

The Relation of Quality of Cotton To Prices Paid to Farmers In Alabama

By

J. D. POPE and CARL M. CLARK

AGRICULTURAL EXPERIMENT STATION
OF THE
ALABAMA POLYTECHNIC INSTITUTE

IN CO-OPERATION WITH
UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

M. J. FUNCHES, *Director*
AUBURN, ALABAMA

ALABAMA AGRICULTURAL EXPERIMENT STATION STAFF

Bradford Knapp, B. S., LL. B., D. Agr., President
 M. J. Funchess, M. S., Director of Experiment Station
 W. H. Weidenbach, B. S., Secretary
 P. O. Davis, B. S., Agricultural Editor
 Mary E. Martin, Librarian
 Sara Willeford, B. S., Agricultural Librarian

AGRONOMY AND SOILS:

M. J. Funchess, M.S. _____ Head Professor of Agronomy
 J. W. Tidmore, Ph. D. _____ Professor of Soil Chemistry
 G. D. Scarseth, B. S. _____ Assistant Professor of Soil Chemistry
 Anna L. Sommer, Ph. D. _____ Associate Professor of Soil Chemistry
 H. B. Tisdale, M. S. _____ Associate Professor of Plant Breeding
 J. T. Williamson, B. S. _____ Associate Professor of Agronomy
 R. Y. Bailey, B. S. _____ Assistant Professor of Agronomy
 D. G. Sturkie, Ph.D. _____ Assistant Professor of Agronomy
 *F. L. Davis, M. A. _____ Assistant Professor of Agronomy
 G. H. Jester, B. S. _____ Assistant in Agronomy
 F. E. Bertram, B. S. _____ Assistant in Agronomy
 E. L. Mayton, B. S. _____ Assistant in Agronomy
 J. W. Richardson, B. S. _____ Assistant in Agronomy
 J. R. Taylor, B. S. _____ Assistant in Agronomy
 H. W. Bennett, B. S. _____ Graduate Assistant
 Hoyt Sherard, B. S. _____ Graduate Assistant

ANIMAL HUSBANDRY, DAIRYING AND POULTRY:

J. C. Grimes, M. S. _____ Head Professor of Animal Husbandry, Dairying and Poultry
 W. D. Salmon, M. A. _____ Research Professor of Animal Nutrition
 G. A. Shraeder, Ph. D. _____ Associate Professor of Animal Nutrition
 C. O. Prickett, B. A. _____ Associate Professor of Animal Nutrition
 G. A. Trollope, B. S. _____ Professor of Poultry Husbandry
 D. F. King, M. S. _____ Assistant Professor of Poultry Husbandry
 W. E. Sewell, M. S. _____ Assistant Professor of Animal Husbandry
 G. J. Cottier, M. A. _____ Assistant in Animal Husbandry
 C. T. Bailey, B. S. _____ Superintendent Poultry Farm
 J. G. Goodman _____ Graduate Assistant in Animal Nutrition

BOTANY AND PLANT PATHOLOGY:

J. L. Seal, Ph. D. _____ Acting Professor of Botany and Plant Pathology
 **G. L. Fick, M. S. _____ Assistant Professor of Botany and Plant Pathology
 E. V. Smith, M. S. _____ Assistant in Botany and Plant Pathology

AGRICULTURAL ECONOMICS:

**J. D. Pope, M. S. _____ Head Prof. of Agricultural Economics
 B. F. Alvord, M. S. _____ Associate Professor of Agricultural Economics
 C. G. Garman, M. S. _____ Associate Professor of Agricultural Economics
 C. M. Clark, M. S. _____ Assistant Professor of Agricultural Economics
 Dee R. Oeff, B. S. _____ Assistant in Agricultural Economics
 Edith May Slights _____ Statistical Assistant

AGRICULTURAL ENGINEERING:

M. L. Nichols, M. S. _____ Head Professor of Agricultural Engineering
 J. W. Randolph, M. S. _____ Agricultural Engineering (Coop. U. S. D. A.)
 A. Carnes, M. S. _____ Assistant Professor of Agricultural Engineering
 N. W. Wilson, B. S. _____ Assistant Professor of Agricultural Engineering
 E. Disker, B. S. _____ Assistant Professor of Agricultural Engineering
 H. D. Sexton, B. S. _____ Graduate Assistant

ENTOMOLOGY:

J. M. Robinson, M. A. _____ Head Professor of Entomology and Zoology
 H. S. Swingle, M. S. _____ Associate Professor of Entomology
 L. L. English, Ph. D. _____ Associate Professor of Entomology
 F. S. Arant, M. S. _____ Assistant in Entomology and Zoology

SPECIAL INVESTIGATIONS:

J. F. Duggar, M. S. _____ Research Professor of Special Investigations

HOME ECONOMICS RESEARCH:

Edna R. Bishop, M. A. _____ Associate Professor of Home Economics

HORTICULTURE AND FORESTRY:

L. M. Ware, M. S. _____ Acting Head Professor of Horticulture and Forestry
 C. L. Isbell, Ph. D. _____ Professor of Horticulture and Forestry
 O. C. Medlock, M. S. _____ Assistant Professor of Horticulture and Forestry
 R. W. Taylor, M. S. _____ Assistant Professor of Horticulture and Forestry
 P. L. Wright, B. S. _____ Graduate Assistant
 E. W. McElwee, B. S. _____ Graduate Assistant

VETERINARY MEDICINE:

M. W. Emmel, M. S. _____ Professor of Animal Pathology

SUBSTATIONS:

Fred Stewart, B. S. _____ Supt. Tennessee Valley Substation, Belle Mina, Ala
 C. F. King _____ Assistant to Tennessee Valley Substation Superintendent
 R. C. Christopher, B. S. _____ Supt. Sand Mountain Substation, Crossville, Ala.
 J. M. Herderson, B. S. _____ Assistant to Sand Mountain Substation Superintendent
 J. P. Wilson, B. S. _____ Supt. Wiregrass Substation, Headland, Ala.
 K. G. Baker, B. S. _____ Supt. Black Belt Substation, Marion Junction, Ala.
 C. L. McIntyre, B. S. _____ Assistant to Black Belt Substation Superintendent
 Otto Brown, M. S. _____ Supt. Gulf Coast Substation, Fairhope, Ala.
 Harold Yates, B. S. _____ Assistant to Gulf Coast Substation Superintendent

*Assigned by the State Department of Agriculture and Industries.

**On leave.
 Sept. 1, 1931

The Relation of Quality of Cotton
To Prices Paid to Farmers
In Alabama

By

J. D. POPE

Head Professor of Agricultural Economics

CARL M. CLARK

Assistant Professor of Agricultural Economics

Table of Contents

INTRODUCTION	3
EXPLANATION OF TERMS USED	4
PROCEDURE	6
QUALITY OF COTTON PRODUCED IN ALABAMA, 1926-1930	6
Grade of Alabama Cotton	7
Staple Length of Alabama Cotton	8
Tenderability of Alabama Cotton	9
VARIATIONS IN PRICES IN LOCAL MARKETS	10
Variations in Prices for Same Quality	10
Variations in Prices Between Local Markets	14
PRICE DIFFERENCES PAID FOR QUALITY	15
Grade Differences	15
Staple Premiums and Discounts	24
LOCAL BUYERS AND GOVERNMENT CLASSIFICATION ..	29
SELLING IN ROUND LOTS	31
SPREADS BETWEEN FARM AND CENTRAL MARKETS	
PRICES	32
ECONOMIC ASPECTS OF VARIETIES	33
Varieties Grown by Farmers	33
Results of Experimental Tests of Varieties	36
SUMMARY	41
REFERENCES	41
APPENDIX	42

The Relation of Quality of Cotton to Prices Paid to Farmers in Alabama

INTRODUCTION

ALABAMA farmers often have been urged to produce cotton of better quality, especially with respect to length of staple. They have been advised generally that it would be to their economic advantage to do so. While it is known that the superior staple lengths are worth more for manufacturing purposes than the inferior lengths, it has not been known to what extent, if any, such differences in values are reflected in prices paid to farmers in Alabama. In fact, no information has been available on price differentials for either grades or staples in local markets in this State. This study was undertaken to determine the extent to which differences paid in central markets obtained in farmers markets, and to determine whether or not an economic basis exists for the improvement of the quality of the cotton produced in the State.

This study was conducted in cooperation with the Division of Cotton Marketing of the Bureau of Agricultural Economics of the United States Department of Agriculture. In 1926 and 1927, the Alabama Experiment Station was responsible for the collection of the samples of bales of cotton used in the study and for obtaining price data and other facts concerning those bales. In 1928, the samples and the data relating to them were collected cooperatively by the United States Department of Agriculture and the Alabama Experiment Station. In all three years, the Department of Agriculture classed the samples in accordance with government standards and supplied quotations of prices prevailing for different grades and staple lengths in central markets. A major portion of the analysis of the relations of quality and price was conducted by the Department of Agricultural Economics of the Alabama Experiment Station.

Appreciation is expressed to the many cotton buyers, ginners, warehouse men, farmers, and others in Alabama who cooperated

TABLE 1.—Number of Towns and Bales of Cotton Sampled, Alabama, 1926-1928.

Year	Number used in study		
	Towns	Bales sampled	Bales with price data
1926	14	5,047	3,328
1927	6	3,613	2,130
1928	11	8,996	8,996
Total	22	17,656	14,454

cordially in supplying a large part of the data used in this study. Acknowledgment is due several present and former members of the Department of Agricultural Economics for valuable assistance in collecting and analyzing data. Special credit is also due Messrs. Arthur W. Palmer, B. Youngblood, W. B. Lanham, and L. D. Howell of the Division of Cotton Marketing of the United States Department of Agriculture. Other members of the Division assisted in the collection and analysis of the data.

EXPLANATIONS OF TERMS USED

Quality of cotton: Grade and staple. Character is a third element of quality but is not considered in this bulletin.

Class: Grade and staple.

Grade: "The composite of: (1) The color, luster, and brightness of the lint; (2) the nature and amount of foreign matter present in the lint, such as leaf, dust, or other foreign matter; and (3) the preparation or ginning."¹

Staple length: The length of cotton fibers, quoted in eighths, sixteenths, or thirty-seconds of an inch. All staple lengths shorter than 7/8-inch are included in one group, namely, 13/16-inch and shorter.

Tenderable cotton: Those grades and staples that may legally be offered in the settlement of futures contracts made subject to Section 5 of the United States Cotton Futures Act.²

Point: One one-hundredth of a cent, referring to price per pound of cotton.

Differences: The "ons" and "offs" paid for grades, and premiums and discounts paid for staples. "On" means more than, "off" means less than the basis grade or staple. A minus sign preceding a difference figure indicates "off", or a discount.

Central markets differences and prices: Averages of the quotations of the 10 spot markets as reported by the United States Department of Agriculture, with the exceptions noted below. The ten spot markets are Augusta, Dallas, Galveston, Houston, Little Rock, Memphis, Montgomery, New Orleans, Norfolk, and Savannah. The ten spot markets quotations are used instead of the Montgomery quotations because only a small proportion of Alabama cotton is sold on the Montgomery market, and the averages of the ten spot markets are more widely representative of values. These markets have been designated by the Secretary of Agriculture for the purpose of furnishing official quotations of average commercial differences for grades which are to be used in the settlement of grade differences for cotton delivered on futures contracts.² The price quotations for the ten spot markets represent the prices at which cotton was purchased by cotton merchants and shippers from loca

buyers, or from growers selling cotton in large lots. Averages of the quotations of the New Orleans and Memphis markets were used for staple premiums in 1926 and 1927. In 1928, for 15/16-inch and 1 inch cotton, averages of the quotations of the six spot markets giving quotations for staple premiums were used. Averages of the quotations for Memphis and New Orleans were used for staple premiums of lengths longer than 1 inch. The discounts used for cotton with a staple length of 13/16-inch and shorter were the discounts of the New Orleans, Houston, and Galveston markets for 13/16-inch staple, as reported by the United States Department of Agriculture.³

Farmers or local markets differences: The "ons" and "offs" for individual bales of different grades and staples as calculated from the average prices received by farmers for the basis grade and staple on the same day in the same town.

Farm price: The price received by farmers for cotton in local markets. No deductions were made for storage or other charges.

Basis: The grade from which "ons" and "offs" are calculated. For example, if Strict Middling is quoted as 25 points "on", basis Middling, it means Strict Middling is selling for 25 points more than Middling.

Spread: The difference between farm price and central markets price. A *plus spread* is one in which the central markets price is more than the farm price. A *minus spread* is one in which the central markets price is less than the farm price.

Range: The difference between lowest and highest of a given group of prices.

Round lot: Two or more bales sold at one average price per pound.

Marketing season: August 1 to July 31, inclusive.

Abbreviations used for grades:

M.F. = Middling Fair	M. = Middling
S.G.M. = Strict Good Middling	S.L.M. = Strict Low Middling
G.M. = Good Middling	L.M. = Low Middling
S.M. = Strict Middling	S.G.O. = Strict Good Ordinary
G.O. = Good Ordinary	

Abbreviations used for colors:

Sp. = Spotted	Lt. Yel. St. = Light Yellow Stained
Yel. Tinged = Yellow Tinged	
Yel. St. = Yellow Stained	Blue St. = Blue Stained

Unless stated otherwise the color is white. For example, G. M. means Good Middling White; G.M.Sp. means Good Middling Spotted.

PROCEDURE

Collection of samples.—In each of the three years of the study, samples of individual bales were collected during the active months of the ginning season at towns or gins in different regions of the State. In 1926 and 1927, the samples were collected weekly, and drawn in an approved manner, both sides of the bale being represented. In 1928, samples were drawn directly from the press box during the process of ginning. Each sample was given a number for identification. The number of towns in which samples were collected, the number of bales sampled, and the number on which price data were obtained are given in Table 1.

Classification of samples.—All samples were classed by government classers in accordance with official cotton standards of the United States. The samples obtained in 1926 and 1927 were classed in Washington and those obtained in 1928 were classed in Atlanta, Georgia.

Obtaining data on bales sampled.—The date of sale and the exact price paid to the farmer for each bale were obtained for as many as possible of the bales sampled. Buyers grades were obtained at four towns in 1926 and at one town in 1928. All data were taken from the records of buyers. Cotton sold in round lots was kept separate from cotton sold as single bales.

Obtaining data on varieties.—Farmers in six counties, who had produced cotton in 1928 on which government classification and price data had been obtained, were interviewed concerning the variety of cotton grown, yield per acre, and other factors. Data were obtained on these bales from gins as to weights of seed, lint, and tare.

Analysis.—The general procedure followed in analyzing the relations between quality of cotton and prices paid to farmers, consisted in determining (1) differences in prices paid to farmers for different grades and staples, (2) spreads between farm prices and central markets prices, and (3) ranges from lowest to highest prices for given groups of bales. Detailed descriptions of the methods of calculating differences and spreads are given later in this bulletin. Farmers differences were compared with central markets differences. The significance of spreads and ranges was noted in relation to price differentials for quality in local markets.

QUALITY OF COTTON PRODUCED IN ALABAMA, 1926-1930

The data on quality of Alabama cotton cover the five-year period 1926 to 1930; the data on prices as affected by quality refer to 1926, 1927, and 1928. The data on quality for 1926 and 1927 were based on samples collected by the Alabama Ex-

periment Station representing different regions of the State and constituted 0.34 per cent and 0.30 per cent, respectively, of the total crops produced in each of those years. The data on quality for 1928, 1929, and 1930 were based on the grade and staple estimates of the United States Department of Agriculture. Samples collected included in each of those years from 5 to 10 per cent of the total production.

TABLE 2.—Percentage Distribution of Staple Length as Determined from 10 Per Cent and 0.3 Per Cent Samples of Alabama Cotton Crop of 1928.

Staple length Inches	Per cent	
	10 per cent sample ^a	0.3 per cent sample ^b
13/16 and shorter	24.0	20.6
7/8	69.7	71.6
15/16	4.5	7.2
1 and longer	1.8	0.6
Total	100.0	100.0

^aGrade and staple estimates of U. S. Department of Agriculture, Table 28.

^bBales used in price analysis in this study.

Evidence that a sample as small as three-tenths of one per cent may be considered fairly dependable in estimating the relative amounts of leading grades and staples in Alabama was provided by a random selection of 3,595 bales from 7,135 single bales used in the price analysis for 1928. This constituted a sample of 0.3 per cent of the 1928 crop. The results from this small sample may be compared with those obtained from the 10 per cent sample on which was based the grade and staple estimate of the crop of 1928 made by the United States Department of Agriculture. The differences in results obtained from the larger and smaller samples are relatively greatest for the staple lengths longer than 7/8-inch, which represent a small percentage of the total. For a year to year comparison, therefore, of the percentages of 13/16-inch and shorter and 7/8-inch staple, the samples obtained in 1926 and 1927 appear to be useful. Similarly, the data for 1926 and 1927 should serve to give a fairly reliable picture of the composition of the crops of those years for leading grades.

Grade of Alabama Cotton

During the period 1926 to 1930, 77 per cent of Alabama cotton was Middling White and above (Table 3). Ten per cent was White below Middling. Cotton spotted in color amounted to about 12 per cent. Light Yellow Stained, Gray, Blue Stained, and Below Grade cotton for the five-year period averaged less than one per cent of the total crop. Over four-fifths of Alabama cotton was white in color from 1926 to 1930. In general, the

grades of the Alabama crop have been good and compare favorably with grades produced in the United States as a whole. Eighty-one per cent of Alabama cotton for 1928, 71 per cent for 1929, and 73 per cent for 1930 was Middling White and above as compared with 72, 66, and 73 per cent, respectively, for the United States. A smaller percentage of white cotton produced in Alabama in 1928, 1929, and 1930 was below Middling than was true of the United States crop. During the same years a larger percentage of Alabama cotton was spotted than for the United States.

TABLE 3.—Percentage of Different Grades of Cotton Produced in Alabama, 1926-1930, and in the United States, 1928-1930.

Grade and color	Per cent							
	Alabama					United States		
	1926 ^a	1927 ^a	1928 ^b	1929 ^b	1930 ^b	1928 ^b	1929 ^b	1930 ^b
White, Middling and above	69.6	90.0	81.1 ^c	71.4	73.3 ^c	72.0 ^c	66.4 ^c	72.7 ^c
White, below Middling	12.4	3.1	3.8 ^c	15.6	15.1 ^c	15.0 ^c	21.1 ^c	18.0 ^c
Spotted, all grades	16.5	6.1	14.7	11.8	11.0	11.5	10.8	8.7
Other grades and colors	1.5	0.8	0.4	1.2	0.6	1.5	1.7	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^aBased on samples collected by Alabama Experiment Station, (Appendix Tables 26 and 27.)

^bBased on grade and staple estimates of U. S. Department of Agriculture, (Alabama, Appendix Tables 28, 29 and 30).

^cIncludes Extra White grades.

In 1926, 1927, 1928, and 1930, the modal or most common grade was Strict Middling White, which accounted for 30 per cent, 48 per cent, 50 per cent, and 36 per cent, respectively, of the production in those years. In 1929, Middling White was the most common grade, comprising 35 per cent of the total bales. Strict Middling White was second in importance and comprised 33 per cent of the total bales.

Staple Length of Alabama Cotton

Certain outstanding facts may be noticed with respect to the staple of the Alabama cotton crop. The first is that a large proportion of the crops produced from 1927 to 1930 has fallen below 7/8-inch in staple length, amounting to 45 per cent in 1929 (Table 4). The cotton of a staple length 1 inch or longer did not comprise more than one or two per cent of the total bales sampled in any of the five years for which data were presented.

For the five-year period 99 per cent of the Alabama crop consisted of 13/16-inch and shorter, 7/8-inch, and 15/16-inch staple. The staple length of the State's crop suffered considerable deterioration from 1926 to 1930.

TABLE 4.—Percentage of Different Staple Lengths of Cotton Produced in Alabama, 1926-1930, and in the United States, 1928-1930.

Staple length	Per cent							
	Alabama					United States		
Inches	1926 ^a	1927 ^a	1928 ^b	1929 ^b	1930 ^b	1928 ^b	1929 ^b	1930 ^b
13/16 and shorter	0.7	14.7	24.0	44.8	38.6	14.4	20.1	13.4
7/8	92.4	84.3	69.7	52.6	55.4	41.7	38.1	38.8
15/16	6.3	0.8	4.5	2.2	5.2	22.8	18.9	24.9
1 and longer	0.6	0.2	1.8	0.4	0.8	21.1	22.9	22.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^aBased on samples collected by Alabama Experiment Station, (Appendix Tables 26 and 27).

^bBased on grade and staple estimates of U. S. Department of Agriculture, (Alabama, Appendix Tables 28, 29 and 30).

The staple length of Alabama cotton compares unfavorably with the United States as a whole. During the years 1928, 1929, and 1930, 24 per cent, 45 per cent, and 39 per cent, respectively, of Alabama cotton was 13/16-inch and shorter as compared with 14 per cent, 20 per cent, and 13 per cent, respectively, for the United States. Approximately 22 per cent of the United States cotton crop was 1 inch or longer in staple length for the years 1928, 1929, and 1930 as compared with only about one per cent for Alabama during the same years.

Tenderability of Alabama Cotton

The relatively large amounts of untenderable cotton in Alabama in 1927, 1928, 1929, and 1930 were due almost entirely to the 13/16-inch staple and shorter produced in those years (Table 5). The fact that cotton is untenderable does not mean that it is not usable or does not have a market. At the same time, the seasonal average discount for 13/16-inch staple increased from 67 points to 108 points.³ A greater proportion of the Alabama crop was untenderable than of the United States crop from 1928 to 1930. Twenty-four per cent of Alabama cotton was untenderable in 1928 as compared with 18 per cent for the United States as a whole.

TABLE 5.—Percentage of Untenderable Cotton Produced in Alabama, 1926-1930, and in the United States, 1928-1930

Tenderability	Per cent							
	Alabama					United States		
	1926 ^a	1927 ^a	1928 ^b	1929 ^b	1930 ^b	1928 ^b	1929 ^b	1930 ^b
Untenderable in grade only	1.8	0.6	0.3	1.2	1.2	3.5	4.1	2.0
Untenderable in staple only	0.6	14.5	23.8	42.0	37.0	12.5	18.3	12.8
Untenderable in both grade and staple	0.2	0.2	0.2	2.9	1.6	1.8	1.9	0.6
Total untenderable	2.6	15.3	24.3	46.1	39.8	17.8	24.3	15.4
Total tenderable	97.4	84.7	75.7	53.9	60.2	82.2	75.7	84.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^aBased on samples collected by Alabama Experiment Station, (Appendix Tables 26 and 27).

^bBased on grade and staple estimates of U. S. Department of Agriculture, (Alabama, Appendix Tables 28, 29 and 30).

VARIATIONS IN PRICES IN LOCAL MARKETS

Variations in Prices for Same Quality

Prices paid to farmers for identical classes of cotton were characterized by wide ranges from highest to lowest price. Extreme instances occurred in 1926 of ranges as high as 400 points, and in 1927 and 1928 of about 300 points (Table 6). The average range was 77 points in 1926, 49 points in 1927, and 35 points in 1928 for all instances of the sale of two or more bales of the same grade and staple in the same town on the same day. The narrowing of the ranges from 1926 to 1928 corresponded to the increasing stability of the cotton price level over the three year period. There was no variation in about 17 per cent of the instances during the three years. There seems to be a tendency for buyers to vary their prices at intervals of 25, 50, 75, and 100 points. The 25-point intervals from zero to 100 points for the three years included about 42 per cent of the total number of instances.

The ranges were wider for the lower grades than for the higher grades. The average range in 1926 for Good Middling was 50 points, for Strict Middling 75 points, and for Middling 91 points (Table 6). Enough instances of sales of Strict Low Midd-

TABLE 6.—Average and Highest Ranges in Prices Paid for Specified Grades of Cotton Sold in the Same Town on the Same Day, 1926-1928.

Year	Grade 7/8-inch staple	No. of in- stances of 2 or more bales sold in same town on same day	Average range in points	Highest range in points	Per cent of instances where the range was					Per cent of instances where range was 0, 25, 75, and 100 points
					Zero points	25 points	50 points	75 points	100 points	
1926	G.M.	69	50	405	21.7	11.6	10.1	0	5.8	49.2
	S.M.	172	75	350	16.9	5.8	5.8	3.5	8.1	40.1
	M.	144	91	310	12.5	6.2	7.6	6.2	9.7	42.2
	Total or average	385	77	405	16.1	7.0	7.2	3.8	8.3	42.4
1927	G.M.	29	24	105	27.6	6.9	0	6.9	0	41.4
	S.M.	105	48	275	16.2	7.6	7.6	4.8	1.9	38.1
	M.	72	60	239	15.3	6.9	1.4	6.9	8.3	38.8
	Total or average	206	49	275	17.4	7.7	4.3	5.8	3.8	39.0
1928	G.M.	63	23	111	22.2	4.8	6.3	1.6	0	34.9
	S.M.	394	31	175	17.5	14.7	5.6	3.6	2.8	44.2
	M.	197	46	310	18.8	9.2	8.7	7.1	5.6	49.4
	Total or average	654	35	310	18.3	12.1	6.6	4.4	3.4	44.8

ling and other low grades were not available to give a significant average range for those grades. A similar tendency for the average range to be wider with the lower grades occurred in both 1927 and 1928. For the three-year period the average ranges for Good Middling, Strict Middling, and Middling were 32 points, 51 points, and 66 points, respectively. The higher grades had a greater percentage of the total instances with no variation in price than did the lower grades. In 1926, the percentage of total instances with no variation in price was 22 for Good Middling, 17 per cent for Strict Middling, and 12 per cent for Middling. There was a similar tendency in 1927 and 1928. The most probable explanation of the narrower ranges in the better grades appears to lie in the fact that higher grades were more easily identified as "good cotton" than the lower grades which gave more difficulty in determining their true values.

The range tended to increase as the number of bales included in a given instance increased. In 1926, an average range for Good Middling, Strict Middling, and Middling was 51 points for the sale of two bales, 67 points for 3 bales, 85 points for 4 bales, and 117 points for 5 bales. A similar tendency existed in 1927 and 1928 (Table 7). As the number of bales increased a wider sampling of the market was obtained, and a more representative measure of ranges was provided. With the larger number of bales a wider range would be expected, but successive increases in size of sample resulted in smaller increases in the range.

An explanation of the wide ranges in farm prices is not to be found in the much smaller daily ranges which occurred on the futures exchanges. The average daily range of quotations on the New York futures exchange from August to December, inclusive, in 1926 was 25 points, and the highest range for any one day was 137 points (Table 8). The average daily range for the same months in 1927 was 47 points. Twice during this period the price varied as much as 200 points which was the limit under the rules of the exchange.

Further investigation is needed to determine the causes of these irregular variations in local markets. Probably the leading causes, however, were imperfections such as the following:

- (1) Lack of accurate knowledge on the part of buyer or seller or both of the true quality and value of the cotton.
- (2) Necessity of making immediate sales or purchases on the part of buyer or seller.
- (3) Opportunity of the buyer to make a profit from the farmer on a transaction other than the cotton purchased.
- (4) Other factors affecting the bargaining power of buyer or seller.

The variations in prices paid for the same quality of cotton, as given above, are significant in the problem of paying farmers

TABLE 7.—Average Ranges in Prices for Numbers of Bales Indicated of Specified Grades Sold in Same Town on Same Day, 1926, 1927, and 1928.

Year	Grade 7/8- inch	Number of instances of two or more bales sold in same town on same day					Average range in points				
		2 bales sold	3 bales sold	4 bales sold	5 bales sold	Total	2 bales sold	3 bales sold	4 bales sold	5 bales sold	All instances
1926	G.M.	21	16	7	7	51	42	28	120	51	60
	S.M.	54	40	22	16	132	51	78	72	111	78
	M.	56	38	14	14	122	59	95	62	188	101
	Total or Average	131	94	43	37	305	51	67	85	117	80
1927	G.M.	18	7	2	1	28	13	23	90	62	47
	S.M.	31	21	22	9	83	36	37	49	76	50
	M.	27	16	9	10	62	28	57	86	86	64
	Total or Average	76	44	33	20	173	26	39	75	75	54
1928	G.M.	19	16	7	7	49	21	16	35	27	25
	S.M.	115	87	48	29	279	19	31	35	31	29
	M.	80	50	16	10	156	28	45	56	46	44
	Total or Average	214	153	71	46	484	23	31	42	35	33

TABLE 8.—Daily Range in New York Futures, August to December, 1926-1928.

Year	Month of quotation	Future delivery month	Range in points		
			Smallest range on one day	Largest range on one day	Average range for month
1926	August	Oct.	10	116	31
	September	Dec.	9	137	33
	October	Dec.	12	77	30
	November	Dec.	4	34	15
	December	Jan.	7	30	17
	August to December			4	137
1927	August	Oct.	23	200	58
	September	Dec.	18	200	68
	October	Dec.	21	88	48
	November	Dec.	13	143	34
	December	Jan.	11	58	29
	August to December			11	200
1928	August	Oct.	0	165	46
	September	Dec.	13	78	31
	October	Dec.	10	47	28
	November	Dec.	7	68	24
	December	Jan.	7	66	18
	August to December			0	165

for their cotton in accordance with its quality. As will be shown later, such variations were often greater than variations based on differences paid in accordance with quality in central markets. Farmers sometimes receive more than their cotton is worth, and sometimes less. Such a lack of exactness in price making indicates that changes in local marketing methods are needed if farmers are to be rewarded accurately for the grade and staple length of their cotton.

Variations in Prices Between Local Markets

The average prices paid for cotton of identical quality varied markedly between the different local markets. In 1926, the price levels for 12 towns covered a range of 140 points, in 1927 for 5 towns a range of 67 points, and in 1928 for 10 towns a range of 85 points (Table 9). The relative price levels of different towns were calculated from prices of bales of the most representative grades and staple lengths sold on the same day in respective towns. The town with the lowest price level was used as the base, and its level represented by O. The levels of the other towns were expressed as the number of points each one was

TABLE 9.—Relative Price Levels of Alabama Towns Indicated, 1926, 1927, and 1928.

Town	Number of bales	Average local market price level	Town	Number of bales	Average local market price level
1926					
E	108	0	M	26	92
J	80	53	K	18	92
C	75	82	A	44	95
N	48	83	O	36	108
L	109	85	G	255	120
B	115	92	D	45	140
1927					
E	48	0	C	100	46
A	41	24	L	120	67
H	185	24			
1928					
R	355	0	V	334	27
T	233	3	Q	163	31
U	339	12	N	261	61
L	588	17	S	169	77
J	381	24	P	491	85

higher than the base town. Towns with a very small number of bales were omitted.

The causes of these differences in price levels cannot be adequately explained from data obtained in this study. Some of the factors which appear to influence price levels are nearness to cotton mills, freight rates, competition among buyers, and the reputation for staple length of the given local market. Freight rates to important cotton consuming centers from each of the local markets had an average range of about 30 points and therefore do not account for a major portion of the variations.

PRICE DIFFERENCES PAID FOR QUALITY

Different grades and staples of cotton possess different utilities for manufacturing purposes, and accordingly, prices paid by consuming establishments would be expected to vary with quality. The measures used for differences paid for different qualities were those quoted in central markets.

Grade Differences

Differences paid to farmers for different grades (7/8-inch staple only) were calculated from prices received by farmers. The Strict Middling grade was used as a basis in making all comparisons because it was the most representative. Prices for given bales were compared only with other bales sold on the same day and in the same town, thereby avoiding errors that

might be caused by day to day fluctuations in prices, and possible differences in prevailing price levels in different towns. Averages were calculated for all towns for each season. These average differences were converted from the Strict Middling base to the Middling base in order that they might be compared with central markets differences.

According to the grade and staple classifications as given in Appendix Tables 26, 27, and 28, from 31 to 56 classes of cotton were produced in Alabama in 1926, 1927, and 1928. Seven of these classes, however, contain the bulk of the cotton produced in the State, and the bales of these grades having 7/8-inch staple length were used in calculating farmers differences. These grades were Good Middling, Strict Middling (used as basis), Middling, Strict Low Middling, Good Middling Spotted, Strict Middling Spotted, and Middling Spotted. They included, (7/8-inch staple), 87 per cent, 84 per cent, and 69 per cent of the State's production in 1926, 1927, and 1928, respectively, according to the samples obtained.

The average differences paid for these grades in central markets and in farmers markets, together with the number of bales on which the calculations were based, are shown for each of the three seasons in Table 10, and illustrated graphically in Figure 1. These data indicate a tendency on the part of cotton buyers to pay farmers more for the better grades than for the poorer grades.

TABLE 10.—Average Differences Paid Farmers in Alabama and in Central Markets for Grades Indicated, Basis Middling 7/8, 1926-1928.

Class 7/8-inch staple	Number of bales			Differences paid farmers			Differences paid in central markets		
				Number of points			Number of points		
	1926	1927	1928	1926	1927	1928	1926	1927	1928
G.M.	319	109	352	63	40	14	67	71	40
S.M.	782	449	2,067	52	37	11	47	47	26
M.	468	251	818	Basis	Basis	Basis	Basis	Basis	Basis
S.L.M.	178	32	116	-127	-46	-27	-99	-76	-77
G.M. Sp.	78	13	240	30	8	8	6	23	23
S.M. Sp.	153	18	707	-43	4	0	-18	-4	-3
M. Sp.	101	10	86	-145	-41	-27	-101	-64	-74

In 1926, the differences paid farmers were relatively wider in the Spotted grades than in the White grades. For that year, in the White grades, farmers differences showed a trend from 94 per cent of central markets differences for Good Middling to 128 per cent for Strict Low Middling. The trend in the Spotted grades was in the opposite direction and moved from 500 per cent for Good Middling Spotted to 144 per cent for Middling Spotted (Table 11). The crop of 1926 was characterized by a relatively large proportion of low grades as compared with the

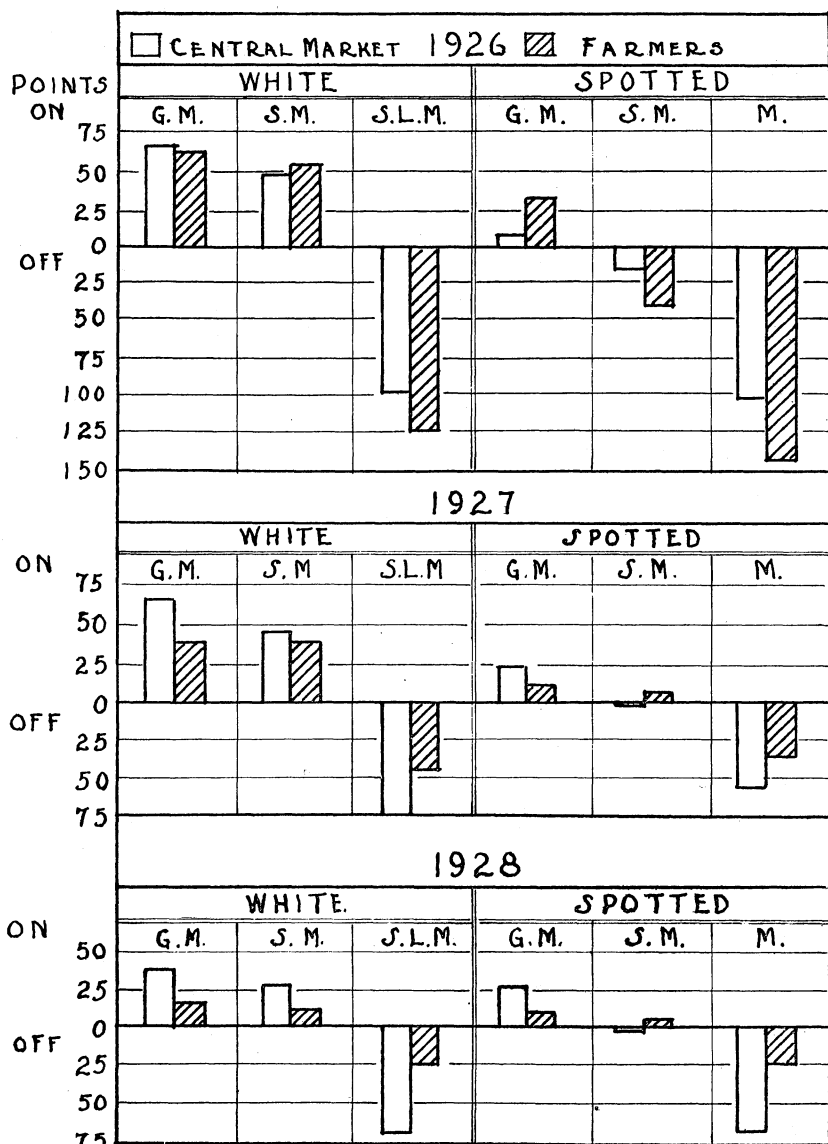


FIGURE 1.—Price differences paid farmers in Alabama and price differences paid in central markets for cotton of grades indicated, basis Middling 7/8, 1926-1928.

other two years. Approximately 30 per cent of the crop consisted of White below Middling, and colors other than White, as compared with 10 per cent and 19 per cent, respectively, in 1927 and 1928 (Table 3).

In 1927, as in the preceding year, more was paid on the average for the better grades than for the poorer grades. There was the same tendency in 1928 to pay more for the better grades although the differences were narrower than in the other two years. There was a narrowing of differences both in central markets and in farmers markets from 1926 to 1928. Farmers differences, however, narrowed more markedly over this period than central markets differences. The range in differences in central markets from the number of points "off" for Strict Low Middling to the number of points "on" for Good Middling was 166 points in 1926, 147 points in 1927, and 117 points in 1928. The corresponding range in farmers differences for the same grades for the same period was 190 points in 1926, 86 points in 1927, and 41 points in 1928.

TABLE 11.—Per Cent Alabama Farmers Differences were of Central Markets Differences for Grades Indicated, Basis Middling 7/8-inch, 1926-1928.

Class	Per cent		
	1926	1927	1928
7/8-inch staple			
G.M.	94	56	35
S.M.	111	79	42
S.L.M.	128	61	35
G.M. Sp.	500	35	35
S.M. Sp.	239	a	0
M. Sp.	144	64	36

^aFarmers difference 4 points "on", central markets difference 4 points "off".

Ratio of Farmers Grade Differences to Central Markets Differences.—In 1926, the farmers differences were larger than those paid in central markets except for Good Middling in which case the farmers difference was 94 per cent of the central markets differences (Table 11). The ratio of farmers differences to central markets differences was much wider in 1926 than in 1927, and wider in 1927 than in 1928. A possible explanation of the wide differences paid farmers in 1926 is found in the fact that the cotton market was upset by the extremely large crop of that year. The average daily price of Middling in the central markets from September 1 to December 31 had a range from high to low of 6.46 cents. In 1927, the range for the corresponding period was 5.03 cents and in 1928, 2.98 cents.

In 1927, the ratio of farmers differences to central markets differences ranged from 35 per cent for Good Middling Spotted to 79 per cent for Strict Middling, except for Strict Middling

Spotted for which the farmers received a slight "on" difference as compared with a slight "off" difference. In 1928, unlike the other years, ratios of farmers differences to central markets differences were fairly similar for each of the grades, ranging from 35 per cent to 42 per cent, except for Strict Middling Spotted for which farmers obtained no difference as compared with 3 points "off" in the central markets. In the case of the latter grade, central markets prices were practically identical with those for Middling and the same was true in farmers markets.

Farmers differences for the grades of white cotton in each of the three years were less than those paid in the central markets except for Strict Middling and Strict Low Middling in 1926. Farmers received greater differences for spotted cotton in 1926 than those reported in central markets. In 1927 and 1928, farmers differences for Strict Middling Spotted varied only slightly from central markets differences, but in both years were slightly above the latter.

Frequency Distribution of Grade Differences.—Although the average differences paid to farmers, as given in Table 10, indicate definite tendencies on part of buyers to pay farmers more for the better grades than for the poorer grades, they are far from indicating an exact differentiation in the price paid for each individual bale. Instances quite commonly occurred in which the better grades brought lower prices than the lower grades. Although the differences paid for different grades have significance as averages, an examination of the frequency distributions of these differences throws further light on the payment of such differences. The frequency distributions for the most common grades are illustrated in Figures 2, 3, and 4. Some of the bales having extreme differences are not shown.

An outstanding characteristic of the distribution of the differences was that they cover an extremely wide range. For example, the differences paid for Good Middling in 1926 ranged from 122 points "off" Strict Middling to 202 points "on" Strict Middling. The differences paid for Strict Low Middling covered the extreme range of from 681 points "off" Strict Middling to 130 points "on" Strict Middling. The range of differences in 1927 was not as great as in 1926, and in 1928 was much narrower than those in either 1926 or 1927.

The ranges involve only the two extreme cases, the highest and lowest differences in the given distribution. A more significant description of the distribution is afforded by the standard deviation. The standard deviation is a statistical measure which gives the number of units to be added to and taken from the average in order to obtain a range within which would be included, in a normal distribution, about 68 per cent of the total number of units. For example, the average difference paid for Good Middling in 1928 was 3 points "on" Strict Middling. The stand-

TABLE 12.—Ranges and Standard Deviations of Differences Paid in Local Markets in Alabama for Specified Grades, Basis Strict Middling 7/8-inch, 1926-1928.

Year	Grade 7/8-inch	Number of bales	Average difference in points	Range in points	Stand- ard devia- tion in points	Per cent bales included in one standard devi- ation above and below average difference	Per cent bales which sold		
							Above S.M.	Same as S.M.	Below S.M.
1926	G.M.	319	11	324	41.5	84.0	50.2	13.5	36.3
	M.	468	- 52	584	79.9	77.1	20.3	4.9	74.8
	S.L.M.	178	-179	811	117.8	71.1	2.0	3.4	94.6
	S.M. Sp.	153	- 95	591	106.9	72.8	16.1	3.2	80.7
1927	G.M.	109	3	242	35.9	72.6	48.7	11.9	39.4
	M.	251	- 37	550	60.1	78.8	21.5	8.8	69.7
1928	G.M.	352	3	203	19.3	81.8	53.0	11.3	35.7
	M.	818	- 11	394	37.5	75.5	37.1	11.9	51.0
	S.L.M.	116	- 38	267	49.8	77.8	18.2	9.5	72.3
	S.M. Sp.	707	- 11	275	36.2	77.6	31.4	16.8	51.8

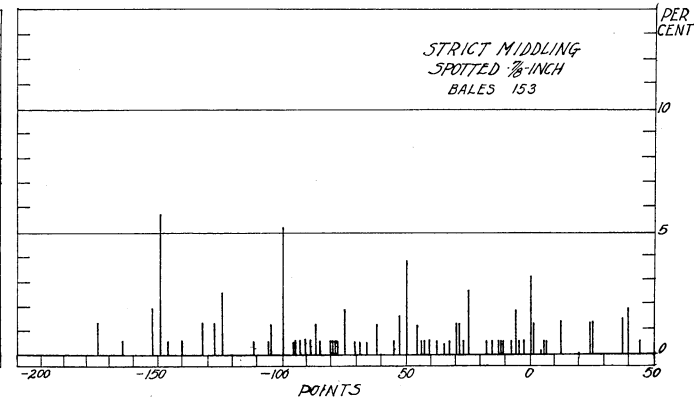
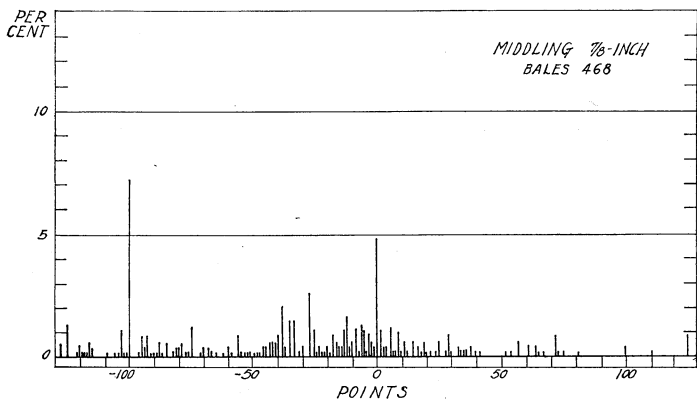
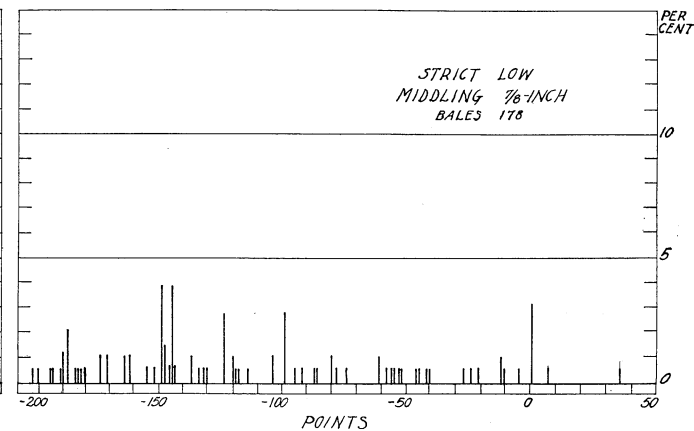
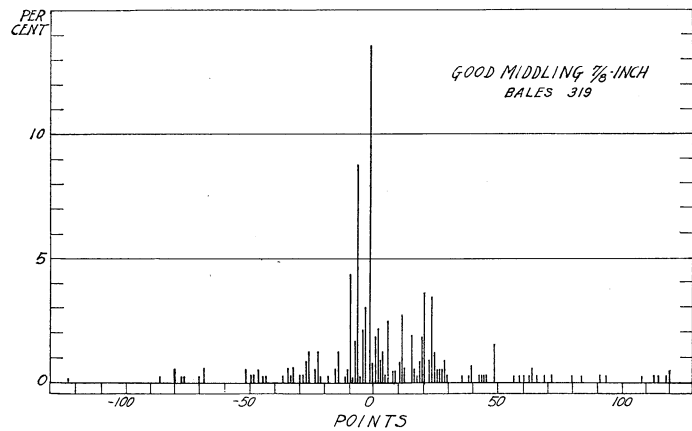


FIGURE 2.—Percentage distributions of differences in prices paid farmers in Alabama for cotton of grades indicated, basis Strict Middling $\frac{7}{8}$, 1926 (Some of the bales having extreme differences are not shown).

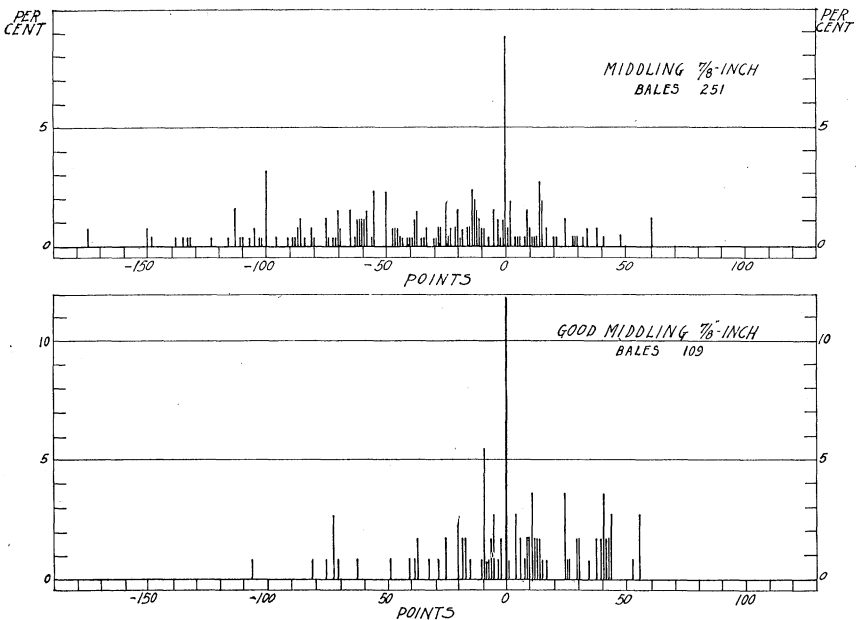


FIGURE 3.—Percentage distributions of differences in prices paid farmers in Alabama for cotton of grades indicated, basis Strict Middling 7/8, 1927 (Some of the bales having extreme differences are not shown).

ard deviation of the differences was 19.3 points (Table 12). The addition of 19.3 points to 3 points "on," or 22.3 points "on", and the subtraction of 19.3 points from 3 points "on," or 16.3 points "off", gives a range within which actually 82 per cent of the bales were included. This indicates that the distribution was more peaked than normal.

Although very few bales were sold at exactly the average differences, it is significant that in the distributions of differences many more bales were sold at certain points along the scale of differences than at other points. For most grades, more bales were sold at a difference of zero, that is, at the same price as Strict Middling, than at any other point. This was especially true of Good Middling in all years and of Middling and Strict Middling Spotted in 1928.

In the distributions of differences for Middling, Strict Low Middling, and Strict Middling Spotted in 1926, and for Strict Low Middling in 1928 more bales were centered around 50, 75, 150, and 200 points "off" than any other point in the distributions of differences. This indicates that differences were made in terms of cents, half cents, or quarter cents; for example, 13.9 per cent of Strict Low Middling bales in 1928 brought a difference of 75 points "off" Strict Middling which was a larger percentage than

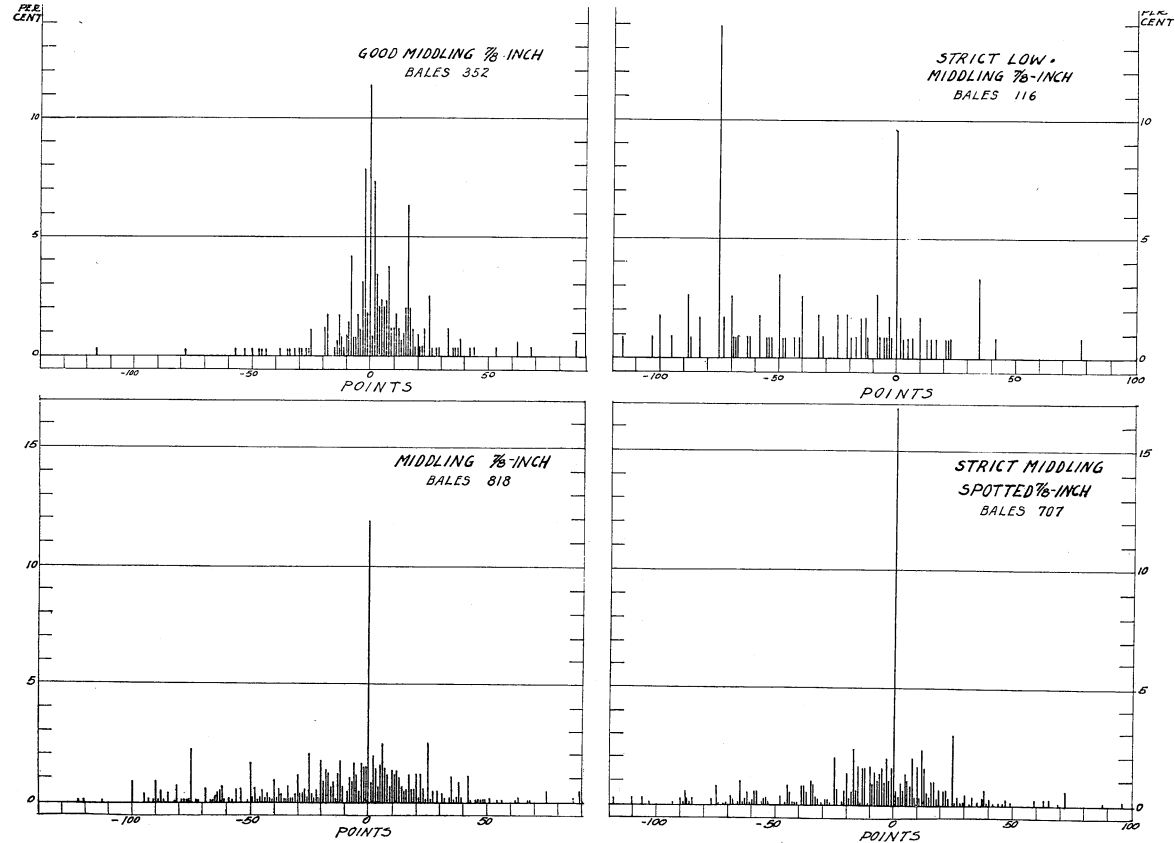


FIGURE 4.—Percentage distributions of differences in prices paid farmers in Alabama for cotton of grades indicated, basis Strict Middling 7/8, 1928 (Some of the bales having extreme differences are not shown).

for any other difference. This difference was almost identical with the average difference quoted in central markets for the difference of Strict Low Middling, which was 77 points "off" Middling. This suggests that farmers were more often paid differences for Strict Low Middling than for any other grade. Although the wide dispersion of the differences might appear to destroy the significance of the average differences, as calculated, there was unmistakable evidence of the payment for individual bales of certain amounts "off" for Middling, Strict Low Middling, and Strict Middling Spotted.

Staple Premiums and Discounts

Differences paid to farmers for different staple lengths were calculated from a base of 7/8-inch staple. Comparisons were made only of bales of the same grade sold in the same town on the same day. Eight tenderable grades were used for this purpose. Averages were calculated for all towns for each season.

Central markets differences for staple in 1926 and 1927 were reported in terms of monthly averages for Middling White cotton. In calculating the central markets differences for the bales used in this study for those two years, the differences quoted for Middling were used. In 1928, central markets differences for staple were quoted separately for each grade and the central markets differences were calculated on that basis. Staple differences paid to farmers in Alabama and in central markets are given in Table 13.

TABLE 13.—Average Differences Paid Farmers in Alabama and in Central Markets for Staple Lengths Indicated, Basis 7/8-inch, 1926-1928.

Staple length	Number of bales			Differences paid farmers			Differences paid in central markets		
				Number of points			Number of points		
	1926	1927	1928	1926	1927	1928	1926	1927	1928
Inches									
13/16	15	87	1,202	-24	-10	-1	-100	-83	-54
15/16	135	a	412	1	a	1	61		28
1	a	b	25	a	b	2			82

^aNumber of bales too small for significant results.

^bNo data.

During the three years of the study, 99 per cent of the Alabama crop was composed of 13/16-inch, 7/8-inch, and 15/16-inch cotton. Cotton of 1 inch staple and longer constituted such a very small proportion of the crop that the number of bales available for determining the differences, if any, paid for these longer lengths was too small for reliable results.

In 1926, a year characterized by wide variations in prices and in grade differences, farmers received a premium of only one point for 15/16-inch over 7/8-inch, whereas a premium of 61

points was paid in central markets. An average premium of one point was paid farmers for 15/16-inch cotton in 1928. There was no evidence in these data that distinction was made in local markets between 7/8-inch and 15/16-inch cotton in purchases from farmers. In 1926 and 1928, premiums of 61 points, and 28 points, respectively, were paid in central markets for 15/16-inch cotton.

Interest in quality of the Alabama cotton crop is centered in the large amount of cotton shorter than 7/8-inch in staple length. The average discount paid farmers for 13/16-inch and shorter amounted to 24 points for 15 bales in 1926, 10 points for 87 bales in 1927, and one point for 1,202 bales in 1928. These data indicate a slight tendency in 1926 and 1927 to pay discounts for 13/16-inch and shorter, but the large sample obtained in 1928 showed no such tendency. In 1926, the range from the discount paid in local markets for 13/16-inch and shorter to the premium for 15/16-inch amounted to 25 points, as compared with 161 points in central markets. In 1928, the corresponding range in local markets was 2 points as compared to 82 points in central markets.

The highest average discount paid in central markets for Middling 13/16-inch cotton in any month from August, 1924, the earliest date for which quotations are available, to April, 1930, was 150 points, which prevailed from August to December, inclusive, in 1925; in December, 1929; and in January, 1930.³ The lowest average monthly discount was 50 points from August to October, inclusive, in 1924, and from August to October in 1928. The yearly average discount ranged from 67 points in 1928-29 to 125 points in 1925-26. No quotations were available as to discounts paid for 3/4-inch staple or shorter in central markets. Some of the bales of cotton used in this study were shorter than 13/16-inch in staple length, but only discounts applying to 13/16-inch were used for those lengths.

Except for the discounts paid for 13/16-inch staple and shorter in 1926 and 1927, which were 24 and 12 per cent, respectively, of central markets discounts, the discounts paid farmers for 13/16-inch and shorter and premiums paid for 15/16-inch formed an insignificant portion of the differences paid in central markets (Table 14). The data afforded by the present study indicate that no such marked premiums and discounts were paid for staple length to farmers in Alabama as were paid in central markets. Very little distinction, if any, was made between 13/16-inch and shorter, 7/8-inch, and 15/16-inch staple, in the purchase of individual bales from farmers in 1926, 1927, and 1928.

Frequency Distribution of Staple Premiums and Discounts.—

A study of the frequency distribution of staple differences also shows that no marked premiums or discounts were paid to farmers in Alabama for staple length. The frequency distributions

TABLE 14.—Per Cent Farmers Differences in Alabama were of Central Markets Differences for Staple Lengths Indicated, Basis 7/8-inch, 1926-1928.

Staple length Inches	Per cent		
	1926	1927	1928
13/16	24	12	2
15/16	2	a	4
1	a	b	2

^aNumber of bales too small for significant results.

^bNo data.

of staple differences for 15/16-inch in 1926, for 13/16-inch and shorter, and 15/16-inch in 1928 are illustrated in Figure 5. Some of the bales having extreme differences are not shown.

Approximately 46 per cent of the bales of 13/16-inch staple and shorter sold at prices above and 41 per cent sold at prices below 7/8-inch staple in 1928. The tendency was for staple differences to group around the zero point. More than twice as many bales were bought at the same price as 7/8-inch than at any other price. If a tendency had existed in local markets to pay discounts for 13/16-inch staple, the bales of that staple length would have centered around those points in the distribution of differences.

The tendency of the staple differences for 15/16-inch in 1928 to center around the zero point was similar to that of 13/16-inch and shorter. The staple differences for 15/16-inch staple in 1926 did not center about the zero point as they did for that length in 1928. A factor affecting the distribution of differences in 1926 much more than in 1928 was the rapid decline in cotton prices, causing wide variations in prices on the same day.

The range for 13/16-inch staple and shorter in 1926 varied from 181 points below 7/8-inch to 167 points above 7/8-inch or a total of 348 points (Table 15). In 1928, the range for 13/16-inch and shorter and 15/16-inch, respectively, varied from 242 points and 252 points above to 135 points and 143 points below 7/8-inch. The variability in the staple differences was great as shown by the standard deviations of staple differences which were 46.7 points for 13/16-inch and shorter in 1926, 30.7 points for 13/16-inch and shorter, and 30.4 points for 15/16-inch in 1928.

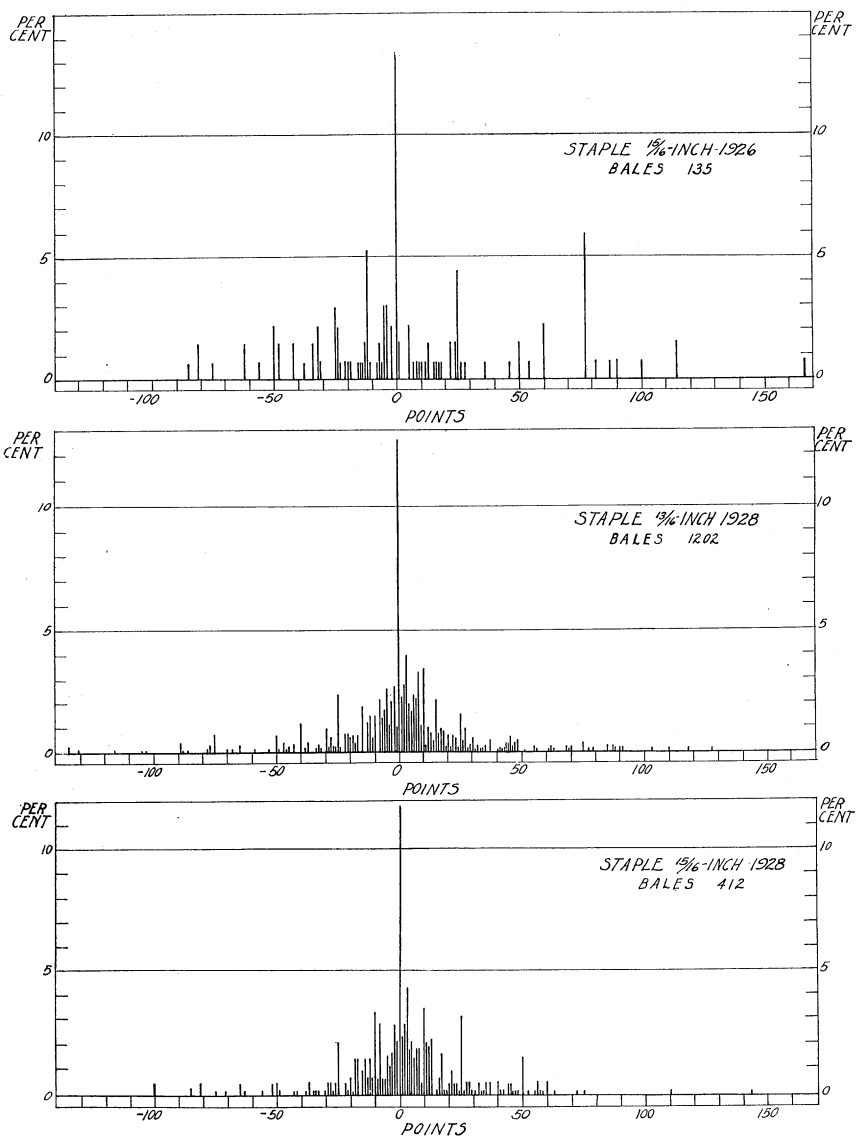


FIGURE 5.—Percentage distributions of differences in prices paid farmers in Alabama for cotton of staple lengths indicated, basis same grade 7/8-inch staple, 1926 and 1928 (Some of the bales having extreme differences are not shown).

TABLE 15.—Ranges and Standard Deviations of Differences Paid in Local Markets in Alabama for Specified Staple Lengths, Basis 7/8-inch, 1926 and 1928.

Year	Staple length Inches	Number of bales	Average difference in points	Range in points	Standard deviation in Points	Per cent bales included in one standard deviation above and below average difference	Per cent bales which sold		
							Above 7/8-inch	Same as 7/8-inch	Below 7/8-inch
1926	15/16	135	1	348	46.7	73.1	37.0	13.3	49.7
1928	13/16 and shorter	1,202	-1	377	30.7	83.1	46.3	12.7	41.0
1928	15/16	412	1	395	30.4	84.8	49.3	11.9	38.8

TABLE 16.—Per Cent of Bales Classified by Local Buyer, Above, the same as, or Below Government Class, 683 Bales, Four Alabama Towns, 1926.

Government class		Per cent of bales graded by buyer							
Grade 7/8-inch staple	No. of bales	Two grades above	One grade above	Same grade	One grade below	Two grades below	Three grades below	Four grades below	Total
S.G.M. & G.M.	124			3.2	59.7	31.5	5.6		100.0
S.M. & G.M. Sp.	219		0.5	19.2	61.1	17.4	1.3	0.5	100.0
M., S.M. Sp. & G.M. Y.T.	179		0.6	18.4	65.4	14.5	1.1		100.0
S.L.M., M. Sp. & S.M. Y.T.	104		1.9	23.1	60.6	13.4	1.0		100.0
L.M. & S.L.M. Sp.	49	2.1	2.0	30.6	63.3	2.0			100.0
S.G.O., G.O. & S.L.M. Y.T.	8		25.0	62.5	12.5				100.0
Total	683	0.1	1.0	18.0	61.5	17.3	1.9	0.2	100.0

LOCAL BUYERS AND GOVERNMENT CLASSIFICATION

In general, satisfactory records indicating the buyers classification of cotton, as purchased from farmers, were not available. Even when records of grades of cotton purchased appeared on buyers books, it was not always clear as to whether these grades were used in buying cotton from the farmers or whether they were made later by the buyers for purposes of selling the cotton. In four towns in 1926, data were obtained from buyers as to their classification of 706 bales, and in one town in 1928 for 817 bales. A summary of the government and buyers classification of these bales are shown in Table 18 and Appendix Tables 31 and 32.

A comparison of the government classification with the buyers classification for the four towns in 1926 shows that the government placed these bales in 27 different classes, whereas the buyers placed them in 14 grades. The government classed 683 bales, 7/8-inch staple; 11 bales, 13/16-inch and shorter; and 12 bales 15/16-inch. The buyers classification involved no staple classification, at least as far as available records indicated. Only 3 bales out of each hundred, however, according to government classification, were other than 7/8-inch staple length. The government classification of the bales included 15 grades and the local buyers classification 14 grades for the bales with 7/8-inch staple length.

The buyers grading centered around one grade below the government grade. The deviations were about equally above and below the central tendency (Tables 16 and 17). In 1926, 62 per cent of the bales was graded by buyers one grade below the government grade. In 1928, buyers graded approximately 57 per cent of the bales one grade below the government grade. In comparing buyers grades with government grades, it was assumed that the Spotted grades were equivalent to the next lowest White grade, and Yellow Tinged grades equivalent to white cotton of two grades below. Thus, S.M. Sp. was considered "the same as" M.; S.M. Y.T. "the same as" S.L.M.

TABLE 17.—Per Cent of Bales Classed by Local Buyer Above, the Same As, or Below Government Class, 646 Bales, One Alabama Town, 1928.

Government class		Per cent of bales graded by buyer					Total
Grade 7/8-inch staple	No. of bales	One grade above	Same grade	One grade below	Two grades below	Three grades below	
G.M.	10			10.0	80.0	10.0	100.0
S.M. & G.M. Sp.	354		11.0	75.7	13.3		100.0
M. & S.M. Sp.	245	0.8	58.4	38.0	2.8		100.0
S.L.M., M. Sp. & M. Y.T.	37	8.1	67.6	24.3			100.0
Total	646	0.8	32.0	57.4	9.6	0.2	100.0

More bales were graded by buyers the same as the government grades in the low grades than in the high grades (Tables 16 and 17). In 1926, 18 per cent of Middling and equivalent grades was graded the same as the government grade, as compared with 62 per cent of Strict Good Ordinary and lower grades. There was a tendency on part of buyers not to place cotton in the higher grades. Out of 706 bales, the government classed 6 bales Strict Good Middling whereas local buyers did not use this grade at all (Appendix Table 31). The government classed 124 bales Good Middling, as compared with the buyers 5 bales; and 182 bales Strict Middling as compared with 126 bales. On the other hand, the government graded 122 bales Middling and the buyers graded 198 bales Middling. The government graded only 69 bales Strict Low Middling and 34 bales Low Middling; the buyers placed 174 bales and 104 bales in those grades, respectively. The government placed 155 bales in the Spotted grades, whereas local buyers placed only 29 bales in those grades. Seven bales were placed in Yellow Tinged grades by the government whereas the buyers placed 15 bales in those grades.

TABLE 18.—Percentage of Bales Placed in Different Staple Lengths by Government Classification in Alabama, Four Towns in 1926, and One Town in 1928.

Staple length Inches	Four towns, 1926		One town, 1928	
	Bales	Per cent	Bales	Per cent
13/16	11	1.6	120	14.7
7/8	683	96.7	646	79.1
15/16	12	1.7	46	5.6
1			4	0.5
1 1/8			1	0.1
Total	706	100.0	817	100.0

Probably the point of greatest significance with respect to government and local buyers grades is that cotton was not classified according to staple in local markets. The identification of bales of 13/16-inch and shorter in local markets, while not as important in 1926 as in subsequent years, because of the low percentage of such cotton in 1926, is a step of primary importance if the quality of individual bales is to be reflected accurately in prices in local markets. The fact that about 80 per cent of the bales were graded by the local buyers below government grades, was probably not as significant as the fact of the large percentage of error in the classification of this cotton, if we may assume perfect or nearly perfect accuracy in the government classing. If the buyers had graded each bale one grade below the government grades, both the government and buyers grades would have shown comparable differentiation in quality. These

facts point to the need of improvement in classification of cotton so that dependable, uniform measures of quality as to both grade and staple may be obtained in local markets.

SELLING IN ROUND LOTS

Data were obtained on 3,041 bales of cotton sold in round lots. Data were not available showing the extent of selling in round lots. In town N, an important market in central Alabama, a summary of records of all cotton purchased by leading buyers covering 7,663 bales in 1926 and 8,308 bales in 1927, indicated that 75 per cent in 1926, and 83 per cent in 1927, were sold in round lots. A large proportion of the single bales were sold in the early part of the marketing season. In 1926, round lot sales after January included 95 per cent and in 1927, 97 per cent of all bales purchased. These figures cannot be said to be representative of the State as a whole in the absence of data from other towns.

In this method of selling, the average quality of the lot was often considered instead of each bale being sold on its individual merit. In some instances of round lot buying the round lot price was calculated by merely averaging the prices of individual bales. No data are available to show the extent of the two methods of determining round lot prices. Since the government classification was obtained for each bale in the round lots studied, it was possible to determine a price at which each bale would have sold individually if priced according to prices and differences quoted in central markets. Comparison of the average spreads of round lot bales and single bales offered the most readily available means of comparing the relative profitableness of the two methods of selling.

In each of the three years studied the round lot prices showed a narrower average spread than the single bale prices, the average spread of the former being 20 points lower than the latter (Table 19). This indicates a profit of \$1.00 per bale as a result of selling in round lots. Although the round lot method of selling may obscure the quality of superior bales, it also may obscure the quality of inferior bales. That method, however, appeared to be to the farmers advantage, as compared with selling in single bales.

A factor to be considered in round lot sales is the desirability from the buyers standpoint of purchasing as many bales in one transaction as possible. The costs of the transaction in the purchase of ten bales would not be ten times as great as the costs involved in the purchase of a single bale. Such a condition would presumably induce the buyer to pay a greater price to obtain the larger amount of cotton. Therefore, the farmer has greater bargaining power when he can offer for sale several bales at one time.

TABLE 19.—Comparison of Spreads for 11,413 Bales of Cotton Sold as Single Bales and 3,041 Bales Sold in Round Lots, Alabama, 1926, 1927, and 1928.

Year	Single Bales			
	Number of bales	Farm price	Central markets price	Spread
1926	3,052	11.46	13.17	171
1927	1,226	20.11	20.64	53
1928	7,135	17.92	18.41	49
Round lot bales				
1926	276	12.51	13.92	141
1927	904	19.91	20.25	34
1928	1,861	18.29	18.66	37
Single and round lot bales				
1926	3,328	11.55	13.23	168
1927	2,130	20.02	20.47	45
1928	8,996	17.99	18.46	47

SPREADS BETWEEN FARM AND CENTRAL MARKETS PRICES

The average farm price for bales sampled of both single and round lots of the 1926 crop was 11.55 cents per pound. The corresponding central markets price was 13.23 cents per pound, giving a plus spread of 168 points. In 1927, the farm price was 20.02 cents per pound, as compared with the central markets price of 20.47 cents per pound, giving a plus spread of 45 points. In 1928, the farm price was 17.99 cents per pound as compared with 18.46 cents, giving a spread of 47 points. The average spreads for 1927 and 1928 were almost identical while the spread in 1926 was more than 100 points greater than that in 1927 or 1928. Apparently the wide spread in 1926 was associated with the demoralized condition of the market during that season in which the price declined steadily from August to December. Similar conditions did not prevail in the other two years.

The spread between farm and central markets prices, which represented such costs as transportation, storage, and other handling charges, was not a constant quantity. The spreads not only varied from season to season but varied within the same season. In 1926 and in 1927, the spread between farm price and central markets price was the largest during the peak of the marketing season (Table 20). The spread widened from August to October then narrowed in January. This means that the farm price weakened in the early part of the season and became relatively stronger in the latter part of the season. In 1928, the spread

TABLE 20.—The Average Monthly Spread Between Farm Price and Central Markets Price, Strict Middling 7/8, Alabama, 1926, 1927, and 1928.

Year	Spread in points					
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
1926	115	137	172	167	164	135
1927	17	53	93	78	29	10
1928	87	58	45	82	97	67

narrowed from August to October and showed a tendency to widen from October to January. The farm price in that season was stronger in the first part of the season and weaker in the latter part of the season.

ECONOMIC ASPECTS OF VARIETIES

Varieties Grown by Farmers

Data were obtained from farmers in six counties as to the variety of cotton grown, and the yield per acre. Government classification was obtained for at least a portion of the bales produced by each farmer. A summary of varieties grown by farmers is shown in Table 21. In North Alabama, Half and Half was the principal variety grown. Cook varieties, doubtless of the wilt-resistant strains, predominated in South Alabama. For the State as a whole, the comparatively short staple varieties were widely grown. Varieties supposed to produce 1 inch staple or longer were of minor importance. The group of so-called 1 inch staple or longer contained many bales which had a staple of 7/8-inch (Table 22). No records were included under the specific variety groups if the farmer did not say he had pure seed. Pure seed included only seed obtained from a reliable source, kept separate at the gin, and not reproduced for more than two years from the same stock.

There seems to be a distinct relation between variety, as reported by farmers, and the staple as determined by the government classification. Thus 36 per cent of the bales of the Half and Half group was shorter than 7/8-inch as compared with 10 per cent of the Cook group, 4 per cent of the Cleveland group, and 2 per cent of the 1 inch staple and longer group (Table 22).

The data on yield per acre were not significant in view of the fact that local conditions of soil, fertilizer, and other factors varied so much as to render obscure the net effect of variety on yield. In view of the lack of differentiation in prices according to staple length in local markets, the value per acre varied directly with yield of lint per acre. For a study of the various factors affecting the profitableness of varieties, we must depend on the results of experimental tests. The data from farmers, however, tend to indicate that they have found generally most profit-

TABLE 21.—Number and Percentage of Different Varieties of 3,374 Bales of Cotton Produced in Six Alabama Counties, 1928.

Variety group	Number of Bales							Per cent						
	Talla- poosa	Lee	Mar- engo	Gen- eva	Madi- son	Lauder- dale	Six coun- ties	Talla- poosa	Lee	Mar- engo	Gen- eva	Madi- son	Lauder- dale	Six coun- ties
Half and Half	22	18	155	2	346	568	1,111	5	3	30	1	44	92	33
Cook Varieties	255	252	117	257	114	1	996	56	39	23	70	14	0	30
Cleveland	25	120	69	12	93	0	319	5	18	14	3	12	0	9
Misc. Short Staple ^a	100	51	71	15	5	7	249	22	8	14	4	1	1	7
Total Short Staple	402	441	412	286	558	576	2,675	88	68	81	78	71	93	79
Inch Staple and longer ^b	9	4	10	2	17	0	42	2	1	2	1	2	0	1
Mixed and Unknown ^c	45	199	85	78	209	41	657	10	31	17	21	27	7	20
Grand Total	456	644	507	366	784	617	3,374	100	100	100	100	100	100	100

^aHeavy Fruiter, Broadwell, Simpkins, Double Jointed, Rucker, King, Sikes, Toole, Addison, Poulknot.

^bVarieties supposed to produce inch staple or longer.

^cIncludes bales of varieties unknown to farmers and bales of known mixed varieties.

TABLE 22.—Staple Length and Percentage Distribution of 3,363 Bales of Cotton of Different Varieties Grown in Alabama, 1928.

Variety group	Number of Bales					Per cent				
	13/16 and shorter	7/8	15/16	1 or longer	Total	13/16 and shorter	7/8	15/16	1 or longer	Total
Half and Half	402	660	46	1	1,109	36	60	4	0	100
Cook	98	817	75	4	994	10	82	8	0	100
Cleveland	14	261	40	1	316	4	83	13	0	100
Misc. Short Staple ^a	15	206	24	4	249	6	83	10	1	100
Total Short Staple	529	1,944	185	10	2,668	20	73	7	0	100
Inch Staple and longer ^b	1	33	5	2	41	2	81	12	5	100
Mixed and Unknown ^c	63	525	60	6	654	10	80	9	1	100
Total All Staple	593	2,502	250	18	3,363	18	74	7	1	100

^aHeavy Fruiter, Broadwell, Simpkins, Double Jointed, Rucker, King, Sikes, Toole, Addison, Poulknot.

^bVarieties supposed to produce inch staple or longer.

^cIncludes bales of varieties unknown to farmers and bales of known mixed varieties.

able the short staple varieties with high yields and high percentage of lint.

Results of Experimental Tests of Varieties

In the light of present technology, the only way in which the staple length of the Alabama crop can be lengthened is by substituting varieties having longer staples than those now generally grown. So far as is definitely known, no improvement in staple length may be obtained by changing methods of fertilization or cultural practices.

Data on yield per acre and staple length of the different varieties have been reported by the Alabama Experiment Station from tests covering the five-year period, 1926 to 1930. As a measure of the relative profitableness of these varieties a value per acre of lint was calculated. The expression "value per acre" as used in this discussion always refers to value of lint and does not include value of seed. The average farm price of cotton in Alabama from 1926 to 1930, which was 14.69 cents, was used in calculating the acre values of the different varieties. The acre value was calculated in two ways, first, the value per acre using no staple differences, and second, the value per acre using the average staple premiums and discounts paid in central markets from 1926 to 1930. The average discount in central markets for 13/16-inch was 93 points. The premium for 15/16-inch was 45 points, for 1 inch 96 points, for 1 1/16 inches 161 points, and for 1 1/8 inches 246 points. No adjustment was made for picking and ginning costs of different varieties. The extra costs of ginning and picking the varieties with a small percentage of lint were mostly offset by increased value of the seed of such varieties. The varieties with a high gin turnout have important advantages such as permitting prompter harvesting and reducing harvesting requirements, but these were not measured in this study.

The varieties have been ranked in order of their value without staple differences, since the present study has indicated generally a lack of differentiation in prices paid farmers for staple lengths of 1 inch and shorter, and data were not available for staple lengths longer than 1 inch. However, the value per acre adjusted for staple premiums and discounts should be considered since farmers can obtain premiums and discounts for staple lengths through the cooperative marketing associations.

Since varieties differ in their adaptability to different regions of Alabama, they have been placed in three general groups, North Alabama, Central Alabama, and South Alabama. Varieties in South Alabama and in portions of Central Alabama need to be wilt-resistant and in this group those varieties which were best suited to the wilt lands of these sections have been included. Results of the Experiment Station tests for the five-year period showed considerable variation in staple length and

yield per acre from one section of the State to another. Varieties ranking high in farm value per acre in one section were sometimes low in another section of the State.

In North Alabama out of 16 varieties tested for five years, Cook 1010 (Williamson) had the highest average value per acre when staple differences are not considered (Table 23). This variety yielded 368 pounds of lint per acre and had a staple length of 13/16-inch, the shortest of any of the varieties tested for this area. D. P. L. 4-8 and Trice, both averaging a staple length of 15/16-inch, ranked second and fourth, respectively, in value per acre. Cook 1627, which had a staple length of 7/8-inch, ranked third and Delfos with a staple length of 1 1/16 inches ranked fifth in value per acre.

The order of the varieties was changed considerably when ranked according to acre values adjusted for staple premiums and discounts paid in central markets. Delfos ranks first with D. P. L. 4-8 a close second. Delfos has the disadvantage of being more expensive to pick than the other varieties mentioned. Cook 1010 (Williamson) which was first in value per acre without staple difference drops to sixth place. When no staple differences were paid, Cook 1010 (Williamson) was worth \$1.03 more per acre than D. P. L. 4-8, but when the discount of 93 points was given Cook 1010 (Williamson) and the premium of 45 points was given D. P. L. 4-8, the latter was worth \$4.02 per acre more than the former. According to staple premiums and discounts, D. P. L. 4-8 was worth an average of 1.38 cents per

TABLE 23.—Cotton Varieties Tested for North Alabama Ranked from Highest to Lowest Average Value of Lint Per Acre without Staple Differences, 1926-1930. (Alabama Experiment Station).

Variety	Staple length 1/32- inch	Yield per acre Pounds lint	Value per acre	
			Without staple differences	With staple differences
Cook 1010 (Williamson)	27	368	54.06	50.64
D. P. L. 4-8	31	361	53.03	54.66
Cook 1627 (Smith)	29	352	51.71	51.71
Trice	31	349	51.27	52.84
Delfos	34	348	51.12	56.72
Bottoms	29	346	50.83	50.83
Cook 307 (Rhyne)	28	338	49.65	49.65
Cleveland (Piedmont)	29	332	48.77	48.77
Dixie Triumph (Watson)	29	332	48.77	48.77
Cook 588	28	328	48.18	48.18
College No. 1	30	323	47.45	48.90
Cleveland (P. S. Co.)	32	319	46.86	49.92
Cleveland (Wannamaker)	28	316	46.42	46.42
Acala No. 5	32	308	45.25	48.20
Mexican Big Boll	32	300	44.07	46.95
Webber Delta Type	36	267	39.22	45.79

pound more than Cook 1010 (Williamson). If such a difference in price were paid to farmers consistently for individual bales, greater interest would develop in D. P. L. 4-8. Trice ranked third and Cook 1627 ranked fourth in value per acre with staple differences included.

All the varieties with 1 inch staple and longer, except Delfos, ranked comparatively low in acre value. The payment of staple premiums does not improve the acre value of these varieties enough to offset their low acre yields. The Webber Delta Type variety, which averaged a staple length of 1 1/8 inches, would have to be paid a premium of 578 points to equal D. P. L. 4-8 in value per acre. This premium would be 332 points more than the premium paid in central markets.

Half and Half, the most commonly grown variety in North Alabama was tested for only two years, 1929 and 1930. On the basis of the two year tests, (using the five-year average price per pound and staple differences) this variety ranked third in value per acre without staple differences and ninth with staple differences out of 27 other varieties tested. Rucker made outstanding yields in the tests in 1929 and 1930, ranking first and yielding 396 pounds of lint per acre as compared with 378 pounds for Cook 1010 (Williamson), 362 pounds for Half and Half, and 359 pounds for Cook 307 (Rhyne). Rucker, which had a staple length of 25/32-inch, still ranked first in value of lint per acre when discounted 93 points, the central markets average difference for 13/16-inch. If quotations on discounts for 25/32-inch had been available, the acre value of Rucker would have been still lower. The yield of lint per acre of Rucker was so much larger than other varieties that the discount paid in central markets for 13/16-inch would have to be increased by 63 points to reduce Rucker to the same level of profitability as its nearest competitor in the two year test, namely, Cook 1010 (Williamson). Again, on the basis of the two year tests, a price of 2.42 cents per pound more would have to be paid for D. P. L. 4-8 than for Rucker to make the two varieties equally profitable.

In Central Alabama, D. P. L. 4-8 with a staple length averaging 15/16-inch and with a yield of lint averaging 431 pounds per acre led the list in farm value of lint per acre (Table 24). This variety was followed by five varieties having a staple length of 7/8-inch. Seven other varieties which had staple lengths of 15/16-inch or longer were lowest in values of lint per acre and also were relatively low in yields. None of the varieties tested in Central Alabama for the five-year period had a staple length below 7/8 inch except Cook 1010 (Williamson) which ranked seventh in value of lint per acre. The rank of the varieties was not changed materially when values of lint per acre included central markets premiums and discounts, except for Cook 1010 (Williamson) which moved from seventh to thirteenth place and Delfos which moved from twelfth to seventh place. Delfos,

TABLE 24.—Cotton Varieties Tested for Central Alabama Ranked from Highest to Lowest Average Value of Lint Per Acre without Staple Differences, 1926-1930. (Alabama Experiment Station).

Variety	Staple length 1/32- inch	Yield per acre Pounds lint	Value per acre	
			Without staple differences	With staple differences
D. P. L. 4-8	31	431	63.31	65.25
Dixie Triumph (Watson)	29	422	61.99	61.99
Cook 1627 (Smith)	29	422	61.99	61.99
Cook 588	28	419	61.55	61.55
Cook 307 (Rhyne)	28	415	60.96	60.96
Cleveland (Piedmont)	28	406	59.64	59.64
Cook 1010 (Williamson)	27	390	57.29	53.66
Cleveland (Wannamaker)	29	388	57.00	57.00
Bottoms	29	387	56.85	56.85
Trice	31	378	55.53	57.23
Cleveland 884 (P.S.Co.)	31	371	54.50	56.17
Delfos	34	361	53.03	58.84
College No. 1	30	350	51.42	52.99
Mexican Big Boll	32	339	49.80	53.05
Acala No. 5	32	334	49.06	52.27
Webber Delta Type	37	318	46.71	54.54

which had a staple length of 1 1/16 inches would have to be paid a premium of 339 points for staple, or 178 points more than that paid in central markets to equal D. P. L. 4-8 in value per acre.

In order to obtain the highest yields in South Alabama and in many sections of Central Alabama wilt-resistant varieties must be grown. Nine wilt-resistant varieties were tested for the five-year period 1926 to 1930 (Table 25). The three highest ranking varieties in value per acre were Cook 307 (Rhyne), Dixie Triumph (Watson), and Toole Council, all of 7/8-inch staple length. All varieties used in the tests had a staple length of 7/8-inch staple or shorter except Super 7 which had a staple length of 1 1/32 inches. Super 7 ranked lowest in value per acre with a yield of 307 pounds of lint per acre as compared with 391 pounds for Cook 307 (Rhyne).

The rank of the wilt-resistant varieties did not change materially when the value per acre was adjusted for central markets staple differences. Super 7, ranking ninth in local market value per acre, moved to only eighth place when central markets premiums were added. This variety was worth \$9.39 per acre less than Cook 307 (Rhyne) after adding the staple premium paid in central markets. A staple premium of more than 402 points would have to be paid before Super 7 would rank the highest in value per acre. This premium would be 306 points more than was paid in central markets. None of the wilt-resistant varieties tested in South and Central Alabama had both a high yield and a staple length longer than 7/8-inch.

TABLE 25.—Wilt-Resistant Varieties Tested for Central and South Alabama Ranked from High to Lowest Average Value of Lint Per Acre without Staple Differences, 1926-1930. (Alabama Experiment Station).

Variety	Staple length 1/32-inch	Yield per acre Pounds lint	Value per acre	
			Without staple differences	With staple differences
Cook 307 (Rhyne)	28	391	57.44	57.44
Dixie Triumph (Watson)	28	387	56.85	56.85
Toole Council	28	384	56.41	56.41
Cook 307 (Bridges)	27	367	53.91	50.50
Lewis 63	28	364	53.47	53.47
Toole (Petty)	28	358	52.59	52.59
Cook 588	27	340	49.95	46.78
Kelly Big Boll	28	337	49.51	49.51
Super 7	33	307	45.10	48.05

The data presented serve to show from the individual farmers point of view that the shorter varieties are often the more remunerative than the longer staple varieties when no staple differences are paid for individual bales. The D. P. L. 4-8 variety shows up well in North and Central Alabama both in yield per acre and staple length. Farmers may grow more cotton of such varieties as D. P. L. 4-8 if they are paid large enough premiums for 15/16-inch and 1 inch staple lengths making the varieties of staple lengths shorter than 7/8-inch, such as Rucker and Half and Half, less profitable. As long as the same price is paid for all staple lengths in local markets, farmers in Alabama may find it most profitable to continue to grow the varieties with shorter staple length and higher yields per acre.

SUMMARY

1.—The grade of Alabama cotton from 1926 to 1930 compared favorably with the grade of cotton produced in the United States as a whole.

2.—There was a definite tendency on the part of cotton buyers to pay farmers more for the better grades than for the poorer grades.

3.—Thirty-six per cent of Alabama cotton from 1928 to 1930 had a staple length shorter than 7/8-inch, as compared with 16 per cent of the United States crop.

4.—Very little distinction, if any, was made between 13/16-inch and shorter, 7/8-inch, and 15/16-inch staple in the purchase of individual bales from farmers in Alabama in 1926, 1927, and 1928.

5.—Improvement in classification of cotton in local markets so that dependable, uniform measures of quality may be obtained as to both grade and staple is a fundamental consideration in the problem of paying farmers for cotton in accordance with quality.

6.—Prices paid to farmers for given grades and staple lengths sold in the same town on the same day were characterized by wide ranges indicating serious imperfections in local markets. Prices of the same qualities varied widely from town to town.

7.—One dollar more per bale was received by farmers selling in round lots than by those selling in single bales.

8.—The economic reward for high yields per acre was a more important factor influencing the variety of cotton grown by farmers than the reward for staple length.

9.—The payment of staple premiums and discounts for individual bales is necessary before farmers will select varieties on the basis of staple length instead of only on the basis of yield of lint per acre and gin turnout.

REFERENCES

¹Palmer, A. W., Commercial classification of American cotton, United States Department of Agriculture, Circular No. 278.

²United States Department of Agriculture, Bureau of Agricultural Economics, Service and Regulatory Announcement No. 124, "Regulations of the Secretary of Agriculture under the United States Cotton Futures Act."

³Crops and Markets, United States Department of Agriculture, June, 1931.

APPENDIX

TABLE 26.—Grade, Staple Length, and Tenderability of 5,047 Bales of Cotton Produced in Alabama, 1926.

GRADE	Bales					Per cent				
	Staple in inches									
	*13/16 and shorter	7/8	15/16	1 and longer	Total	*13/16 and shorter	7/8	15/16	1 and longer	Total
WHITE, TOTAL	22	3,799	290	25	4,136	0.4	75.3	5.8	0.5	82.0
S.G.M.		24	3		27		0.5	a		0.5
G.M.	2	825	100	1	928	a	16.4	2.0	a	18.4
S.M.	6	1,381	134	7	1,528	0.1	27.4	2.7	0.1	30.3
M.	3	969	43	13	1,028	0.1	19.2	0.8	0.3	20.4
S.L.M.	6	467	8	4	485	0.1	9.2	0.2	0.1	9.6
L.M.	1	111	2		114	a	2.2	a		2.3
*S.G.O.	2	17			19	a	0.3			0.4
*G.O.	2	5			7	a	0.1			0.1
SPOTTED, TOTAL	11	795	25	3	834	0.2	15.7	0.5	0.1	16.5
G.M.	3	181	8		192	a	3.6	0.2		3.8
S.M.	4	366	13	2	385	0.1	7.2	0.2	a	7.6
M.	4	195	3	1	203	0.1	3.8	0.1	a	4.0
*S.L.M.		49	1		50		1.0	a		1.0
*L.M.		4			4		0.1			0.1
YEL. TINGED, TOTAL		64	1		65		1.3	a		1.3
G.M.		14			14		0.3			0.3
S.M.		31			31		0.6			0.6
*M.		13			13		0.3			0.3
*S.L.M.		6	1		7		0.1	a		0.1
YEL. ST. TOTAL		1			1		a			a
G.M.		1			1		a			a
GRAY, TOTAL		4			4		0.1			0.1
G.M.		1			1		a			a
S.M.		3			3		0.1			0.1
*NO GRADE**, TOTAL	7				7	0.1				0.1
ALL GRADES, TOTAL	40	4,663	316	28	5,047	0.7	92.4	6.3	0.6	100.0

a—Less than one-tenth of one per cent.

*—Untenderable.

**—Includes bales not otherwise classified with the exception of Extra White, Lt. Yel. St. and Blue St. in which colors there were no bales.

TABLE 27.—Grade, Staple Length, and Tenderability of 3,613 Bales of Cotton Produced in Alabama, 1927.

Grade	Bales					Per cent				
	Staple in inches									
	*13/16 and shorter	7/8	15/16	1 and longer	Total	*13/16 and shorter	7/8	15/16	1 and longer	Total
WHITE, TOTAL	473	2,866	20	5	3,364	13.0	79.4	0.6	0.1	93.1
S.G.M.	1	2			3	a	a			0.1
G.M.	50	498	3	1	552	1.4	13.8	0.1	a	15.3
S.M.	218	1,488	12	4	1,722	6.0	41.2	0.3	0.1	47.7
M.	177	791	5		973	4.9	21.9	0.1		26.9
S.L.M.	24	79			103	0.6	2.2			2.8
L.M.	3	8			11	0.1	0.2			0.3
SPOTTED, TOTAL	50	166	4		220	1.4	4.6	0.1		6.1
G.M.	12	50	3		65	0.3	1.4	0.1		1.8
S.M.	31	92	1		124	0.9	2.5	a		3.4
M.	7	22			29	0.2	0.6			0.8
*S.L.M.		2			2		a			a
YELTINGED, TOTAL		1			1		a			a
S.M.		1			1		a			a
*NO GRADE**, TOTAL	9	11	5	3	28	0.3	0.3	0.1	0.1	0.8
ALL GRADES, TOTAL	532	3,044	29	8	3,613	14.7	84.3	0.8	0.2	100.0

a—Less than one-tenth of one per cent.

*—Untenderable.

**—Includes bales not otherwise classified with the exception of Extra White, Lt. Yel. St., Gray and Blue St. in which colors there were no bales.

TABLE 28.—Grade, Staple Length, and Tenderability of 1,096,600 Bales of Cotton Produced in Alabama, 1928. (Preliminary Estimate, U. S. Department of Agriculture).

GRADE	Bales					Per cent				
	Staple in inches									
	*13/16 and shorter	7/8	15/16	1 and longer	Total	*13/16 and shorter	7/8	15/16	1 and longer	Total
EXTRA WHITE, TOTAL	100	300			400	a	a			a
G.M.	100				100	a				a
S.M.		200			200		a			a
M.		100			100		a			a
WHITE, TOTAL	226,100	642,600	42,200	19,400	930,300	20.6	58.7	3.9	1.7	84.9
S.G.M.	300	1,200			1,500	a	0.1			0.1
G.M.	31,100	69,900	5,200	400	106,600	2.8	6.4	0.5	a	9.7
S.M.	116,000	387,300	28,100	13,600	545,000	10.7	35.3	2.6	1.2	49.8
M.	61,800	161,000	8,200	4,900	235,900	5.7	14.7	0.7	0.4	21.5
S.L.M.	14,100	21,800	600	500	37,000	1.2	2.0	0.1	0.1	3.4
L.M.	2,400	1,100	100		3,600	0.2	0.1	a		0.3
*S.G.O.	400	200			600	a				0.1
*G.O.		100			100					a
SPOTTED, TOTAL	36,300	117,200	7,400	600	161,500	3.3	10.7	0.6	0.1	14.7
G.M.	3,400	14,800	1,700	100	20,000	0.3	1.3	0.1	a	1.8
S.M.	24,000	81,000	4,700	400	110,100	2.2	7.4	0.4	a	10.0
M.	7,700	19,500	900	100	28,200	0.7	1.8	0.1	a	2.6
*S.L.M.	900	1,900	100		2,900	0.1	0.2	a		0.3
*L.M.	300				300	a				a
YELLOWINGED, TOTAL	600	3,000	100		3,700	0.1	0.3	a		0.4
G.M.	100	800	100		1,000	a	0.1	a		0.1
S.M.	400	1,700			2,100	a	0.1			0.2
*M.	100	500			600	a	0.1			0.1
LT. YEL. ST., TOTAL		100			100		a			a
*M.		100			100		a			a
YEL. ST., TOTAL		100			100		a			a
*M.		100			100		a			a
GRAY, TOTAL	100	300			400	a	a			a
G.M.	100	100			100	a	a			a
S.M.	100	200			300	a	a			a
*NO GRADE**, TOTAL	100				100	a				a
ALL GRADES, TOTAL	263,300	763,600	49,700	20,000	1,096,600	24.0	69.7	4.5	1.8	100.0

a—Less than one-tenth of one per cent.

*—Untenderable.

**—Includes bales not otherwise classified with the exception of Blue St., in which color there were no bales.

TABLE 29.—Grade, Staple Length, and Tenderability of 1,307,600 Bales of Cotton Produced in Alabama, 1929. (Preliminary Estimate, U. S. Department of Agriculture).

GRADE	Bales					Per cent				
	Staple in inches									
	*13/16 and shorter	7/8	15/16	1 and longer	Total	*13/16 and shorter	7/8	15/16	1 and longer	Total
WHITE, TOTAL	498,600	608,200	25,800	4,500	1,137,100	38.2	46.5	2.0	0.3	87.0
S.G.M.	300	1,100	100		1,500	a	0.1	a		0.1
G.M.	9,100	26,200	2,300	200	37,800	.07	2.0	0.2	a	2.9
S.M.	145,400	273,000	14,200	2,300	434,900	11.1	20.9	1.1	0.2	33.3
M.	214,600	234,700	7,800	1,800	458,900	16.4	17.9	0.6	0.1	35.1
S.L.M.	76,700	46,100	1,200	200	124,200	5.9	3.5	0.1	a	9.5
L.M.	25,900	16,600	100		42,600	2.0	1.3	a		3.3
*S.G.O.	18,000	8,200	100		26,300	1.4	0.6	a		2.0
*G.O.	8,600	2,300			10,900	0.6	0.2			0.8
SPOTTED, TOTAL	78,400	73,900	2,400	300	155,000	6.0	5.6	0.2	a	11.8
G.M.	1,700	3,100	100		4,900	0.1	0.2	a		0.4
S.M.	44,200	51,300	1,900	300	97,700	3.4	3.9	0.1	a	7.5
M.	27,200	16,800	300		44,300	2.1	1.3	a		3.4
*S.L.M.	4,700	2,400	100		7,200	0.3	0.2	a		0.5
*L.M.	600	300			900	a	a			a
YELTINGED, TOTAL	4,300	4,200	100		8,600	0.3	0.3	a		0.7
G.M.	200	400	100		700	a	a	a		a
S.M.	1,500	2,600			4,100	0.1	0.2			0.3
*M.	1,800	1,100			2,900	0.1	0.1			0.2
*S.L.M.	600	100			700	a	a			a
*L.M.	200				200	a				a
LT.YEL.ST., TOTAL	300	100			400	a	a			a
*S.M.	100				100	a				a
*M.	200	100			300	a	a			a
YEL. ST., TOTAL	100				100	a				a
*S.M.	100				100	a				a
GRAY, TOTAL	1,800	1,600			3,400	0.1	0.1			0.3
S.M.	500	600			1,100	a	a			0.1
*M.	1,300	1,000			2,300	0.1	0.1			0.2
BLUE ST., TOTAL	300	300			600	a	a			a
*S.M.	300	300			600	a	a			a
*NO GRADE**, TOTAL	2,100	300			2,400	0.2	a			0.2
ALL GRADES, TOTAL	585,900	688,600	28,300	4,800	1,307,600	44.8	52.6	2.2	0.4	100.0

a—Less than one-tenth of one per cent.

*—Untenderable.

**—Includes bales not otherwise classified with the exception of Extra White in which color there were no bales.

TABLE 30.—Grade, Staple Length, and Tenderability of 1,444,600 Bales of Cotton Produced in Alabama, 1930. (Preliminary Estimate, U. S. Department of Agriculture).

GRADE	Bales					Per cent				
	Staple in inches									
	*13/16 and shorter	7/8	15/16	1 and longer	Total	*13/16 and shorter	7/8	15/16	1 and longer	Total
EXTRA WHITE, TOTAL		100			100		a			a
M.		100			100		a			a
WHITE, TOTAL	488,600	707,600	68,600	11,700	1,276,500	33.9	49.0	4.7	0.8	88.4
S.G.M.	200	300			500	a	a			a
G.M.	23,600	24,700	1,400	300	50,000	1.6	1.7	0.1	a	3.5
S.M.	203,400	282,700	24,800	4,200	515,100	14.1	19.6	1.7	0.3	35.7
M.	161,000	290,200	35,200	5,800	492,200	11.1	20.1	2.4	0.4	34.1
S.L.M.	53,100	76,200	6,000	1,400	136,700	3.7	5.3	0.4	0.1	9.5
L.M.	35,400	27,500	1,000		63,900	2.4	1.9	0.1		4.4
*S.G.O.	9,200	5,100	200		14,500	0.6	0.4	a		1.0
*G.O.	2,700	900			3,600	0.2	a			0.2
SPOTTED, TOTAL	64,100	87,600	6,900	700	159,300	4.4	6.0	0.5	0.1	11.0
G.M.	9,500	9,100	1,000	100	19,700	0.7	0.6	0.1	a	1.4
S.M.	20,500	41,300	4,000	400	75,200	2.0	2.8	0.3	a	5.2
M.	16,400	27,300	1,700	200	45,600	1.1	1.9	0.1	a	3.1
*S.L.M.	7,000	7,300	200		14,500	0.5	0.5	a		1.0
*L.M.	1,700	2,600			4,300	0.1	0.2			0.3
YELTINGED, TOTAL	2,800	3,800	200		6,800	0.2	0.3	a		0.5
G.M.	400	300	100		800	a	a	a		0.1
S.M.	900	2,000	100		3,000	0.1	0.1	a		0.2
*M.	900	1,200			2,100	a	0.1			0.1
*S.L.M.	400	200			600	a	a			a
*L.M.	200	100			300	a	a			a
LT.YELST., TOTAL	100	100			200	a	a			a
*S.M.		100			100		a			a
*M.	100				100	a				a
*NO GRADE**, TOTAL	1,500	200			1,700	0.1	a			0.1
ALL GRADES, TOTAL	557,100	799,400	75,700	12,400	1,444,600	38.6	55.3	5.2	0.9	100.0

a—Less than one-tenth of one per cent.

*—Untenderable.

**—Includes bales not otherwise classified with the exception of Yel.St., Gray, and Blue St. in which colors there were no bales.

TABLE 31.—Government and Local Buyers Grades of 706 Bales, Four Alabama Towns, 1926.

Government grade	Buyers grades													
	Number of bales													
	Total	White							Spotted				Yellow Tinged	
G.M.		S.M.	M.	S.L.M.	L.M.	S.G.O.	G.O.	G.M.	S.M.	M.	S.L.M.	S.M.	M.	S.L.M.
S.G.M.	6	4	4	2										
G.M.	124	1	77	36	5			1	1					
S.M.	182		41	105	29	3			2	1				
M.	122		1	18	80	17			2	2		1	1	
S.L.M.	69				15	45	6							3
L.M.	34			1		11	21	1						
S.G.O.	6					1	4	1						
G.O.	1						1							
G.M. Sp.	45		3	20	5			1	10	2		3		1
S.M. Sp.	58			13	31	4	2			5	1		2	
M. Sp.	36			2	8	19	5	1		1				
S.L.M. Sp.	16				1	4	11							
G.M. Y.T.	4			1								2	1	
S.M. Y.T.	1												1	
S.L.M. Y.T.	2						2							
Total	706	5	126	198	174	104	52	3	2	15	11	1	6	4

TABLE 32.—Government and Local Buyers Grades of 817 Bales, One Alabama Town, 1928.

Government grade	Buyers grade				
	Number of bales				
	Total	White			
		S.M.	M.	S.L.M.	L.M.
G.M.	11	1	9	1	
S.M.	381	42	287	52	
M.	197	3	105	85	4
S.L.M.	19	1	1	12	5
G.M. Sp.	34	2	28	4	
S.M. Sp.	135	1	85	45	4
M. Sp.	38		6	27	5
S.L.M. Sp.	1			1	
M.Y.T.	1			1	
Total	817	50	521	228	18