	1.31	Mebane	10,600	2.15	Stufflebeme Rowden	29,836	.64
Rowden	26,510	7.25	Watson Rowden	35,308	7.17	Sunshine Rowden	3,328	.93
Rowden 41B	6,400	1.75	Stufflebeme Rowden	2,464	.50	Rowden	4,800	3.94
Northern Star	11,720	3.20	Sunshine Rowden	4,800	.98	Rowden 41B	20,358	1.24
			Rowden	31,762	6.45	Northern Star	6,400	6.37
			Northern Star	11,720	2.38	Half & Half	39,918	2.63
			Half & Half	13,600	2.76	Okla. Special	13,600	.74
						Paymaster 54	3,840	.93
						Coker 100	100	.02
Total	365,876	100.00		492,170	100.00		516,676	100.00
Percent Increase				34.57			4.98	

*Compiled from survey schedules.

TABLE IV-A

VARIETIES OF COTTON PLANTING SEED HANDLED BY GINNERS
IN THE PROJECT AREA, 1948

Certified or Better Seed				Not Certified			
Variety	Amount (Pounds)	Percentage of Total (Percent)	Condition[1/]	Variety	Amount (Pounds)	Percentage of Total (Percent)	Condition[1/]
Acala 5	2,000	.37	C-T	Acala 8	4,000	3.89	GR-T
Acala 8	58,480	10.88	C-T	D & P L 14	23,800	23.12	1 yr. "C"
Acala 442	480	.09	C-T	D & P L 14	19,200	18.65	1 yr. "R"
D & P L 14	57,224	10.65	C-T	Stoneville 62	41,920	40.71	1 yr. "C"
D & P L 14	1,100	.20	C-D	Empire	1,500	14.56	1 yr. "C"
D & P L 14	480	.09	F-T	Mixed Seed	12,540	12.18	GR
D & P L 15	1,440	.28	C-T				
D & P L 15	4,320	.80	R-T				
D & P L 15	960	.18	F-T				
Stoneville 2B	90,936	16.92	C-T				
Stoneville 2B	3,700	.69	C-D				
Stoneville 62	20,560	3.83	C-T				
Stoneville 62	20,800	3.87	R-T				
Stoneville 551	32,000	5.69	C-D				
Watson Mebane	8,000	1.49	C-T				
Watson Mebane	400	.07	R-D				
Stufflebeme Mebane	480	.09	C-T				
Floyd's 8-G Mebane	40,880	7.61	C-T				
Mebane	18,840	3.51	C-T				
Mebane	9,900	1.84	R-T				
Clietts Mebane	1,920	.36	R-T				
Watson Rowden	39,720	7.39	C-T				
Watson Rowden	5,480	1.02	C-D				
Watson Rowden Pedigreed	1,920	.36	R-T				

Continued

TABLE IV-A

VARIETIES OF COTTON PLANTING SEED HANDLED BY GINNERS
IN THE PROJECT AREA, 1948
(CONTINUED)

Certified or Better Seed				Not Certified			
Variety	Amount (Pounds)	Percentage of Total (Percent)	Condition 1/	Variety	Amount (Pounds)	Percentage of Total (Percent)	Condition 1/
Stufflebeme Rowden	1,600	.30	C-D				
Rowden	35,360	6.58	C-T				
Rowden	1,000	.19	C-D				
Rowden	6,400	1.19	R-T				
Sunshine Rowden	4,800	.89	C-T				
Rowden 41-B	5,563	1.04	C-T				
Rowden 41 B	100	.02	C-D				
Bryant's Rowden	3,840	.71	C-T				
Waldo Rowden	1,000	.19	C-T				
Northern Star	16,740	3.12	C-T				
Northern Star	100	.02	R-D				
Half & Half	12,800	2.38	C-T				
Lankart 57	2,400	.45	C-T				
Lankart 57	1,000	2.05	R-T				
Lankart 57	100	.02	R-D				
Paymaster 54	4,800	.89	C-T				
Lockette 140	4,800	.89	C-T				
Bobshaw	1,000	.19	C-T				
Coker	1,920	.36	C-T				
Total	537,343			Total	102,960		
Percent of All Seed		84.00		Percent of All Seed		16.00	

1/ The symbols indicate the type of seed, breeding and treatment. C-T, Certified Treated; R-T, Registered Treated; C-D, Certified Delinted or any combination thereof.

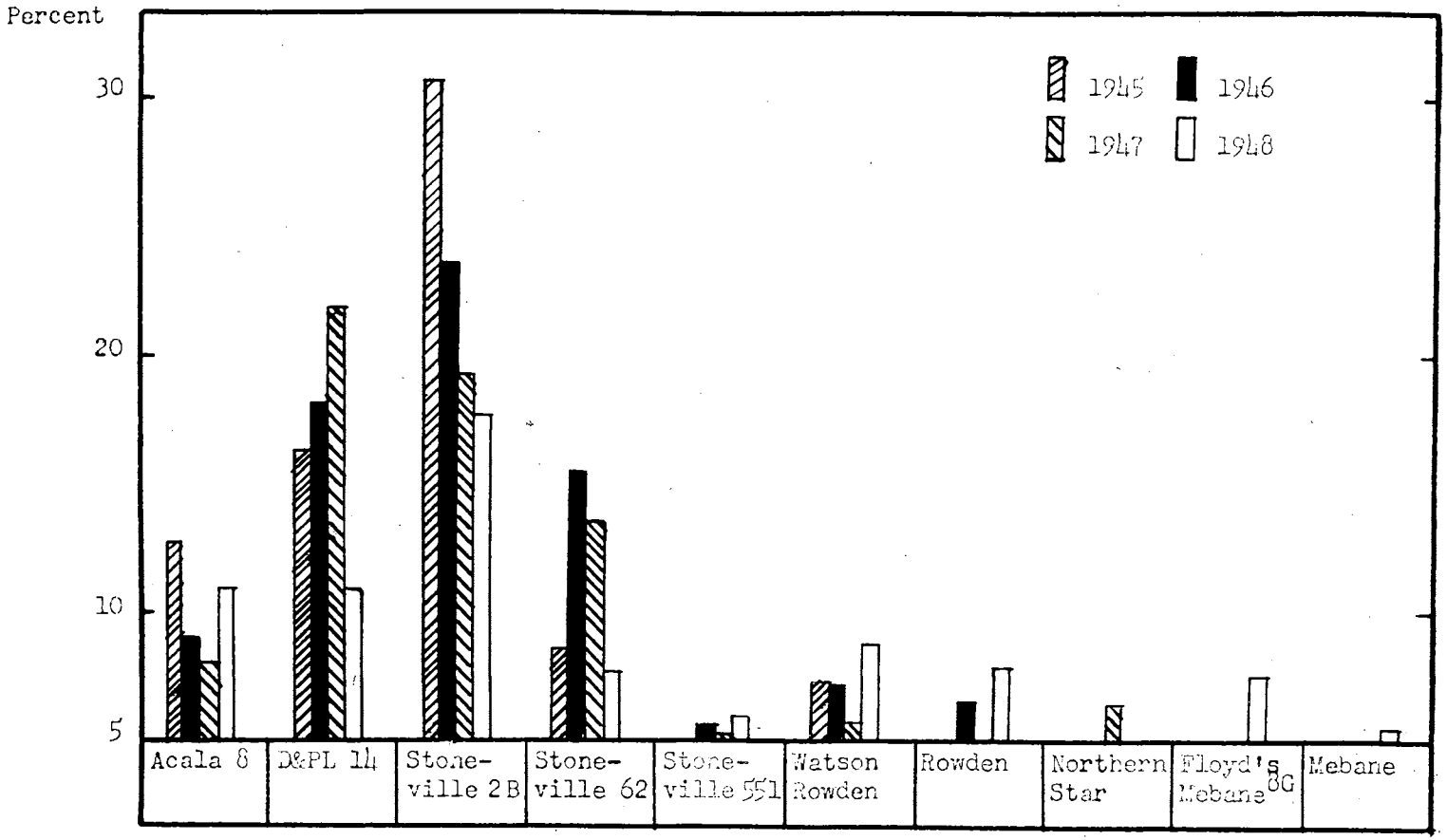
TABLE V

LEADING VARIETIES OF COTTON PLANTING SEED HANDLED BY GINNERS IN THE PROJECT AREA FOR THE YEARS 1945-48*

Variety of Seed	1945 Amount in Pounds	1945 Percent of Total Vol.	1946 Amount in Pounds	1946 Percent of Total Vol.	1947 Amount in Pounds	1947 Percent of Total Vol.	1948 Amount in Pounds	1948 Percent of Total Vol.
Acala 8	46,463	12.70	43,877	8.92	41,606	8.05	58,480	10.88
D & P L 14	59,107	16.15	89,010	18.09	112,908	21.85	58,804	10.94
Stoneville 2B	111,951	30.59	115,817	23.53	99,546	19.27	94,636	17.61
Stoneville 62	31,548	8.62	76,384	15.52	70,336	13.61	41,360	7.70
Stoneville 551	-	-	27,200	5.53	27,200	5.26	32,000	5.96
Watson Rowden	32,992	9.02	35,308	7.17	29,836	5.77	47,120	8.77
Rowden	26,510	7.25	31,762	6.45	-	-	42,760	7.96
Northern Star	-	-	-	-	32,918	6.37	-	-
Floyd's 8G Mebane	-	-	-	-	-	-	40,880	7.61
Mebane	-	-	-	-	-	-	28,740	5.35
	308,571		419,538		414,350		441,080	
Percent of Total		84.33		85.20		80.19		82.78

* Compiled from Table IV and Table IV-A.

LEADING VARIETIES OF COTTON PLANTING SEED HANDLED BY GINNERS



SOURCE: Compiled from Table V.

Figure 7.

The supply of good quality cottonseed available for planting purposes is influenced only to a small extent by the cotton acreage in Oklahoma due to the fact that most of the certified planting seed originates from out-of-state sources.

In 1947, the cotton planting seed handled by ginners increased from a total of 492,170 pounds to 516,676 pounds, an increase of 5 percent. The number of varieties increased to 21. (Table IV) The seven leading varieties of D&PL 14, Stoneville 2B, Stoneville 62, Acala 8, Northern Star, Watson Rowden, and Stoneville 551 composed 80 percent of all varieties handled by ginners. (Figure 7, Table V)

The cotton acreage in 1947 increased from 127,450 acres to 130,100 acres, an increase of 2 percent over the previous year. (Table II)

The volume of seed handled by ginners in 1948 increased from 516,676 pounds to 604,303 pounds, an increase of 17 percent, and the number of varieties increased to 28. (Table IV-A) The nine leading varieties of Stoneville 2B, D&PL 14, Acala 8, Watson Rowden, Rowden, Stoneville 62, Floyd's 8G Mebane, Stoneville 551, and Mebane composed 82 percent of the total volume of seed handled.

Five of the six leading varieties handled by ginners in 1945 were among those which appeared most promising on the basis of Experiment Station "plot data."[2/] The other variety was one which was still under study and had not been thoroughly tested.

In 1946, five out of seven leading varieties handled by ginners were on the list tested and accepted as promising. The other two varieties not on the list were strains of a promising variety, and one of these was undergoing tests at the time.

2/ Henry E. Dunlavy, I. M. Parrott, Fred W. Self, and Merril Gober, Op. cit.

Four of the seven leading varieties handled by ginners in 1947 were on the list tested and accepted as promising. Two of the other three were strains of an approved variety, and one of these was also undergoing plot tests.

Five of the nine leading varieties handled by ginners in 1948 were on the list of preferable varieties that had been tested by the Experiment Station. Two of the other four were strains of an approved variety, one of which was undergoing plot tests. Almost 84 percent of seed handled by ginners in 1948 was certified or better seed (Table IX).

Varieties Planted by Farmers

Farmers interviewed in the sample of cotton farmers drawn from the Project Area received 63,930 pounds of seed in 1948, composed of 16 different varieties. (Table VI) The five varieties of D&PL 14, Stoneville 2B, Stoneville 62, Watson Rowden, and Mebane composed 81 percent of the total volume of planting seed received, including both home-grown and purchased seed, and occupied 79 percent of the acreage planted to certified or better seed. (Table VI, Table VII)

The farmers interviewed planted only five of the nine leading varieties handled by ginners in 1948. The reason for the differences existing between the leading varieties handled by ginners and planted by farmers was due to the fact that in this year over two-thirds (69 percent) of the seed planted by farmers was of uncertified quality. Ginners furnish the farmers only a small portion of uncertified seed. Thus farmers may be planting varieties that were handled by the ginners in previous planting seasons.

The five leading varieties planted by the farmers interviewed in 1948 occupied 79 percent of the total planted acreage. Stoneville 62 led in occupying 30 percent of the planted acreage. The other four varieties in

TABLE VI

VARIETIES OF COTTON PLANTING SEED RECEIVED BY FARMERS IN THE PROJECT AREA, 1948*

Certified or Better Seed					Not Certified				
Variety	Amount (lbs.)	Percent of Total	Planted Acres	Condition	Variety	Amount (lbs.)	Percent of Total	Planted Acres	Condition
Acala 8	1,305	6.60	57	C-T[1]	Acala 8	1,000	2.27	25	2Y "C"[4]
D & P L 14	3,594	18.17	170	C-T	D & P L 14	776	1.76	23	1Y "C"
D & P L 14	2,200	11.12	175	C-D[2]	D & P L 14	400	.91	2	3Y "C"
D & P L 15	1,536	7.77	61	C-T	Stoneville 2B	1,836	4.14	47	1Y "C"
D & P L 4C	100	.51	20	C-D	Stoneville 2B	2,296	5.20	50	2Y "C"
Stoneville 2B	2,422	12.24	117	C-T	Stoneville 2B	700	1.59	25	3Y "C"
Stoneville 2B	480	2.43	32	C-D	Stoneville 2B	175	.40	6	GR[5]
Stoneville 62	2,700	13.65	172	C-T	Stoneville 62	14,028	31.77	280	1Y "C"
Stoneville 62	140	.71	8	C-D	Stoneville 62	315	.71	45	1Y "C"-D
Watson Mebane Imp.	100	.51	10	C-T	Stoneville 62	12,000	27.18	130	3Y "C"
Mebane	448	2.26	28	C-T	Stoneville 62	300	.68	8	GR
Watson Rowden	1,484	7.50	105	C-T	Watson Mebane	192	.43	12	1Y "C"
Watson Rowden	1,248	6.31	120	C-D	Mebane	3,200	7.25	35	1Y "C"
Watson Rowden	50	.25	22	R-D[3]	Mebane	150	.34	14	GR
Rowden	1,082	5.48	65	C-T	Watson Rowden	700	1.59	46	1Y "C"
Rowden Imp.	100	.51	16	C-D	Watson Rowden	350	.79	7	2Y "C"
Big Boll Rowden	150	.76	15	C-T	Big Boll Rowden	300	.68	18	3Y "C"
Half and Half	212	1.07	12	C-T	Okla. Triumph "44"	4,512	10.22	57	3Y "C"
Lankart 57	200	1.01	8	C-T	Heavy Fruiter 5	200	.45	18	2Y "C"
Heavy Fruiter 5	128	.65	12	C-T	Heavy Fruiter 5	70	.16	9	3Y "C"
Bobshaw	100	.51	9	C-T	Jumbo	100	.23	4	GR
					Mixed Seed	556	1.26	27	GR
Total	19,780	100.00	1,234		Total	44,150	100.00	888	
Percent of All Seed		30.95					69.06		

* Includes all home-grown and purchased seed

1. C-T is certified and treated seed.
2. C-D is certified and delinted seed.
3. R-D is registered and delinted seed.
4. 2Y "C" is seed that is 2 years from certified.
5. GR is "gin run" seed.

TABLE VII

LEADING VARIETIES OF COTTON PLANTING SEED RECEIVED AND PLANTED BY FARMERS IN THE PROJECT AREA IN 1948*

Variety of Seed	Amount (lbs.)	Planted Acreage (acres)	Percent Certified or Better Seed	Acreage Occupied (percent)
D & P L 14	6,970	370	10.90	17.44
Stoneville 2B	7,903	277	12.36	13.05
Stoneville 62	29,483	643	46.12	30.30
Watson Rowdon	3,832	300	5.99	14.14
Mebane	3,798	77	5.94	3.63
Total	51,986	1,667	81.31	78.56

* Compiled from Table VI.

TABLE VIII

AMOUNT OF SEED BY QUALITY PURCHASED AND PLANTED BY FARMERS IN THE PROJECT AREA IN 1948*

Quality and Condition	Amount (lbs.)	Acres	Percent of Certified or Better Seed	Percent of All Seed	Percent Planted Acreage	Average Price Paid Per 100 lb.
Certified and Treated	15,462	841	78.17	24.19	24.19	10.54
Certified and Delinted	4,268	371	21.58	6.68	17.48	17.46
Registered and Delinted	50	22	.25	.08	1.04	20.00
Total	19,780	1,234	100.00	30.95	58.15	Av. 16.00

* Compiled from Table VI.

TABLE IX

AMOUNT OF SEED BY QUALITY HANDLED BY GINNERS
IN THE PROJECT AREA IN 1948*

Quality and Condition	Amount (lbs.)	Percent of Certified or Better Seed	Percent of All Seed	Average Price Paid Per 100 lb.
Certified and Treated	434,063	80.78	67.79	9.56
Certified and Delinted	44,980	8.37	7.02	17.24
Registered and Treated	56,260	10.47	8.79	9.99
Registered and Delinted	600	.11	.09	16.00
Foundation and Treated	1,440	.27	.22	10.00
Total	537,343	100.00	83.91	Av. 12.56

* Compiled from Table IV-A.

order were: D&PL 14, 17 percent; Watson Rowden, 14 percent; Stoneville 2B, 13 percent; and Mebane, 4 percent. (Table VI, Table VII)

The quality of cotton planting seed received and planted by farmers varied; 31 percent was certified or better seed and occupied 58 percent of the planted acreage. The remaining 69 percent of the seed received and planted by farmers was of varying quality and not officially certified. (Table VI, Table VIII)

Certified seed composed 24 percent of the 40 percent of Certified or better seed, and occupied 31 percent of the planted acreage; Certified and Delinted seed composed 7 percent of the better quality seed and occupied 17 percent of the planted acreage; Registered and Delinted seed composed only 0.08 percent of the better quality seed and occupied 1 percent of the planted acreage.

Three of the five leading varieties planted by farmers in 1948 were on the list tested by the Experiment Station. One of the other two were still undergoing plot tests.

In 1948 farmers had to do a very small amount of replanting, and in most cases were able to obtain the seed desired for replanting. (Appendix II). Farmers plant less seed per acre when they are using certified or better quality seed, and especially so if they are using delinted seed. The usual rates per acre for delinted seed were from 8 to 10 pounds per acre for certified, delinted; for certified seed not delinted, the rate was about 16 pounds per acre; and for non-certified seed, the rate was from 28 to 32 pounds per acre. (Table VI)

Reasons for Choosing Varieties

Twelve factors were considered important by farmers in selecting cottonseed for planting purposes. These were rated in order of importance

according to the number of farmers that considered the factor as one basis for selecting a variety of cotton for planting. (Figure 8, Table X)

The factors in order of importance were: (1) high yield, (2) ease of picking, (3) long staple, (4) gin turnout and early maturity, (5) storm proofness, (6) drought resistance, (7) availability of seed, (8) ease of snapping, (9) ginner's recommendations, (10) even maturity, and (11) compactness.[2/] In Figure 8, gin turnout and early maturity are shown separately to indicate they were separate factors for selection, but were discussed together because both were given equal consideration by farmers.

Using the same procedure, the factors considered by ginners in selecting cotton planting seed to sell were rated in order of importance. They were as follows: (1) long staple, (2) gin turnout, (3) high yield, (4) ease of picking, (5) adaptability to conditions, (6) early maturity, (7) storm proofness, (8) ease of snapping and ease of ginning, and (9) adaptability to mechanization and good color.[3/] (Figure 9, Table XI) In Figure 9, ease of snapping and ease of ginning, and adaptability to mechanization and good color were also shown separately to indicate they were considered separate factors for selection by the gin operators, but were discussed together because the ginners weighted them about equal.

Farmers in choosing seed considered "good yield" first, whereas ginners considered "good staple" first. Farmers considered "ease of picking" second, whereas ginners considered "gin turnout" second. Farmers considered "good or long staple" third, whereas ginners considered "good or high yield" third. Farmers considered "gin turnout" and "early maturity" fourth,

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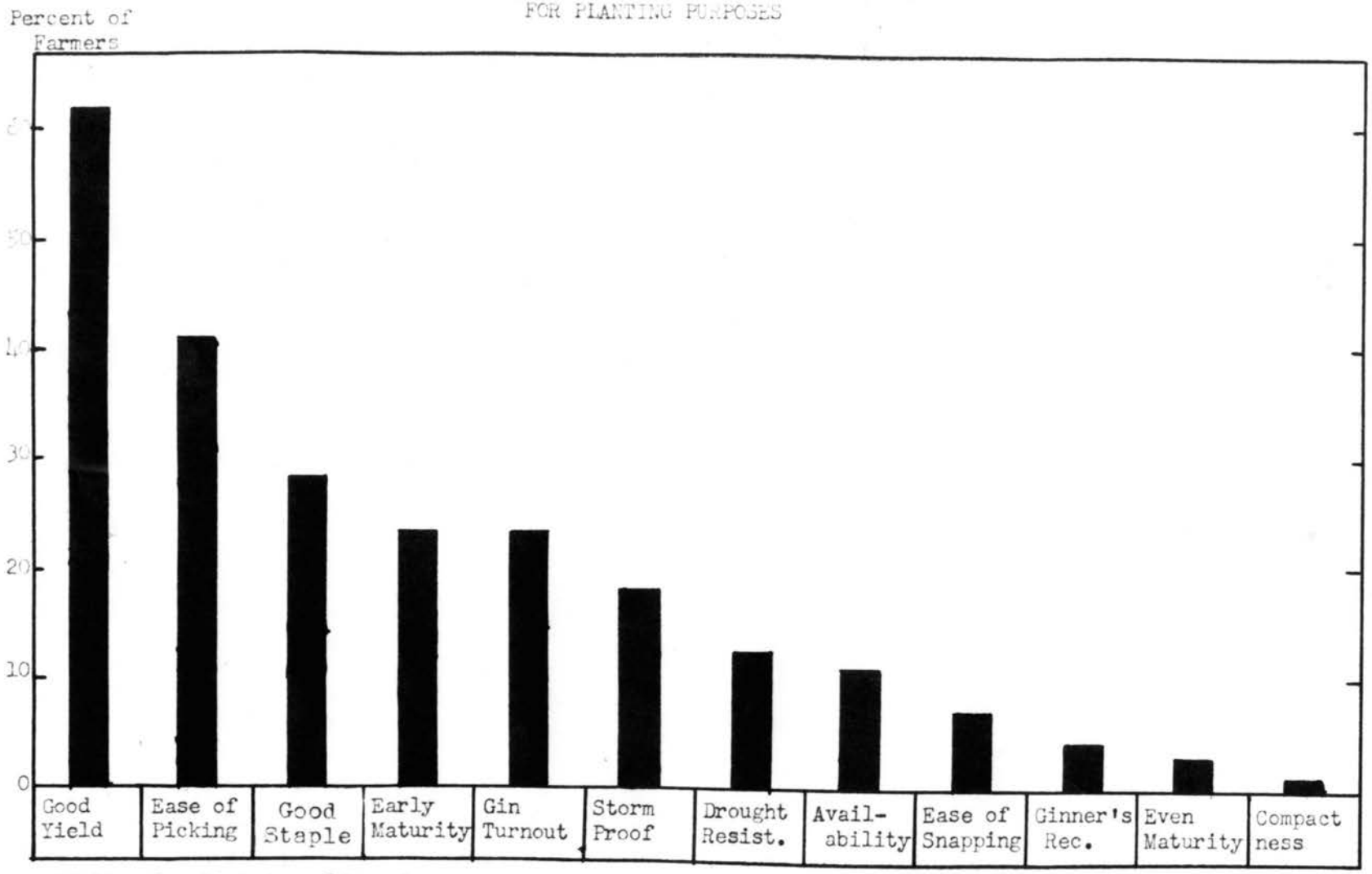
2/ Compactness refers to plant structure--short limbs, medium-uniform height, and compact fruiting.

3/ Adaptability to conditions refers to a variety that seems to be well adapted to a particular section--climatic conditions, soil, topography, etc.

FACTORS CONSIDERED BY FARMERS IN SELECTING COTTONSEED FOR PLANTING PURPOSES



SOURCE: Compiled from Table X.

Figure 8.

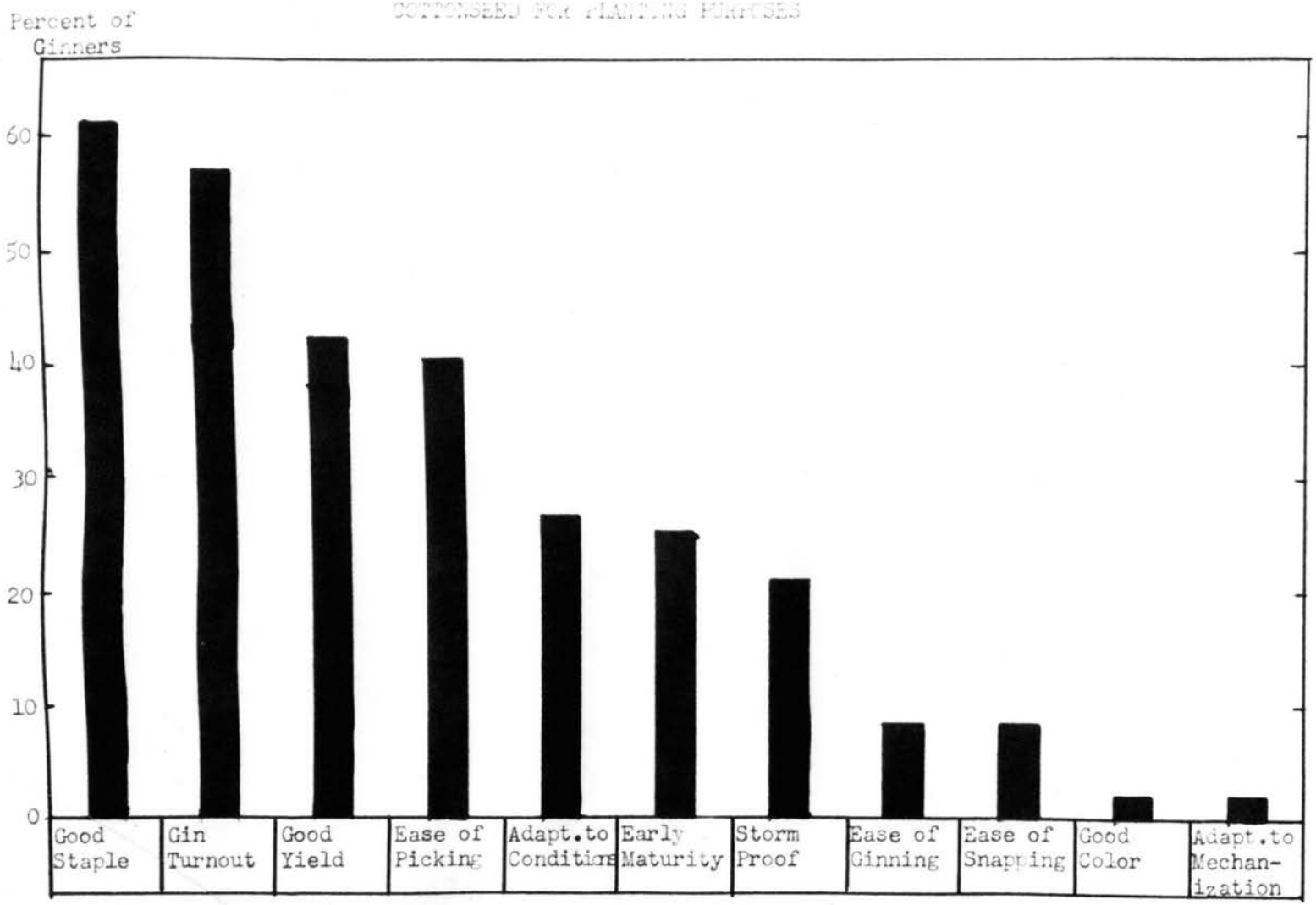
TABLE X

FACTORS CONSIDERED BY FARMERS IN SELECTING COTTONSEED FOR PLANTING PURPOSES*

Type of Farming Area	Reasons											
	Good Yield	Ease of Picking	Ease of Snapping	Gin Turn-out	Early Maturity	Storm Proof	Good Staple	Availa-bility	Ginner's Recommen-dation	Even Maturity	Drought Resis-tance	Compact-ness
3	3	2	2	3	1	0	2	0	0	0	0	0
4	1	1	0	0	1	1	2	1	1	0	0	0
7	18	6	3	6	7	6	7	3	2	2	4	1
8	22	20	0	8	8	6	9	4	0	0	5	0
Total	44	29	5	17	17	13	20	8	3	2	9	1
Rating	1	2	8	4	4	5	3	7	9	10	6	11
% of Farmers Consid-ering	61.97	40.85	7.04	23.94	23.94	18.31	28.17	11.27	4.23	2.82	12.68	1.41

* Compiled from Appendix Table III.

REASONS FOR GINNERS PREFERRING CERTAIN VARIETIES OF COTTONSEED FOR PLANTING PURPOSES



SOURCE: Compiled from Table XI.

Figure 9.

TABLE XI

REASONS FOR GINNERS PREFERRING CERTAIN VARIETIES OF COTTON FOR PLANTING PURPOSES*

Type of Farming Area	Reasons										
	Adaptability to Conditions	Gin Turn-Out	Storm Proof	Early Maturity	Ease of Picking	Good Staple	Good Yield	Adaptability to Mechanization	Ease of Snapping	Ease of Ginning	Good Color
3	1	2	1	1	1	3	2	1	0	0	0
4	1	2	1	0	1	1	1	0	0	0	0
7	5	10	4	4	8	13	6	0	2	1	0
8	6	13	4	7	9	12	11	0	2	3	1
Total	13	27	10	12	19	29	20	1	4	4	1
Rating	5	2	7	6	4	1	3	9	8	8	9
% of Ginners Considering	27.66	57.95	21.28	25.53	40.43	61.70	42.55	2.13	8.51	8.51	2.13

* Compiled from Appendix Table IV.

whereas ginners considered "ease of picking" fourth. As would be expected ginners considered the factors of "good staple" and "gin turnout" first, because these factors yield them the greatest return from seed cotton. Ginners consider these first, because they purchase a large part of their cotton in the "seed," and report that "longer staple" cotton is easier to sell. Long staple cotton usually brings a higher price, and is probably a factor which is included in the ginner's report that it is "easier to sell."

On the other hand, as would be expected, the farmer was interested in cotton with the greatest yield, and with characteristics favorable for picking, since it would actually be easier to harvest and, also, it would be easier to obtain hired labor for harvest work.

With the ginner, labor and yield were secondary and with the farmer quality (staple length) and gin turnout were secondary. Ginners in selecting seed for planting purposes apparently lean toward quality rather than yield, which is contrary to the farmer's primary emphasis as reported in the area. These reasons for selection are definitely conflicting when cotton breeding is considered. With a longer staple cotton and good turnout, there is usually decreased yield and more difficulty in picking (smaller bolls). On the other hand, with increased yield and easier picking, there is usually shorter staple and sometimes lower turnout. An ideal variety of cotton would be one that embodies the factors of good yield, high gin turnout, ease of picking, longer staple, and early maturity, but such a variety, apparently, has not as yet been developed.

Availability of Varieties Desired by Farmers

The majority (78 percent) of the farmers received the variety of cotton planting seed wanted. Only 22 percent of the farmers did not receive the variety of cotton planting seed desired. (Table XII) Most of

the farmers who did not receive the variety they wanted, admitted that they made no special effort to find the variety that they most desired. They either waited until planting time to look for seed or had waited until too late to place advance orders.

TABLE XII

FARMERS IN THE PROJECT AREA RECEIVING THE VARIETIES DESIRED*

Type of Farming Area	No. Farmers Receiving The Variety Desired		No. Farmers Not Receiving The Variety Desired		No. of Farmers
	Actual No.	Percent	Actual No.	Percent	
3	4	66.66	2	33.33	6
4	3	100.00	0	0	3
7	24	80.00	6	20.00	30
8	25	75.75	8	24.25	33
Total Project Area	56	77.77	16	22.23	72

*Compiled from survey schedules.

Fewer farmers have been saving their own cotton planting seed recently due to boll weevil damage of local seed, and the good price that has been paid for cottonseed by the oil mills. Several farmers make the practice of saving their own seed as a reserve for replanting in case they cannot obtain the desired quality and variety for replanting.

Apparently, the supply of planting seed was adequate in the 1948 planting season. The grower who desires a particular variety and quality of planting seed should place orders for his planting seed from three to four months in advance of the planting season. Ginners exercise a great deal of caution in ordering planting seed. If a grower waits until planting

season to order seed, he may have to wait several days or a week until the ginner can order and receive the particular variety of seed desired. However, the group of growers who wait until planting season to order seed, apparently do not think variety is an important factor in profitable cotton production or more effort would be made to secure the kind of seed specified.

The factors of "good staple" and "gin turnout" were of primary importance with ginners as reasons for selecting cotton planting seed, whereas the farmers considered these of secondary importance. Farmers considered "good yield" and "ease of picking" to be the two most important factors, whereas the ginners considered these to be of secondary importance. An ideal variety of cotton would be one embodying longer staple, high yield, good gin turnout, and ease of picking. However, it has been shown by various studies conducted by both governmental and private laboratories that as the staple length of a variety is increased, the yield and gin turnout tend to decrease. In some cases other factors may have to be taken into consideration as in one improved variety, the increase in both gin turnout and staple length was offset by small boll size. The small boll made the cotton unsatisfactory for picking by hand.

MARKETING RISKS AND PRACTICES

Variable weather conditions during the cotton planting season constitute one of the greater risks involved in the handling of cottonseed for planting purposes. (Appendix Table I) The variation in soils further complicates the production problem of numerous varieties. Some of the farmers interviewed reported that certain varieties may be better adapted to certain soils than others; therefore, they were buying one variety of cottonseed for upland and another variety for bottomland. In one season a farmer may need to plant only once providing there is favorable weather conditions; in another season with unfavorable weather conditions, a farmer may have to replant his cotton acreage several times. Consequently, dealers in cotton planting seed have a problem involving uncertainty and economic risk in estimating the farmer's need for planting seed.

Seed Ordered and Planted by Farmers

The planting dates for cotton in the Project Area ranged from April 15 to May 30. Approximately 27 percent of the farmers ordered their planting seed in advance of the 1948 planting season (from June 1947 through February 1948). This group of farmers accounted for 46 percent of the total volume of planting seed ordered from ginners by farmers. The remaining farmers (73 percent) ordered their seed at planting time. From the period May 1 to May 31, over one-half of the farmers (55 percent) ordered about two-fifths (39 percent) of the total volume of cotton planting seed ordered from ginners. (Table XIII, Appendix Table V)

The majority of the farmers (84 percent) receive 75 percent of the seed received from ginners in the period April 15 through May 31. (Table XIII)

TABLE XIII

ORDER AND RECEIPT DATES
OF COTTON PLANTING SEED
BY NUMBER OF FARMERS ORDERING AND BY VOLUME RECEIVED,
EXPRESSED AS PERCENTAGES*

Date Ordered and Received	Percent of Farmer Sample Ordering	Percent of Total Volume of Seed Ordered By Farmers	Percent of Farmer Sample Receiving Seed	Percent of Total Volume of Seed Received By Farmers
June 1-Dec. 31	10.72	24.64	0	0
Jan. 1-Mar. 31	16.07	21.17	7.14	12.19
Apr. 1-Apr. 14	8.93	8.33	7.14	11.98
Apr. 15-Apr. 30	5.36	2.81	44.65	44.35
May 1-May 14	32.14	16.00	35.71	26.23
May 15-May 31	23.21	23.01	3.57	4.04
June 1-June 30	3.57	4.04	1.79	1.21
Total	100.00	100.00	100.00	100.00

* Compiled from Appendix Table V.

Seed Ordered and Received by Ginners

Approximately two-fifths (38 percent) of the ginners in the Project Area ordered their seed several months (June through February) in advance of the cotton planting season. The orders composed slightly over 47 percent of the total volume of cotton planting ordered by ginners for the 1948 planting season. During the two month period, March through April, the major portion of ginners (62 percent) order over one-half (53 percent) of their total volume of cotton planting seed. (Table XIV, Appendix Table VI)

The majority of the ginners (97 percent) receive over four-fifths (82 percent) of their planting seed in the period March through May, receiving the greatest portion in the months of March and April. (Table XIV)

TABLE XIV

ORDER AND RECEIPT MONTHS OF COTTON PLANTING SEED BY NUMBER OF GINNERS AND BY VOLUME RECEIVED, EXPRESSED AS PERCENTAGES*

Date Ordered	Percent of Ginners Sample Ordering	Percent of Total Volume Ordered	Percent of Ginners Sample Receiving Seed	Percent of Total Volume Received
June-Dec.	25.64	14.32	0	0
Jan.-Feb.	12.82	33.04	2.56	17.78
Mar.	30.77	19.49	33.33	26.26
April	30.77	33.15	51.28	49.99
May	0	0	12.83	5.97
Total	100.00	100.00	100.00	100.00

*Compiled from Appendix Table IV.

Seemingly, the larger cotton farmers order their seed in advance of the planting season (38 percent of the farmers ordered 45 percent of the total volume ordered by farmers), while the major portion (smaller cotton farmers) order their planting seed at or just prior to planting time. Over

four-fifths of the farmers do not receive their planting seed until the planting season. This shifts the risks and problems involved in the ownership of the planting seed back to the ginner. The ginner in turn shifts the major portion of the risk back to the seed supply company or seed producers by ordering his supply of cotton planting seed only a month or so in advance of the planting season, and by not taking delivery until just prior to and during the cotton planting season. Ginners usually order just what they estimate will be needed for one planting. A few of the ginners interviewed reported they would sell their customers seed, and let them make payment at harvest time, but the majority of the ginners required cash for planting seed at the time of delivery. The reasons given for requiring cash for seed purchases were that past experience had shown that the return from the seed sale might be lost, and in some cases both the planting seed and the ginning customer were lost.

Amount of Risk

The amount of cotton planting seed handled by Ginners in the Project Area was equal to 69 percent of the total volume of 927,172 pounds shipped in to the Area from out-of-state sources. The remaining 39 percent was probably reshipped out of the Project Area, and handled by ginners not interviewed. Over four-fifths of the seed handled was certified or better quality seed. (Table IX, Table IV-A)

The total value of the seed handled by the ginners interviewed was estimated by multiplying the total volume of the various qualities by the average price paid by ginners for each quality. A total value of $66,956 worth of cotton planting seed was estimated handled by the ginners interviewed. Since the ginner sample represented about 55 percent of the number of gins in the Project Area, the total amount for all gins in the Project

Area was estimated to be $115,183, or an average of $1,339 per gin. (Table IX)

The seed received by farmers was multiplied by the average price paid for each quality. (Table VIII) The value for all seed below certified was estimated at $6.59 per hundred pounds based on the prices reported by farmers. The total value of seed received and planted by farmers including seed of all quality was estimated to be $5,330 for the farmers interviewed. Since the farmers interviewed were 0.5 of 1 percent, the value of all seed received and planted by farmers in the Project Area was estimated at $266,531.

The difference or margin between the prices reported by ginners and the prices paid by farmers for different qualities of seed were as follows: Certified and treated $0.98 or 10 per cent, Certified and delinted $0.22 or 1 percent, and Registered and delinted seed $4.00 or 25 percent. (Table VIII, Table IX)

The reason that the estimated value of the seed planted by farmers was only about twice the estimated value of the seed handled by ginners is due to the large amount of uncertified seed planted by farmers. Sixty-nine percent of the cotton planting seed planted by farmers was below certified in quality, whereas 84 percent of the cotton planting seed handled by ginners was certified or better quality seed and sold for a higher price. (Table IV-A)

Marketing Practices of Farmers

Selling methods varied among farmers from those who sold all of their cotton in the "seed" to those who sold all of their cotton in the "lint." There were some farmers who sold part of their cotton in the lint and part in the seed.) Actually, 28 percent of the farmers sold all of their cotton in the seed and 53 percent sold all of their cotton in the lint. The

remaining 19 percent of the farmers sold part of their cotton in the lint and part in the seed. (Table XV) The percentage of farmers selling cotton in the seed would be higher if Kingfisher and Canadian counties are not considered. These two counties in the western part of the Project Area sell all their cotton in the lint.

Cotton was found to be selling on three bases: Grade and staple, Premium on quality, and "Hog round."[1/] Of the farmers, 13 percent sold some cotton on the basis of grade and staple, 20 percent sold some cotton for a premium (actually a premium for grade), and 89 percent sold some or all their cotton "hog round," (Table XV). The percentage of farmers selling on different bases will not total 100 percent because some farmers sold on two or more bases.

Buying Practices of Ginners

Among the ginners, 34 percent bought part of their cotton on the basis of grade and staple (gin buyer's class) or on Smith-Doxey classifications, and 66 percent bought all of their cotton "hog round."[2/] (Table XVI) Apparently some of the farmers were told that they were being paid more for their cotton because of color, amount of trash, etc.; thus the "premium for grade" would be included in the ginner's grade and staple basis.

Only the larger farmers apparently order their planting seed in advance of the cotton planting season; 27 percent of the farmers ordered 46 percent of the total volume of cotton planting seed ordered from ginners

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1/ "Hog Round" refers to a practice of paying one price for all cotton in the seed and one price for all cotton in the lint without any compensation for differences in quality.

2/ "Smith-Doxey" classifications refers to the classing service of the United States Department of Agriculture through which groups of growers can have their cotton classed free, by complying with certain requirements.

TABLE XV

SELLING PRACTICES OF FARMERS in Central Okla

Type of Farming Area	No. of Farmers	Selling Practices: Condition of Cotton: In Seed	Both in Seed and Lint	In Lint	Basis upon which cotton is sold: Grade and Staple (Smith-Doxey)	Premium on Grade	"Hog Round"
3	6	2	1	3	3	0	4
4	3	0	0	3	0	1	2
7	30	7	3	20	4	7	18
8	33	11	10	12	2	6	25
Total	72	20	14	38	9	14	63
Percent		27.8	19.4	52.8	12.7	19.7	88.7 *

* Percentage figures of "basis upon which cotton is sold" do not total to 100 percent because individual farmers do not follow the same practice in selling the entire crop.

TABLE XVI

BUYING PRACTICES OF GINNERS* in Central Texas

Type of Farming Area	Grade & Staple (Smith-Doxey)	"Hog Round"	No. of Ginners
3	3	1	4
4	2	0	2
7	6	14	20
8	5	16	21
Total	16	31	47
Percent	34.04	65.96	100.00

*Compiled from survey schedules.

by farmers. Approximately three-fourths of the farmers wait until planting season to order their planting seed, and over one-half (55 percent) delay until May 1st when planting is in full progress. The majority of the farmers received their planting seed during the main part of the planting season, April 15 through May 31, and thereby forced the risks involved in the ownership of seed back on the ginners handling the seed.

Over one-third of the ginners (38 percent) order 47 percent, nearly one-half, of their planting seed prior to the cotton planting season. This corresponds to the orders placed by farmers in advance of the planting season. Ginners do not receive their cotton planting seed until just prior to and during the planting season. Although ginners have a considerable amount invested in planting seed, an estimated average of $1,339 per gin, they attempt to minimize their risks and force the greater risk back on the seed producers and dealers. The main risks the ginner has in handling cotton planting seed is in over-estimating the demand for seed, and thus having a carryover. They attempt to minimize this by ordering as late as possible, and thus gaining a better estimate of the cotton producer's intentions.

A system was found at one point which seemed to work quite satisfactorily in assisting the ginner in estimating his seed needs. It was required of the farmer at ginning to give the ginner an estimate of his cotton planting seed needs for the coming year. It was understood that the farmer was not obligated to take the amount of seed that he estimated he would need. In actual practice, few farmers failed to take the full amount, and the ginner seldom had a carryover or an inadequate supply.

The greater proportion of the farmers interviewed sold their cotton immediately after it was ginned, and a considerable number (28 percent) sold all of their cotton in the seed.

The majority of the farmers sold part of their cotton on a hog-round basis with no premiums or discounts for quality, and in some cases in a market where a buyer would have little effective competition from buyers in nearby and surrounding areas, because of the small amount of cotton produced.

Ginners bought about one-third of their cotton with some allowance for quality, and two-thirds on a hog-round basis. Farmers, raising improved varieties of cotton and who exercise care in maintaining purity and quality, may be discouraged by "hog round" buying practices. However, due to the improvement being made in increasing the yield of improved varieties, the disadvantages of such buying practices may be offset somewhat.

ORIGIN OF COTTON PLANTING SEED SHIPPED INTO THE PROJECT AREA FROM OUT-OF-STATE

Origin of Seed by State

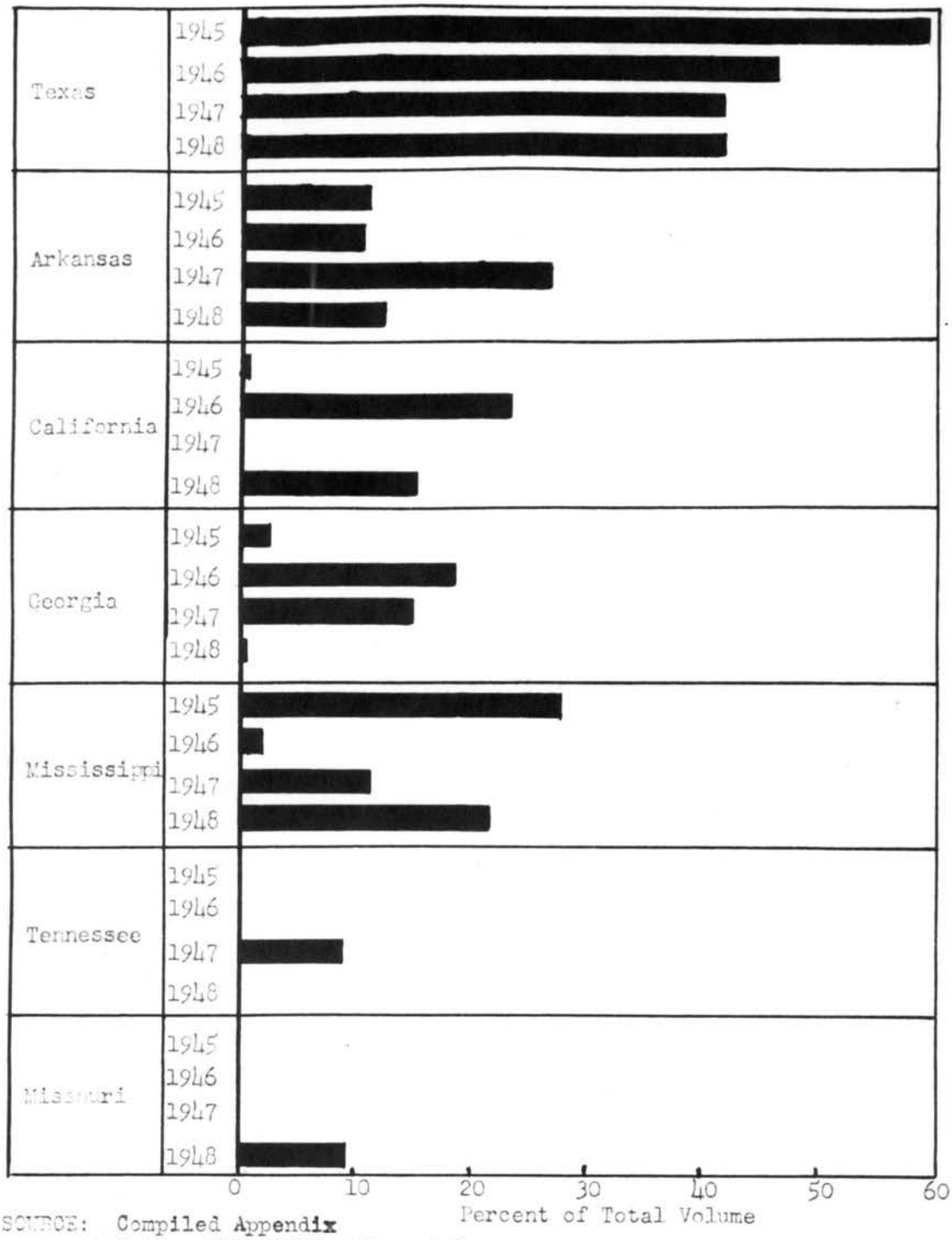
A large portion of Oklahoma's certified and registered cotton planting seed is shipped in from out-of-state sources due to the small quantity of good quality seed produced within the state. Variable climatic conditions, boll weevil, and other factors cause the quality of the seed produced to vary greatly from year to year, and consequently, the seed varies in its suitability for planting purposes.

Data on the amount of cotton planting seed shipped into the Project Area for various years was obtained from the office files of the State Seed Laboratory of the State Department of Agriculture. The seed shipped in was not directly related to the farmer and ginner sample, and some of the seed shipped into the Project Area to large seed dealers may have been reallocated and transported to areas outside of the Project Area. Even so, the data should give a representative indication as to the origin of cotton planting seed; although the amount in pounds may not check with that handled by ginners and planted by farmers.

The origin of cotton planting seed shipped into the Project Area from out-of-state during the period 1945-48 was studied. Texas was the outstanding source in each of the years, the amount shipped in ranged from slightly less than two-fifths (38 percent) to almost three-fifths (59 percent) of the planting seed shipped in from out-of-state sources. (Figure 10, Appendix Tables VII-X)

A total of 406,197 pounds of cotton planting seed was shipped into the Project Area in 1945 from the following states listed in order of volume: Texas, 59 percent; Mississippi, 28 percent; Arkansas, 11 percent; Georgia, 42 percent; and California, 0.01 percent.

ORIGIN OF COTTON PLANTING SEED SHIPPED INTO THE PROJECT AREA, 1945-48



SOURCE: Compiled Appendix Tables VII, VIII, IX, and X.

Figure 10.

The total amount shipped into the Project Area in 1946 was 571,016 pounds, an increase of 41 percent from the previous year. The origin of the seed by states in order of volume was as follows: Texas, 46 percent; California, 23 percent; Georgia, 19 percent; Arkansas, 11 percent; and Mississippi, 1 percent. (Figure 10)

In 1947, the total amount of seed shipped into the Project Area increased to 1,145,816 pounds, an increase of 101 percent. The origin of the planting seed by states in order of volume was: Texas, 39 percent; Arkansas, 27 percent; Georgia, 15 percent; Mississippi, 11 percent; and Tennessee, 9 percent. California did not ship seed directly into the area in 1947. (Figure 10)

The total amount of seed shipped into the Project Area decreased in 1948 to 927,172 pounds, a decrease of 19 percent. The origin of the planting seed by states in order of volume was: Texas, 42 percent; Mississippi, 22 percent; California, 15 percent; Arkansas, 14 percent; Missouri, 9 percent; and Georgia, 0.15 percent. (Figure 10)

The increase in seed shipped into the Project Area in the face of a decreasing acreage in 1946 was probably due to two factors: One, the planting of better quality seed on the land producing cotton, and two, the small amount of seed produced suitable for planting purposes. The large increase in the volume of seed shipped in 1947 was due partly to a small increase in acreage, and to the small amount of suitable planting seed produced in the state. The decrease in the volume of seed shipped into the Project Area in 1948 was probably due to a decrease in acreage, and a carryover from the previous year.

Some of the variation in the volume of planting seed received from particular states has probably been influenced by the amount of replanting, and some farmers experimenting with varieties they are unfamiliar with.

Some farmers, after hearing favorable reports concerning a variety, will order a small amount for trial planting. Fluctuation in volume was undoubtedly influenced by variation in the varieties and qualities of planting seed produced in the states that supply Oklahoma with cotton planting seed.

Composition of Seed by Variety

A total of 26 varieties of cotton planting seed was shipped into the Project Area in 1945. The five leading varieties in order of volume were: Northern Star, 26 percent; Stoneville 2B, 26 percent; D&PL 14, 12 percent; Rowden, 10 percent; and Mebane, 6 percent. The five leading varieties constituted 80 percent of the total volume of cotton planting seed shipped into the Project Area in 1945. (Tables XVII-XVIII) The differences between the varieties of seed shipped in and those handled by ginners in the years 1945-48 were due to the fact that the data on cotton planting seed shipped in was drawn from seed permits from the files of the State Seed Laboratory, and were not directly related to the farmer and ginner samples. Some of the seed shipped into the Project Area to large dealers was trucked to locations outside the Project Area.

There were 26 varieties of cotton planting seed shipped into the Project Area in 1946, but the volume of the leading varieties changed somewhat from the previous year. In order of volume the leading varieties were: Acala 8, 23 percent; Rowden, 21 percent; Northern Star, 20 percent; Georgia Hi-Bred, 16 percent; and Watson, 6 percent. These five varieties composed 86 percent of the total volume of cotton planting seed shipped into the Project Area.

The number of varieties shipped into the Project Area in 1947 decreased to 24 despite an increase of over 100 percent in the total volume of seed

TABLE XVII

LEADING VARIETIES OF COTTON PLANTING SEED SHIPPED INTO THE PROJECT AREA DURING THE YEARS, 1945-48*

Variety	1945		1946		1947		1948	
	Amount (lbs.)	Percent of Total Volume	Amount (lbs.)	Percent of Total Volume	Amount (lbs.)	Percent of Total Volume	Amount (lbs.)	Percent of Total Volume
D & P L 14	49,920	12.28	-	-	358,868	31.32	155,590	16.78
D & P L 15	-	-	-	-	-	-	80,000	8.63
Stoneville 2B	106,284	26.14	-	-	201,710	17.60	99,500	10.73
Rowden	38,944	9.58	120,992	21.19	142,097	12.40	72,276	7.80
Northern Star	106,724	26.25	112,862	19,77	117,374	10.24	92,180	10.00
Mebane	23,392	5.75	-	-	-	-	49,652	5.36
Acala 8	-	-	133,440	23.37	-	-	138,690	14.96
Georgia Hybrid	-	-	93,100	16.30	110,000	9.60	-	-
Watson	-	-	39,902	5.77	-	-	-	-
Watson Rowden	-	-	-	-	-	-	55,348	5.97
Total	325,104	79.99	493,296	86.39	930,049	81.17	743,236	80.16

* Compiled from Table XVIII.

TABLE XVIII

COTTON PLANTING SEED SHIPPED INTO PROJECT AREA
FROM OUTSIDE OF OKLAHOMA

1945			1946			1947			1948		
Variety	Amount	% of Total	Variety	Amount	% of Total	Variety	Amount	% of Total	Variety	Amount	% of Total
	lbs.			lbs.			lbs.			lbs.	
Acala	14,400	3.54	California Acala 8	133,440	23.37	Acala	750	.07	Acala 8	138,690	14.96
Calif.Acala 8	32	.01	Acala	500	.09	D & P L 14	358,868	31.32	D & P L 14	155,590	16.78
D & P L 14	49,920	21.28	D & P L 14	20,800	3.65	Stoneville 2B	201,710	17.61	D & P L 15	80,000	8.63
D & P L 8074A-09-13	2,080	.51	Stoneville 2B	16,700	2.93	Stoneville 62	1,300	.11	Stoneville 2B	99,500	10.73
Stoneville 2B	106,284	26.14	Tex.Special Mebane	192	.03	Mebane	37,696	3.29	Watson Mebane	4,650	.50
Mebane	23,392	5.75	Mebane	10,576	1.85	Rowden	142,097	12.40	Mebane	49,652	5.36
Floyd's 8G Mebane	1,056	.26	Rowden	120,992	21.19	Watson	52,093	4.55	New 8G Mebane	38,976	4.20
Watson Rowden	134	.03	Watson	32,902	5.77	Northern Star	117,374	10.24	Watson Rowden	55,348	5.97
Rowden	38,944	9.58	Northern Star	112,862	19.77	Half & Half	5,332	.47	Watson	35,468	3.83
Watson	18,096	4.45	Half & Half	10,960	1.92	Paymaster 54	30,048	2.62	Rowden	72,276	7.80
Northern Star	106,724	26.25	Paymaster 54	3,360	.59	Sunshine	3,936	.34	Rowden 41B	35,230	3.80
Half & Half	8,102	1.99	Sunshine	6,934	1.22	Lankart 57	2,016	.18	Sunshine Rowden	384	.04
Paymaster 54	288	.07	Lankart 57	5,792	1.02	Lockett 140	19,200	1.68	Anton Rowden	96	.01
Heavy Fruiter 5	8,880	2.18	Sure Crop	464	.08	Sure Crop	224	.02	Dortch Imp. Rowden	864	.09
Sunshine	19,976	4.91	HyBred	93,100	16.30	Anton (Big Boll)	96	.01	Reg.Harper Rowden	2,500	.27

Continued

TABLE XVIII

COTTON PLANTING SEED SHIPPED INTO PROJECT AREA
FROM OUTSIDE OF OKLAHOMA
(CONTINUED)

1945			1946			1947			1948		
Variety	Amount lbs.	% of Total	Variety	Amount lbs.	% of Total	Variety	Amount lbs.	% of Total	Variety	Amount lbs.	% of Total
Lankart 57	346	.10	Anton	299	.05	Western Prolific	100	.01	Northern Star	92,810	10.00
Lockett 140	18	.01	Western Prolific	100	.02	Western Wonder	300	.03	Half & Half	15,216	1.64
Sure Crop	570	.14	Western Wonder	150	.03	Tex HiBred	2,500	.22	Sunshine	1,536	.17
Qualla	1,600	.39	Hi Bred	250	.04	Ga. HiBred	110,000	9.60	Paymaster 54	5,220	2.72
Kasch	512	.13	Empire	192	.03	Empire	12,672	1.11	Lankart 57	6,006	.65
Kasch HiBred	3,584	.88	AFL 14 & 16	20	.00	Bobshaw	32,336	2.82	Lockett 140	96	.01
Hi-Bred	60	.01	Arket 1&E3	10	.00	Bagley	14,976	1.31	Bobshaw	7,200	.78
Anton	96	.02	Deljos & Washington	40	.01	Dortch #1	96	.01	Empire	960	.10
Wacona	192	.05	Sunshine Rowden	96	.02	Cottonseed	96	.01	Anton	1,632	.18
U	224	.07	Floyd's 8G Mebane	96	.02				Bagley	1,248	.13
Cottonseed	1,056	.26	Summerours HiBred	200	.03				Kasch	224	.02
									Macha	200	.02
									HiBred	900	.10
									Summerours HiBred	1,400	.15
									Cokers 100 Wilt	150	.02
									Cokers Wilds	150	.02
									Paula	3,000	.32
Total	406,566		Total	571,016		Total	1,145,816		Total	927,172	

shipped in from that of the previous year. The leading varieties in order of volume were: D&PL 14, 31 percent; Stoneville 2B, 18 percent; Rowden, 12 percent; Northern Star, 10 percent; and Georgia Hi-Bred, 10 percent. These five varieties constituted approximately four-fifths (81 percent) of the total volume shipped into the Project Area in 1947.

The number of varieties shipped into the Project Area in 1948 increased to 32, despite a 20 percent decrease in the total volume of seed shipped in. The leading varieties in order of volume were: D&PL 14, 17 percent; Acala 8, 15 percent; Stoneville 2B, 11 percent; Northern Star, 10 percent; D&PL 15, 9 percent; Rowden, 8 percent; Watson Rowden, 6 percent; and Mebane, 5 percent. These eight varieties composed four-fifths of the total volume of seed shipped into the Project Area in 1948.

The amount of cotton planting seed shipped into the Project Area from out-of-state sources increased every year in the four year period, 1945-48, except in 1948. The 20 percent decrease in total volume in 1948 was not a surprising turn when consideration was given to an increase of over 100 percent in volume in 1947. These increases occurring during a period in which the cotton acreage is declining indicate that better quality seed is being planted on the cotton acreage, and that farmers are becoming more aware that better returns are to be made from planting good quality seed. Ginners are ordering more better quality seed, because the quality of home-grown seed has been damaged by boll weevil among other things. Ginners are advocating the planting of cotton that will mature earlier and will be less susceptible to boll weevil damage.

Texas is the most important source of quality cotton planting seed that is shipped into the Project Area from out-of-state sources. The states of Arkansas, California, Georgia, and Mississippi are next in importance, the order of importance by volume varying year to year. Scarcity of good

quality planting seed in one state or area due to climatical variations and other conditions may be a factor in causing the fluctuation between states in the volume of cotton planting seed shipped into the Project Area.

The number of varieties shipped into the Project Area remained substantially the same in the three year period, 1945-47. The increase of 33 percent in the number of varieties in 1948 when the acreage was still declining was probably due to both farmers and ginners experimenting with some new varieties, because there was little variation percentage wise in the volume of planting seed composed by leading varieties, and the volume composed by new varieties was a very small part of the total volume.

The four leading varieties of Northern Star, Stoneville 2B, D&PL 14, and Rowden constituted a large portion of the total volume in the four year period. The four-year average of these four varieties was 60 percent of the total volume of cotton planting seed shipped into the Project Area from out-of-state sources. (Table XVII)

In comparing the leading varieties handled by ginners, planted by farmers, and shipped in from out-of-state sources, seven leading varieties constituted the major part of cotton planting seed in the period 1945-48. The seven leading varieties were in order of importance: Stoneville 2B, D&PL 14, Acala 8, Rowden, Northern Star, Stoneville 62, and Watson Rowden. (Table XIX)

TABLE XIX

AN ARRAY OF LEADING VARIETIES OF COTTON PLANTING SEED BY VOLUME FOR THE YEARS, 1945-48*

Variety	Weighted Value
Stoneville 2B	50
D & P L 14	49
Acala 8	31
Rowden	25
Northern Star	24
Stoneville 62	22
Watson Rowden	18
Mebane	7
Floyd's 8G Mebane	4
D & P L 15	3
Stoneville 551	1

* Compiled from Appendix Table XII.

SUMMARY

The number of varieties of cotton planting seed planted in central Oklahoma changes from year to year; the number reported varied between sixteen and thirty-two varieties. Usually from five to nine leading varieties compose 70 percent and over of the total volume of planting seed. It was determined by the study that the leading varieties of cotton planting seed marketed in the Project Area were in order of importance: Stoneville 2B, D&PL 14, Acala 8, Rowden, Northern Star, Stoneville 62, and Watson Rowden.

Ginners in selecting cottonseed for planting purposes preferred a variety that has a good staple length and a high gin turnout. Next, the ginners considered yield and ease of picking. The farmers considered yield and ease of picking first, and good staple length and high gin turnout second. It seems logical that the reason ginners considered staple length first in importance was due to the fact that: first, cotton with a good staple length brings a good price; second, the major portion of the ginners bought cotton on a "hog round" basis, and a high gin turnout means more cotton and more money. The ginners gave yield and ease of picking next consideration because their customers, the farmers, consider yield and ease of picking first, and the customer's requirements must be satisfied. The farmer's reasons for considering yield and ease of picking are obvious; a high yield means a greater return per acre, and ease of picking means that labor can be more easily secured and used more efficiently.

From the standpoint of cotton breeding, these reasons for selection are conflicting, because one desirable quality is usually developed at the expense of another. These reasons for selection have probably been part of the difficulty involved in establishing and maintaining cottonseed improvement programs.

The farmer pushes the risk of ownership of the cottonseed planting seed back onto the ginner as much as possible by waiting until the planting season to order and receive his seed. About one-fourth of the farmers ordered their planting seed in advance of the planting season, and waited until the planting season to take delivery. The ginner in turn forced the risk back on the seed breeder or producer by ordering the majority of his seed only one or two months in advance of the planting season, and took delivery only a week or two before the planting operation started.

The ginners were subject to a greater individual risk than were the farmers; although, the farmers, altogether, would have had more seed than the ginners when all qualities were considered. The ginner's investment was in higher valued seed, and he had the added risk of carryover. The farmer, knowing the acreage that he will plant to cotton, can estimate his needs more closely than the ginner who has to estimate how much of each variety the farmers in his gin area will plant. The ginner delays his orders for planting until just prior to planting time to gain a better estimate of the intended cotton acreage; thus he attempts to minimize the risk of over-estimating the demand for cotton planting seed.

Most farmers sold their cotton immediately after ginning. About 28 percent of the farmers sold cotton in the seed. Fifty-three percent of the cotton farmers sold cotton on a "hog round" basis with little or no compensation for differences in quality.

Ginners bought about one-third of their cotton with some allowance for quality and bought two-thirds "hog round."

A large portion of the cotton planting seed shipped in from out-of-state sources originates in Texas. The states of Arkansas, California, Georgia, and Mississippi supply a major portion of the remainder, the volume per state varying from year to year.

Conclusions and Recommendations

Apparently, the supply of cotton planting seed was adequate to meet the demand in the Project Area for the year under study (1948). However, if certain varieties are desired, they should be ordered several months in advance of the planting season to be assured of delivery. There seems to be no relation between the cotton acreage in the Project Area and the supply of good quality planting seed available.

The most desirable variety of cotton from both the farmer's and ginner's viewpoint would be one which has a high yield, a good gin turnout, a long staple, and properties that make for ease of picking; this would be an ideal variety, but as yet such a variety has not been developed.

There is a possibility of eliminating some of the inferior varieties of cotton planted, provided the marketing system properly compensates the producer for differences in cotton quality, and the producer is educated to the value of these differences. In this way varieties that have characteristics that are in demand should obtain higher prices, and varieties of inferior qualities not in strong demand would tend to be discounted each on its own merits.

In one portion of the Project Area farmers reported that they gave consideration to Experiment Plot Tests, but in the other portions this was not reported. Therefore, the similarity of the varieties handled by ginners and planted by farmers to those varieties tested by the Experiment Station is apparently coincidental.

The greater risks involved in handling cotton planting seed are shifted by the farmer and the ginner back to the planting seed producer. Some of the risk of over-estimating the demand for cotton planting seed could be minimized by requiring farmers at ginning time to estimate without any obligation their seed needs for the next planting season.

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APPENDIX

A comparison of the leading varieties for the 1945 through 1948 planting season was achieved by listing the leading varieties of the four years in "order of importance" (determined by the volume of seed). (Appendix Table XI). Then each "order of importance" was assigned a weight according to volume. The "order of importance" was then multiplied by the assigned weight. (Appendix Table XII). These figures when arranged in an array from the largest to the smallest number provide an average, combine list of the leading varieties of cotton planting seed for the period 1945 through 1948 by "order of importance." (Table XIX)

APPENDIX TABLE I

AVERAGE TEMPERATURE, RAINFALL, AND KILLING FROST DATES FOR CENTRAL OKLAHOMA[t/]

	TEMPERATURE					KILLING FROST AVERAGE DATES				AVERAGE PRECIPITATION													
COUNTY	LENGTH OF RECORD YR	JAN. AVG. F°	JULY AVG. F°	MAXI-MUM F°	MINI-MUM F°	LENGTH OF RECORD YR.	LAST IN SPRING DATE	FIRST IN FALL DATE	GROWING SEASON DAYS	LENGTH OF RECORD YR.	JAN. IN.	FEB. IN.	MARCH IN.	APRIL IN.	MAY IN.	JUNE IN.	JULY IN.	AUG. IN.	SEPT. IN.	OCT. IN.	NOV. IN.	DEC. IN.	ANNUAL IN.
CANADIAN	35	37.5	81.8	114	-15	33	Apr.5	Nov.4	213	36	.87	1.10	2.12	3.44	4.47	3.59	2.35	2.81	3.37	2.64	2.15	1.31	30.22
CLEVELAND	36	38.8	82.0	116	-17	36	Apr.3	Nov.2	213	39	1.31	1.26	2.44	3.45	5.02	3.79	2.40	2.74	3.45	3.35	2.25	1.56	33.02
CREEK	18	39.1	82.9	115	-18	20	Mar.30	Nov.2	217	20	2.09	1.37	2.81	3.51	3.78	4.59	3.18	2.68	3.65	3.72	2.54	1.61	35.53
HUGHES	38	40.0	82.1	118	-12	38	Mar.26	Nov.6	225	38	2.26	1.82	2.99	3.74	5.35	3.91	2.70	3.15	4.02	3.35	2.47	2.07	37.83
KINGFISHER	37	36.9	82.8	116	-18	38	Apr.5	Oct.31	209	39	1.03	1.15	1.78	3.06	4.05	3.71	2.59	2.53	2.59	2.65	1.66	1.15	27.95
LINCOLN	37	38.6	82.8	118	-20	37	Mar.28	Oct.31	217	37	1.44	1.24	2.47	3.63	4.95	3.90	2.56	3.04	3.30	3.04	2.20	1.54	33.31
LOGAN	40	38.8	82.4	116	-24	38	Apr.2	Oct.30	211	39	1.10	1.22	2.25	3.54	4.80	3.65	2.50	2.98	3.55	3.02	2.26	1.47	32.34
NOBLE	38	37.3	82.4	117	-20	37	Apr.9	Oct.29	203	37	.99	1.28	1.85	3.68	5.09	4.07	2.57	3.64	3.52	3.05	2.26	1.45	33.45
OKFUSKEE	26	39.2	82.6	115	-10	26	Mar.30	Nov.8	223	27	2.22	1.67	3.13	3.95	4.31	3.82	2.35	2.86	4.09	3.89	2.61	1.87	36.77
OKLAHOMA	40	37.6	81.6	113	-17	40	Mar.28	Nov.7	224	40	1.17	1.09	2.10	3.23	4 86	3.74	2.40	2.71	3.17	3.02	2.24	1.42	31.15
OSAGE	36	36.9	81.8	116	-26	38	Apr.4	Oct.26	205	38	1.37	1.46	2.54	3.79	4.84	4.97	3.51	3.48	3.77	3.21	2.23	1.41	36.58
PAWNEE	36	37.7	82.5	114	-24	34	Apr.4	Oct.26	205	37	1.72	1.63	2.72	4.05	5.18	4.48	3.01	3.35	3.99	3.07	2.66	1.64	37.50
PAYNE	40	36.6	80.7	115	-18	40	Mar.31	Oct.30	213	40	1.03	1.25	2.34	3.77	4.66	4.02	2.67	3.10	3.79	2.94	2.36	1.38	33.31
PONTOTOC	37	39.6	82.2	116	-14	36	Apr.1	Nov.2	215	38	1.55	1.56	2.71	3.77	4.90	4.17	2.42	2.87	3.57	3.43	2.23	1.63	34.81
*SEMINOLE	37	39.1	82.2	116	-14	36	Apr.1	Nov.2	215	38	1.55	1.56	2.71	3.77	4.90	4.17	2.42	2.87	3.57	3.43	2.23	1.63	34.81

* NO RECORD WAS AVAILABLE--COUNTY WAS BEST REPRESENTED BY SHAWNEE IN POTTAWATOMIE COUNTY.

t/ "CLIMATE AND MAN," 1941 YEARBOOK OF AGRICULTURE, UNITED STATES DEPARTMENT OF AGRICULTURE, WASHINGTON, D. C., pp. 1065-67.

APPENDIX TABLE II

VARIETIES OF COTTON PLANTING SEED PREFERRED
FOR THE SECOND PLANTING 1948

Type of Farming Area	Varieties Preferred				Varieties Planted			
	Variety	Amount (lbs.)	Intended Acreage	Condition of Seed	Variety	Amount (lbs.)	Planted Acreage	Condition of Seed
3	D & P L 15	270	20	C T	D & P L 15	270	20	C T
	Stoneville 62	700	70	C T	Stoneville 62	700	70	C T
	Total	970	90			970	90	
7	Watson Mebane	178	10	C T	Watson Mebane	178	10	C T
	Stoneville 2B	200	21	C T	Stoneville 2B	200	21	C T
	Rowden	200	21	C T	Rowden	200	21	C T
	Okla.Triumph "44"	4,000	50	3 yr."C"	Okla.Triumph "44"	4,000	50	3 yr."C"
	Northern Star	64	1.5	1 yr."C"	Northern Star	64	1.5	1 yr."C"
	Total	4,642	103.5			4,642	103.5	
8	Stoneville 2B	306	32	C T	Stoneville 2B	306	32	C T
	Stoneville 2B	500	8	2 yr."C"	Stoneville 2B	500	8	2 yr."C"
	D & P L 14	180	15	C D	D & P L 14	180	15	C T
	Stoneville 62	100	14	C T	Stoneville 62	100	14	C T
	Watson Rowden	480	20	C T	Rowden 41B	100	20	C D
	Watson Rowden	24	3	C D	Watson Rowden	24	3	C D
	Rowden	288	23	C T	Rowden	288	23	C T
	Okla. Triumph "44"	128	7	3 yr."C"	Okla. Triumph "44"	128	7	3 yr."C"
	Total	2,006	122			2,006	122	
Project Area		7,618	315.5			7,238	315.5	

APPENDIX TABLE III

REASONS FOR FARMER'S SELECTION OF COTTON PLANTING SEED VARIETIES

Type of Farming Area	Good Yield	Ease of Picking	Ease of Snapping	Gin Turn-out	Early Maturity	Storm Proof	Good Staple	Availability	Ginner's Recommendation	Even Maturity	Drought Resistance	Compactness
					(Number)							
Area 3												
Noble	1	1					1					
Kingfisher	1	1										
Canadian	1		2	3	1		1					
Total	3	2	2	3	1	0	2	0	0	0	0	0
Area 4												
Osage	1	1			1	1	2	1	1			
Total	1	1	0	0	1	1	2	1	1	0	0	0
Area 7												
Lincoln	2	4	2	1	4	1	2	1	1	1	1	1
Logan	2					1		1	1		1	
Oklahoma	2			2								
Pawnee	2		1		1	1	1					
Payne	4	2		1	1	1					1	
Cleveland	2				1	2	2					
Pottawatomie	4			2			2	1		1	1	
Total	18	6	3	6	7	6	7	3	2	2	4	1
Area 8												
Creek	5	7			2	1						
Hughes	6	2		2	2	3	1	1			2	
Seminole	4	4		2	1		1	1				
Okfuskee	5	6		4	2	2	6	2			2	
Pontotoc	2	1			1		1				1	
Total	22	20	0	8	8	6	9	4	0	0	5	0
Project Area	44	29	5	17	17	13	20	8	3	2	9	1

APPENDIX TABLE IV

REASONS FOR GINNERS' SELECTION OF COTTON PLANTING SEED VARIETIES

Type of Farming Area	Adaptability (Soil and Climate)	Gin Turn-out	Storm Proof	Early Maturity	Ease of Picking	Good Staple	Good Yield	Adaptability to Mechanization	Ease of Snapping	Ease of Ginning	Good Color
					(Number)						
Area 3											
Noble	1	1	1	1							
Kingfisher					1	1					
Canadian		1				2	2	1			
Total	1	2	1	1	1	3	2	1	0	0	0
Area 4											
Osage	1	2	1		1	1	1				
Total	1	2	1	0	1	1	1	0	0	0	0
Area 7											
Lincoln	1	7	1	2	5	7	2				
Oklahoma		1	2		1	1	1		1		
Pawnee	1	1	1	1	1	2					
Payne	2	1			1	1	1		1		
Cleveland	1			1						1	
Pottawatomie						2	2				
Total	5	10	4	4	8	13	6	0	2	1	0
Area 8											
Creek	2	5	1	1	5	3	5			1	
Hughes	2	3		1	1	3	3		2		
Seminole			1	1	1	1	1				
Okfuskee	2	4	1	3	2	5	2			2	1
Pontotoc		1	1	1							
Total	6	13	4	7	9	12	11	0	2	3	1
Project Area	13	27	10	12	19	29	20	1	4	4	1

APPENDIX TABLE V

FREQUENCY DISTRIBUTION OF ORDER AND RECEIPT
DATES OF COTTON PLANTING SEED ORDERED BY FARMERS

TYPE OF FARMING AREA	NO. OF FARMERS	DATE ORDERED									DATE RECEIVED							DATE OF PLANTING
		JUNE 1- DEC. 31	JAN. 1- FEB. 28	MARCH 1-31	APRIL 1-14	APRIL 15-30	MAY 1-14	MAY 15-31	JUNE 1-30	TOTAL	JAN. 1- MAR. 31	APRIL 1-14	APRIL 15-30	MAY 1-14	MAY 15-31	JUNE 1-30	TOTAL	
3	5	1					4			5		1		4			5	Apr. 15-May 20
4	2	1						1		2		1		1			2	May 7-18
7	23	2	2		3	2	7	7		23		1	12	10			23	Apr. 15-May 30
8	26	2	7		2	1	7	5	2	26	4	1	13	5	2	1	26	Apr. 8-May 30
TOTAL	56	6	9		5	3	18	13	2	56	4	4	25	20	2	1	56	Apr. 15-May 30
PERCENT		10.71	16.07		8.93	5.36	32.14	23.21	3.57		7.14	7.14	44.65	35.71	3.57	1.79		
COMBINED PERCENTAGES		26.73					55.36				14.29		80.36					
COMBINED PERCENTAGES							73.21							83.93				

TYPE OF FARMING AREA	NO. OF FARMERS	VOLUME ORDERED									VOLUME RECEIVED						
		JUN. 1- DEC. 31	JAN. 1- FEB. 28	MARCH 15-31	APRIL 1-14	APRIL 15-30	MAY 1-14	MAY 15-31	JUNE 1-30	TOTAL	JAN. 1- MAR. 31	APRIL 1-14	APRIL 15-30	MAY 1-14	MAY 15-31	JUNE 1-30	TOTAL
3		1300						1784		3084		1300		1784			3084
4			960					278		1238		960		278			1238
7		1760	2020		1280	368	2184	1541		9153		288	6556	2309			9153
8		2350	2057		700	300	1622	1368	960	10307	2900	300	3301	1360	960	288	10307
TOTAL		5360	5037		1980	668	3806	5471	960	23782	2900	2848	13547	6239	960	288	23782
PERCENT		24.64	21.17		8.33	2.81	16.00	23.01	4.04		12.19	11.98	44.35	26.23	4.34	1.21	
COMBINED PERCENTAGES		45.32					39.01				24.17		70.58				
COMBINED PERCENTAGES							54.18							74.62			

APPENDIX TABLE VI

FREQUENCY DISTRIBUTION OF SEED ORDER DATES AND RECEIPTS OF GINNERS

Type of Farming Area	Date Ordered						Date Received					
	Jun-Dec.	Jan-Feb.	March	April	Total	Percent	Jan.	Feb.	March	April	May	Total
3			1	2	3	7.69				3		3
4	1			1	2	5.13			1	1		2
7		2	7	5	14	35.90	1		3	8	2	14
8	9	3	4	4	20	51.28			9	8	3	20
Total	10	5	12	12	39		1		13	20	5	39
Percent	25.64	12.82	30.77	30.77			2.56		33.33	51.28	12.83	
Combined Percentages	38.46			61.54					84.62			
Combined Percentages			74.26							97.44		

Type of Farming Area	Volume Ordered						Volume Received					
	Jun-Dec.	Jan-Feb.	March	April	Total	Percent	Jan.	Feb.	March	April	May	Total
3			5,200	69,620	74,820	9.90				74,820		74,820
4	9,600			9,344	18,944	2.51			9,600	9,344		18,944
7		144,288	91,460	33,800	269,548	35.67	134,400		20,688	113,172	1,288	269,548
8	98,592	105,384	50,640	137,728	392,344	51.92			168,112	180,424	43,848	392,384
Total	108,192	249,672	147,300	250,492	755,656		134,400		198,400	377,760	45,136	755,696
Percent	14.22	33.04	19.49	33.15			17.78		26.26	49.99	5.97	
Combined Percentages	47.36			52.64					76.24			
Combined Percentages			85.68							82.22		

APPENDIX TABLE VII

ORIGIN OF COTTON PLANTING SEED BY STATE SHIPPED INTO PROJECT AREA IN 1945

No. of Varieties	TEXAS Variety	TEXAS Amount (lbs.)	ARKANSAS Variety	ARKANSAS Amount (lbs.)	CALIFORNIA Variety	CALIFORNIA Amount (lbs.)	GEORGIA Variety	GEORGIA Amount (lbs.)	MISSISSIPPI Variety	MISSISSIPPI Amount (lbs.)
1	Acala	14,000	D & P L 14	6,720	Acala	32	Heavy		Stone-	
2	Floyd's 8G		Stoneville				Fruiter		ville 2B	67,500
	Mebane	1,056	2B	38,784			5	8,880	D & P L 14	43,200
3	Northern						Sure Crop	210	D & P L	
	Star	106,724					Hybrid	60	8074-09-13	2,080
4	Qualla	1,600								
5	Mebane	23,383								
6	Watson	18,096								
7	Rowden	38,944								
8	Sunshine	19,976								
9	Lankart 57	346								
10	Half & Half	8,102								
11	Watson Rowden	134								
12	Paymaster 54	288								
13	Lockett 140	18								
14	Kasch	512								
15	Kasch Hybrid	3,584								
16	Cottonseed	1,056								
17	U	224								
18	Anton	96								
19	Wacona	192								
Total		238,731		145,504		32		9,150		112,780
Percent of Area Total		58.77		11.20		.01		2.25		27.76
Grand Total (all states)										406,197

Source: Oklahoma State Department of Agriculture, State Seed Laboratory, Oklahoma City, Oklahoma.

APPENDIX TABLE VIII

ORIGIN OF COTTON PLANTING SEED BY STATE SHIPPED INTO PROJECT AREA IN 1946

No. of Varieties	TEXAS		ARKANSAS		CALIFORNIA		GEORGIA		MISSISSIPPI	
	Variety	Amount (lbs.)	Variety	Amount (lbs.)	Variety	Amount (lbs.)	Variety	Amount (lbs.)	Variety	Amount (lbs.)
1	D & P L	1,300	D & P L		Acala	133,440	Stoneville		Stoneville	
2	Rowden	76,192	14	10,700			2B	4,000	2B	8,000
3	Lankart 57	5,792	Stoneville				Sure Crop	464	Deljos &	
4	Half & Half	10,960	2B	4,700			D & P L		Washington	40
5	Western		Rowden	44,800			14	8,800		
	Prolific	100	Arket				Hybrid	93,100		
6	Acala	500	1 & E3	10			Empire	192		
7	Mebane	10,576								
8	Sunshine	6,934								
9	Texas Special									
	Mebane	192								
10	Watson	33,902								
11	Northern Star	112,862								
12	Western									
	Wonder	150								
13	Anton	288								
14	Paymaster 54	3,360								
15	Apl. 14 & 16	20								
16	Hybrid	250								
17	Sunshine Rowden	96								
18	Summerour Hybrid	200								
19	Floyd's 8G Mebane	96								
Total		262,770		60,210		133,440		106,556		8,040
Percent of Area Total		46.02		10.54		23.37		18.66		1.41
Grand Total (all states)										571,016

Source: Oklahoma State Department of Agriculture, State Seed Laboratory, Oklahoma City, Oklahoma.

APPENDIX TABLE IX

ORIGIN OF COTTON PLANTING SEED BY STATE SHIPPED INTO PROJECT AREA IN 1947

No. of Varieties	TEXAS Variety	TEXAS Amount (lbs.)	ARKANSAS Variety	ARKANSAS Amount (lbs.)	GEORGIA Variety	GEORGIA Amount (lbs.)	MISSISSIPPI Variety	MISSISSIPPI Amount (lbs.)	TENNESSEE Variety	TENNESSEE Amount (lbs.)
1	Acala	750	Dortch	96	Bobshaw	2,400	D & P L14	50,000	D & PL 14	100,000
2	D & P L	290	D & PL 14	158,278	Sure Crop	224	Stoneville			
3	Mebane	37,696	Stoneville		Empire	4,416	2B	80,064		
4	Half & Half	5,332	2B	111,200	D & PL 14	50,300				
5	Western Wonder	300	Empire	8,256	Hybrid	110,000				
			Bobshaw	29,936						
6	Rowden	142,097								
7	Watson	52,093								
8	Hybrid	2,500								
9	Sunshine	3,936								
10	Northern Star	117,374								
11	Paymaster 54	30,048								
12	Lankart 57	2,016								
13	Lockett 140	19,200								
14	Bagley	14,976								
15	Western Prolific	100								
16	Cottonseed	96								
17	Stoneville 2B	10,446								
18	Stoneville62	1,300								
19	Anton	96								
Total		387,694		307,766		167,340		130,064		100,000
Percent of Area Total		41.79		26.86		14.60		11.35		8.73
Grand Total (all states)										1,145,816

Source: Oklahoma State Department of Agriculture, State Seed Laboratory, Oklahoma City, Oklahoma.

APPENDIX TABLE X

ORIGIN OF COTTON PLANTING SEED BY STATE SHIPPED INTO PROJECT AREA IN 1948

No. of Varieties	TEXAS Variety	TEXAS Amount (lbs.)	ARKANSAS Variety	ARKANSAS Amount (lbs.)	CALIFORNIA Variety	CALIFORNIA Amount (lbs.)	GEORGIA Variety	GEORGIA Amount (lbs.)	MISSISSIPPI Variety	MISSISSIPPI Amount (lbs.)	MISSOURI Variety	MISSOURI Amount (lbs.)
1	Northern Star	92,810	Bobshaw D&PL 14	7,200	Acala 8	138,690	D &PL14	1,350	D &PL14	120,350	D &PL14	10,800
2	Macha	200	Paymaster 54	22,640					D &PL14	80,000	Stoneville 2B	34,450
3	Watson	35,468	Empire	960							Watson Mebane	4,650
4	Sunshine	1,536	Stoneville 2B	64,800							Rowden 41B	29,950
5	Half & Half	15,216	Rowden	8,160							Summerour Hybrid	1,400
6	Mebane	45,716	Rowden41B	5,680							Hybrid	750
7	Watson Rowden	55,858	Dorch Imp. Rowden	868							Paula	3,000
8	Paymaster54	24,260	Mebane	2,880							Coker 100 Wilt	150
9	Hybrid	150									Coker Wilds-12	150
10	Reg. Harper Rowden	2,500										
11	Anton	1,632										
12	Rowden	63,828										
13	Lankart 57	6,506										
14	New 8C Mebane	39,976										
15	Anton Rowden	96										
16	Sunshine Rowden	384										
17	Kasch	224										
18	Bagley	1,248										
19	Lockett 140	96										
Total		387,694		113,788		138,690		1,350		200,350		85,300
Percent of Area Total		41.79		12.27		14.96		0.15		21.61		9.20
Grand Total (all states)												927,172

Source: Oklahoma State Department of Agriculture, State Seed Laboratory, Oklahoma City, Oklahoma.

APPENDIX TABLE XI

LEADING VARIETIES OF COTTON PLANTING SEED RATED BY ORDER OF IMPORTANCE FOR THE YEARS, 1945-48*

Variety	1945		1946		1947		1948		
	Ginner Rating	Imported Seed Rating	Ginner Rating	Imported Seed Rating	Ginner Rating	Imported Seed Rating	Ginner Rating	Imported Seed Rating	Farmer Rating
Stoneville 2B	1	2	1	0	2	2	1	3	2
D & P L 14	2	3	2	0	0	1	2	1	3
Acala 8	3	0	4	1	4	0	3	2	0
Watson Rowden	4	0	5	0	6	0	4	7	4
Stoneville 62	5	0	3	0	3	0	6	0	1
Rowden	6	4	6	2	7	3	5	6	0
Stoneville 551	0	0	7	0	0	0	0	0	0
Northern Star	7	1	0	3	5	4	0	4	0
Floyd's 8G Mebane	10	0	0	0	0	0	0	0	0
Mebane	0	5	0	0	0	0	0	7	5
D & P L 15	0	0	0	0	0	0	0	5	0

* Compiled from Table V, Table VII, and Table XVII.

APPENDIX TABLE XII

LEADING VARIETIES OF COTTON PLANTING SEED WEIGHTED BY ORDER OF IMPORTANCE FOR THE YEARS, 1945-48*

Order of Importance / Variety	1 No. of Occurrences	1 Wgt. No.	2 No. of Occurrences	2 Wgt. No.	3 No. of Occurrences	3 Wgt. No.	4 No. of Occurrences	4 Wgt. No.	5 No. of Occurrences	5 Wgt. No.	6 No. of Occurrences	6 Wgt. No.	7 No. of Occurrences	7 Wgt. No.	Total
D & P L 15	0	0	0	0	0	0	0	0	1	3	0	0	0	0	3
Stoneville 2B	3	7	4	6	1	5	0	0	0	0	0	0	0	0	50
D & P L 14	3	7	4	6	1	5	0	0	0	0	0	0	0	0	49
Acala 8	1	7	1	6	2	5	2	4	0	0	0	0	0	0	31
Watson Rowden	0	0	0	0	0	0	3	4	1	3	1	2	1	1	18
Stoneville 62	1	7	0	0	2	5	0	0	1	3	1	2	0	0	22
Rowden	0	0	1	6	1	5	1	4	1	3	3	2	1	1	25
Stoneville 551	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Northern Star	1	7	0	0	1	5	2	4	1	3	0	0	1	1	24
Floyd's 8G Mebane	0	0	0	0	0	0	1	4	0	0	0	0	0	0	4
Mebane	0	0	0	0	0	0	0	0	2	3	0	0	1	1	7

* Compiled from Appendix Table XI.

Typist: Harold A. Coonrad