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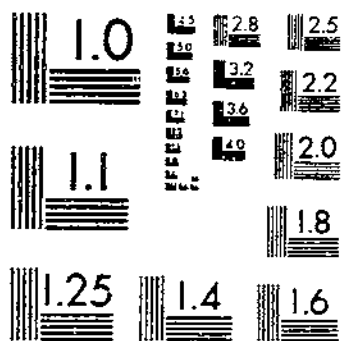
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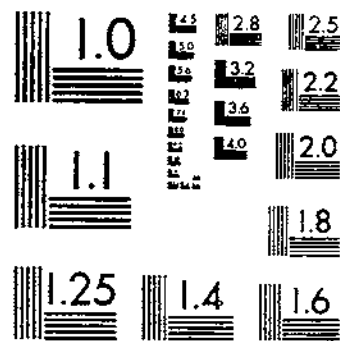
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UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

COTTON SOLD IN THE SEED IN THE
UNITED STATES¹

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United States Department of Agriculture, Bureau of Agricultural
Economics in cooperation with the Agricultural Experiment
Stations of Oklahoma, Arkansas, Missouri,
and Tennessee

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INTRODUCTION

Most of the cotton produced in the United States after being harvested is taken to a gin where the lint is separated from the seed and the lint baled before it is sold by the grower. For the Cotton Belt taken as a whole, remnants sold toward the end of the season as seed cotton aggregate a considerable number of bales, but they represent only a small proportion of the total crop. Cotton sold in the seed other than remnants constitutes a substantial proportion of the cotton produced in some districts, particularly in the northern part of the belt. (4, 5).³

Results of a study published in 1916 indicated that prices to growers for cotton sold in the seed varied irregularly on the basis of

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² Credit is due coworkers in the Bureau for classification of the samples, for cooperation in the collection and tabulation of the data, and for helpful suggestions, and to ginners and cotton buyers for making data available. Special credit is due F. H. Robinson for information obtained in Arkansas, Missouri, and Tennessee, and to A. M. Dickson for data obtained in Oklahoma.

³ Italic numbers in parentheses refer to Literature Cited, p. 23.

its quality, and that farmers as a whole lost money by selling cotton in this way (2). The conclusion reached was that this method of marketing cotton as a general practice cannot be condemned too strongly. Farmers and ginners were advised for the common good of all to encourage custom ginning so that each bale might be sold on its merits.

Despite the conclusions and the recommendations resulting from the earlier studies, a substantial proportion of the cotton produced in some parts of the Cotton Belt continues to be sold in the seed. Moreover, a large proportion of the cotton grown in other important cotton-producing countries is sold before it is ginned. These facts indicate that there may be advantages as well as disadvantages in the practice. They suggest the need for additional information showing in detail the practices of and results from selling cotton in the seed to serve as a basis for formulating plans to deal with problems arising from this practice.

OBJECTIVES OF THIS STUDY

The principal objectives of this study were (1) to indicate the extent of the practice of selling cotton in the seed, (2) to ascertain the differences between returns to growers for cotton sold in the seed and those for cotton custom-ginned, and (3) to indicate the advantages and disadvantages, other than differences in returns to growers, of the practice of selling cotton in the seed.

SOURCES OF DATA

In selected local markets at which a part of the cotton was sold in the seed and the other part was custom-ginned, data were collected during the seasons 1928-29 to 1932-33, inclusive.¹ These markets are thought to be fairly typical of those at which cotton is sold in the seed and were selected at points where arrangements had already been made with the ginners to obtain a press-box sample of about 4 ounces from each bale ginned in their plant during the season. The samples were sent to Dallas or to Memphis, where they were classed according to the official cotton standards of the United States by specialists in cotton classing and were used in estimating the grade and staple length of the crop.

Data on the weights of seed cotton, lint cotton, and cottonseed and on the costs of ginning were obtained from the ginners. Data on prices of lint cotton, seed cotton, and cottonseed and on date of sale were obtained from local buyers and were recorded along with the data on Government classification of the samples. In addition, supplementary information on the practice of selling cotton in the seed was obtained by personal interviews with growers, ginners, and local buyers.

¹The detailed analyses were largely confined to data collected at Ridgeley, Tenn., in 1929-30; Ridgeley, Tenn., Laurelton and Tuckerman, Ark., and New Madrid, Mo., in 1929-30; Ridgeley, Tenn., New Madrid, Mo., Cherokee, Haskell, Shawnee, Stigler, Keystone, Porter, and Osage, Okla., in 1930-31; Ridgeley, Bennis, and Bells, Tenn., Sikeston and New Madrid, Mo., Wagner, Locust Grove, Boggs, Cherokee, Haskell, Shawnee, Stigler, and Keystone, Okla., in 1931-32; and at Ridgeley, Bennis, and Bells, Tenn., and Sikeston, Mo., in 1932-33.

EXTENT OF PRACTICE OF SELLING COTTON IN THE SEED

Cotton sold in the seed represents a small proportion of the total crop of the United States, but the indications are that in other major cotton-producing countries, where the practices in connection with the production and marketing of cotton are considerably different from those in the United States, a large proportion of the cotton produced is sold by growers before it is ginned (?).⁵ In Egypt and India, for example, most of the cotton produced is sold by growers before it is ginned, and in Brazil a large proportion of the cotton is sold in the seed. Apparently, custom ginning is more highly developed or is more generally practiced, in the United States than in any other major cotton-producing country.

The practice of selling unginmed cotton other than remnants in this country is confined chiefly to Oklahoma, northeastern Arkansas, southeastern Missouri, Tennessee, Virginia, and in parts of North Carolina, but the sale of remnants from other parts of the Cotton Belt accounts for a considerable quantity of cotton that is sold in the seed. During the 4-year period 1912-15, almost 9 percent of the total United States cotton crop was sold in the seed, a large proportion of which no doubt was accounted for by the sale of remnants (?). During this period the proportion of the cotton sold in the seed amounted to 90 percent in Missouri; 60 in Tennessee; 37 in Oklahoma; and 13 in Arkansas.

Fragmentary data for more recent years indicate a considerable decrease in the proportion of the total crop sold in the seed in some districts, whereas some increases were indicated for other districts. During the 4-year period 1928-31, about 22 percent of the cotton produced in Oklahoma was sold in the seed (table 1). The proportions varied from less than 10 percent in the southwestern to more than 80 percent in the northeastern part of the State. A large part of the decrease in the proportion of the cotton produced in the State as a whole, that was sold in the seed, was accounted for by a marked increase in proportion of the State total produced in the southwestern part of the States where a relatively small proportion of the cotton is sold in the seed. Since 1931 the proportion of the cotton sold in the seed in Oklahoma apparently has not changed very greatly.

TABLE 1.—Quantity and proportion of cotton custom-ginned and cotton sold in the seed, specified areas, 1928-32¹

Area and season beginning August	Bales reported			Proportional distribution		
	Custom-ginned	Sold in seed	Total	Custom-ginned	Sold in seed	Total
Oklahoma: ²	1,000	1,000	1,000	Percent	Percent	Percent
1928-29.....	18	63	81	22	78	100
1929-30.....	7	59	66	11	89	100
1930-31.....	12	59	71	17	83	100
1931-32.....	29	65	94	31	69	100
Total.....	66	246	312	21	79	100

See footnotes at end of table.

¹ Information on the practices in connection with selling cotton in Egypt, India, and Brazil is based on observations made by P. K. Norris, senior marketing specialist, Bureau of Agricultural Economics during his studies of the production and marketing of cotton in these countries.

TABLE 1.—Quantity and proportion of cotton custom-ginned and cotton sold in the seed, specified areas, 1928-32—Continued

Area and season beginning August	Bales reported			Proportional distribution		
	Custom-ginned	Sold in seed	Total	Custom-ginned	Sold in seed	Total
Oklahoma—Continued.						
Area 2: ¹	1,000	1,000	1,000	Percent	Percent	Percent
1928-29.....	18	50	68	26	74	100
1929-30.....	14	38	52	27	73	100
1930-31.....	19	40	59	32	68	100
1931-32.....	27	46	73	37	63	100
Total.....	78	174	252	31	69	100
Area 3: ²						
1928-29.....	111	65	176	63	37	100
1929-30.....	64	56	120	53	47	100
1930-31.....	90	50	140	64	36	100
1931-32.....	110	71	181	61	39	100
Total.....	375	242	617	61	39	100
Area 4: ³						
1928-29.....	763	66	829	92	8	100
1929-30.....	696	69	765	91	9	100
1930-31.....	496	61	557	89	11	100
1931-32.....	696	69	765	91	9	100
Total.....	2,651	265	2,916	91	9	100
Northeastern Arkansas: ⁴						
1928-29.....	11	36	47	23	77	100
1929-30.....	17	57	74	23	77	100
1930-31.....	11	36	47	23	77	100
1931-32.....	42	69	111	32	68	100
1932-33.....	7	11	18	39	61	100
Total.....	88	229	317	28	72	100
Southeastern Missouri: ⁵						
1928-29.....	23	59	81	27	73	100
1929-30.....	33	86	119	28	72	100
1930-31.....	35	74	112	34	66	100
1931-32.....	64	165	229	28	72	100
1932-33.....	6	48	54	11	89	100
Total.....	161	432	593	27	73	100
Western Tennessee: ⁶						
1928-29.....	30	139	169	18	82	100
1929-30.....	36	144	180	20	80	100
1930-31.....	34	108	142	24	76	100
1931-32.....	62	159	221	28	72	100
1932-33.....	25	74	99	25	75	100
Total.....	187	624	811	23	77	100

¹ The number of bales reported represented on the average about 80 percent of the cotton produced in these areas.

² Data for the State were compiled from individual gin reports filed with the Oklahoma State Corporation Commission and published by the Oklahoma Agricultural Experiment Station. Bull. 219.

³ Adair, Cherokee, Craig, Creek, Delaware, Mayes, Muskogee, Noble, Nowata, Ottawa, Okmulgee, Osage, Rogers, Tulsa, and Washington Counties included.

⁴ Kay, Kingfisher, Logan, McIntosh, Payne, Pawnee, Sequoyah, Wagoner, and Woodward Counties included.

⁵ Atoka, Bryan, Coal, Garfield, Haskell, Hughes, LeFlore, Lincoln, Major, Okfuskee, Oklahoma, Pottawatomie, Pittsburg, Pontotoc, and Seminole Counties included.

⁶ Alfalfa, Beckham, Blaine, Caddo, Choctaw, Canadian, Cleveland, Comanche, Cotton, Carter, C. Mar., Dewey, Ellis, Garvin, Grady, Greer, Harmon, Jackson, Jefferson, Johnston, Kiam, and Washita Counties shall, McCurtain, McClain, Murray, Pushmataha, Roger Mills, Stephens, and Washita Counties included.

⁷ Data compiled from individual gin records in Green, Independence, Jackson, Lawrence, Clay, and Randolph Counties.

⁸ Data compiled from individual gin records in Boone, Butler, Dunklin, Mississippi, New Madrid, Pemiscot, and Stoddard Counties.

⁹ Data compiled from individual gin records in Bradley, Crockett, Giles, Madison, McMinn, Wayne, Bedford, Benton, Carroll, DeWitt, Dyer, Gibson, Henry, Lake, Maury, Obion, Rutherford, and Weakley Counties.

Data obtained from gin records in six cotton-producing counties in northeastern Arkansas indicate that during the 4-year period 1928-31 more than two-thirds of the cotton produced in these counties was sold in the seed (table 1). Similar data for 18 cotton-producing counties in Tennessee show that more than three-fourths of the cotton produced in those counties was sold in the seed (table 1). Data obtained from gin records in the cotton-producing areas of Missouri show that during the 5-year period 1928-32 almost three-fourths of the cotton produced in that State was sold in the seed (table 1). Reports indicate, however, that since the beginning of the cotton-adjustment program under the Agricultural Adjustment Administration in 1933, the sale of cotton in the seed in Missouri has declined to negligible proportions. Available information indicates some reduction during recent years in the proportion of the cotton produced in northeastern Arkansas and western Tennessee that was sold in the seed.

The proportion of the total quantity of cotton sold in various localities that was accounted for by cotton sold in the seed increased as the season advanced. An examination of the data on 22,933 bales of cotton sold in selected local markets in eastern Oklahoma, northern Arkansas, Missouri, and Tennessee, during the five seasons 1928-32, shows that the proportion of the total number of bales sold accounted for by cotton sold in the seed increased from about 50 percent in September to about 66 percent in December (4). At least a part of this increase is accounted for by an increase in the sale of remnants toward the end of the season.

SIZE OF LOADS OF COTTON SOLD

Data on the size of the loads of cotton sold in the seed indicate that remnants account for only a part of the cotton sold in this way. Information on the size of 23,426 loads sold in the seed in Missouri and Tennessee during the seasons 1929-30, 1930-31, and 1931-32 shows that more than half of them were bale size or larger (table 2). Data collected on the sizes of 16,000 loads of cotton sold in the seed in eastern Oklahoma during the seasons 1930-31 and 1931-32 show similar distributions (4). Of the total quantity of cotton sold in the seed in these areas about one-fourth was delivered to the gin in loads of less than bale size and more than 40 percent was delivered in loads larger than bale size. The proportion of the loads that were less than bale size increased somewhat in November and December, but even in December the quantity of cotton sold in the seed that was delivered in loads less than bale size represented only about 27 percent of all cotton sold in this way.

Data obtained by personal interviews with more than 400 cotton growers in Missouri and Tennessee and with more than 300 ginners in Arkansas, Missouri, and Tennessee, indicate that convenience, percentage of lint to seed cotton, and prevailing prices were more important considerations than small lots in determining whether or not the cotton was sold before it was ginned. The information obtained from these growers indicates further that almost three-fourths of the cotton sold in the seed in less than bale-size loads were remnants.

TABLE 2.—Distribution of cotton sold in the seed at selected gins in Missouri and Tennessee by size of loads and by months and seasons, 1929-32¹

Size of load (pounds)	Loads of cotton sold in—											
	September		October		November		December		January or later		Season	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Below bale size:												
Under 500.....	237	8.1	217	3.0	246	4.0	224	6.2	210	6.0	1,134	4.8
500 to 299.....	264	6.9	222	3.0	250	4.6	253	7.0	217	6.3	1,176	5.0
300 to 399.....	191	6.5	274	3.7	299	4.9	296	5.7	189	5.6	1,159	4.9
400 to 499.....	156	4.3	255	3.9	303	5.0	183	5.1	171	4.9	1,068	4.6
500 to 599.....	158	5.4	308	4.2	318	5.2	173	4.8	161	4.7	1,121	4.8
600 to 699.....	92	3.1	269	3.7	301	4.9	175	4.9	158	4.6	995	4.2
700 to 799.....	96	3.3	286	3.9	295	4.8	169	4.5	144	4.2	981	4.2
800 to 899.....	112	3.8	293	4.0	311	5.1	159	4.4	127	3.7	1,002	4.3
900 to 999.....	109	3.7	277	3.8	300	4.9	167	4.7	127	3.7	980	4.2
1,000 to 1,099.....	95	3.2	325	4.4	280	4.6	164	4.6	120	3.5	934	4.2
1,100 to 1,199.....	82	2.8	265	3.6	281	4.5	132	3.7	123	3.6	883	3.8
Total.....	1,502	51.1	2,021	41.2	3,214	62.6	1,995	55.6	1,750	50.7	11,483	49.0
Bale size:												
1,200 to 1,299.....	93	3.2	314	4.3	202	4.8	139	3.9	127	3.7	965	4.1
1,300 to 1,399.....	96	3.3	358	4.9	285	4.7	121	3.4	132	3.8	992	4.2
1,400 to 1,499.....	97	3.3	405	5.5	332	5.4	110	3.2	131	3.8	1,081	4.6
1,500 to 1,599.....	132	4.5	335	7.3	325	5.3	132	3.7	136	3.0	1,260	5.4
1,600 to 1,699.....	111	3.8	450	6.1	345	5.6	132	3.7	159	4.4	1,191	6.1
1,700 to 1,799.....	135	4.5	377	5.2	245	4.0	160	4.4	155	4.5	1,072	4.6
Total.....	664	22.6	2,430	33.3	1,824	29.8	800	22.3	834	24.1	5,591	28.0
Above bale size:												
1,800 to 1,899.....	121	4.1	364	4.9	211	3.4	126	3.5	128	3.7	950	4.1
1,900 to 1,999.....	113	3.8	277	3.8	185	3.0	136	3.8	135	3.9	846	3.6
2,000 to 2,099.....	94	3.2	269	3.7	163	2.6	127	3.6	131	3.8	784	3.4
2,100 to 2,199.....	101	3.4	242	3.3	140	2.3	107	3.0	117	3.4	707	3.0
2,200 to 2,299.....	71	2.4	171	2.3	93	1.5	59	1.6	71	2.1	465	2.0
2,300 to 2,399.....	57	1.9	123	1.7	65	1.1	55	1.5	55	1.6	355	1.5
2,400 to 2,499.....	44	1.5	102	1.4	42	0.7	42	1.2	32	0.9	262	1.1
2,500 to 2,599.....	36	1.2	83	1.1	37	0.6	42	1.2	23	0.7	221	0.9
2,600 to 2,699.....	28	1.0	43	0.6	22	0.4	16	0.4	31	0.9	140	0.6
2,700 to 2,799.....	24	0.8	26	0.4	18	0.3	8	0.2	18	0.5	94	0.4
2,800 to 2,899.....	8	0.3	29	0.4	20	0.3	7	0.2	13	0.4	77	0.3
2,900 to 2,999.....	17	0.6	11	0.1	11	0.2	9	0.3	14	0.4	62	0.3
3,000 to 3,099.....	12	0.4	12	0.2	16	0.3	5	0.1	14	0.4	63	0.3
Over 3,099.....	49	1.7	115	1.6	53	0.9	52	1.5	87	2.5	356	1.5
Total.....	775	26.3	1,871	25.5	1,076	17.0	791	22.1	899	25.2	5,382	23.0
All sizes.....	2,041	100.0	7,331	100.0	6,114	100.0	3,587	100.0	3,453	100.0	23,420	100.0

¹ Gins at New Madrid and Sikeston, Mo., seasons 1929-31; Bells, Dyer, and Ridgely, Tenn., seasons 1929-31; and Martin, Tenn., seasons 1930-32.

GRADE AND STAPLE LENGTH OF THE COTTON

Data on the grade and staple length of cotton sold in selected local markets in Oklahoma, Missouri, and Tennessee during the seasons 1929-30 to 1932-33, inclusive, show that cotton sold in the seed averaged somewhat lower in grade but somewhat longer in staple than that custom-ginned (table 3). It should be noted, however, that a substantial proportion of the cotton sold in the seed was higher in grade and shorter in staple length than some of the cotton that was custom-ginned and sold in the same local markets on the same days.

About 56 percent of the cotton sold in the seed was White or Extra White Middling and above in grade, whereas about 72 percent of the cotton that was custom-ginned and sold in the same local markets was of these grades. The larger proportion of the higher grades for cotton custom-ginned than for that sold in the seed is accounted for in part by the fact that a larger proportion of the

cotton sold in the seed was harvested toward the end of the season when the grades were generally lower than earlier in the season. Furthermore, as indicated more in detail elsewhere in this bulletin, some farmers found it advantageous to sell their wet, rough, trashy, and other low-turn-out cotton in the seed, and to have their high-turn-out cotton custom-ginned.

TABLE 3.—Percentage distribution by grade and staple length of cotton custom-ginned and cotton sold in the seed at selected local markets in Oklahoma, Missouri, and Tennessee, 1929-32¹

Grade and staple length	Year beginning August									
	1929		1930		1931		1932		Total	
	Custom-ginned	Sold in seed	Custom-ginned	Sold in seed	Custom-ginned	Sold in seed	Custom-ginned	Sold in seed	Custom-ginned	Sold in seed
Grade:										
White: ²	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Good Middling.....		0.8	2.3	1.3	0.0	1.8	0.4	0.2	2.9	1.1
Strict Middling.....	13.0	30.8	30.0	21.7	34.0	15.0	24.0	20.7	29.4	22.3
Middling.....	34.3	21.4	45.1	44.8	30.0	30.3	47.9	40.0	40.1	32.3
Strict Low:										
Middling.....	21.9	7.3	10.0	18.8	14.6	19.4	13.9	12.9	15.0	14.1
Low Middling.....	10.0	9.9	5.3	9.7	5.1	8.5	2.7	2.0	4.5	7.9
Strict Gonn:										
Ordinary.....	7.5	13.4	.4	2.8	2.8	16.1	1.8	2.4	2.0	10.8
Good Ordinary.....	1.6	1.8		.2	.4	2.5	.6	1.8	.4	1.8
Total.....	80.1	85.4	90.1	99.3	93.8	93.6	91.3	86.0	94.3	90.3
Spotted:										
Good Middling.....		.2			.5	.5	.4		.3	.2
Strict Middling.....	1.0	2.1	.4		2.3	1.7	6.1	9.6	3.0	3.1
Middling.....	3.5	4.7	.4	.7	2.7	1.8	1.6	2.5	1.7	2.7
Strict Low:										
Middling.....	5.4	2.8	.1		.6	.9	.2	.5	.5	1.4
Low Middling.....	1.0	4.8			.1	1.5	.4	1.2	.2	2.3
Total.....	10.9	14.6	.9	.7	6.2	6.4	8.7	14.0	5.7	9.7
Total white and spotted.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Staple length (inches):										
Shorter than ¾.....					2.2	1.0	1.0	.1	3.5	1.6
¾ and 29/32.....	30.8	2.4	7.4	9.0	35.4	29.1	33.7	15.7	35.0	18.9
3/8 and 3/32.....	48.8	37.1	30.4	37.5	43.5	46.1	37.2	34.9	40.7	40.1
1 and 1½.....	17.4	30.2	40.4	30.6	16.7	21.4	24.6	44.6	18.3	30.5
1½ and 1¾.....	4.5	17.2	13.9	12.8	2.6	2.3	2.4	4.7	2.3	7.0
1¾ and 1¾.....	.5	3.5	1.6	1.0		.1	.2	.1	.2	1.2
1¾ and 1¾.....		.1	.2	.1						.1
1¾ and longer.....		.2	.1							
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ The number of markets included was 4 in 1929-30; 9 in 1930-31; 11 in 1931-32; and 3 in 1932-33. The number of bales included for custom-ginned and for cotton sold in the seed amounted to 201 and 1,536 bales, respectively, in 1929-30; 1,721 and 1,914 bales in 1930-31; 2,249 and 4,882 bales in 1931-32; 1,969 and 2,537 bales in 1932-33; and 6,143 and 13,579 bales, respectively, for the 4-year total. Cotton other than White, Extra White, and Spotted not included.

² Includes Extra White cotton.

The proportion of the cotton that was shorter than fifteen-sixteenths of an inch in staple averaged 38 percent for custom-ginned cotton and 20 percent for cotton sold in the seed, whereas the proportion that was 1 inch and longer in staple averaged 21 percent for custom-ginned and almost 40 percent for cotton sold in the seed. The larger proportions of the longer staples for cotton sold in the seed than for cotton custom-ginned was largely accounted for by the fact

that the longer staples usually showed a lower percentage of lint turn-out than the shorter staples, and by the further fact that some farmers found it advantageous to sell their low-turn-out cotton in the seed.

Information relative to varieties of cotton sold in the seed, obtained from more than 300 ginnerers in Arkansas, Missouri, and Tennessee indicated that some cotton of the different varieties grown in the selected communities was sold in the seed and that some was custom-ginned but that Half and Half was the variety most frequently reported as custom-ginned. Varieties most frequently reported as sold in the seed included Acala, Rowden, Delta Pine Land, and Trice. These varieties generally have staples somewhat longer, but the percentage of lint to seed cotton is usually somewhat lower than for cotton of Half and Half and other varieties of very short staple. The advantages to the grower of having his short-staple high-turn-out cotton custom-ginned, and of selling the longer stapled low-turn-out cotton in the seed, will be indicated later.

RETURNS TO GROWERS

RETURNS FROM COTTON SOLD IN THE SEED VERSUS THOSE FROM COTTON CUSTOM-GINNED

Returns to growers for cotton sold in the seed in selected local markets in Oklahoma, Arkansas, Missouri, and Tennessee, during the seasons 1928-29 to 1932-33, inclusive, averaged about the same as those for cotton custom-ginned and sold in the same local markets on the same days (table 4). Central-market evaluations on the basis of grade and staple length⁶ also averaged about the same for the cotton sold in the seed as for the cotton that was custom-ginned and sold in the same local markets on the same days (table 4).

Differences between the average lint-equivalent prices⁷ for cotton sold in the seed and the average prices to growers for cotton custom-ginned and sold in the same local markets on the same days varied considerably from month to month and from one season to another (table 4). Lint-equivalent prices for cotton sold in the seed in the selected local markets averaged somewhat lower during the seasons 1928-29, 1929-30, and 1930-31, and somewhat higher during the seasons 1931-32 and 1932-33, than prices to growers for cotton that was custom-ginned and sold in the same local markets on the same days. The decline in the general level of cotton prices during the seasons 1928-29, 1929-30, and 1930-31, along with the fact that seed cotton is not so readily salable in regular market channels as cotton already ginned and baled, may account for the relatively low lint-equivalent prices for cotton sold in the seed during these seasons.

⁶ Central-market evaluations on the basis of grade and staple length were obtained by adding central-market premiums for the higher grades and longer staples to and by subtracting central-market discounts for the lower grades and shorter staples from the quoted price of Middling $\frac{3}{8}$ -inch cotton.

⁷ Lint-equivalent prices were obtained by dividing the value of the seed cotton plus the costs of ginning (including the costs of bagging and ties) less the value of the cottonseed by the weight of the bale.

TABLE 4.—Average prices for cotton custom-ginned and cotton sold in the seed and differences between these prices in selected local and central markets for specified months, seasons 1928-32¹

Season and month	Bales of cotton		Average price per pound to growers for cotton		Difference between prices of cotton custom-ginned and sold in seed ²	
	Custom-ginned	Sold in seed	Custom-ginned	Sold in seed ³	Custom-ginned	Sold in seed
	Number	Number	Cents	Cents	Cents	Cents
1928-29:						
September.....	50	33	18.52	18.56	0.01	-0.02
October.....	295	247	18.08	18.61	-0.05	-0.16
November.....	355	243	17.46	17.57	.11	-0.02
December.....	118	107	16.13	15.04	-1.09	-0.33
Total or average.....	818	630	17.76	17.60	-.10	-.13
1929-30:						
September.....	128	162	18.39	18.23	-.16	.26
October.....	370	953	18.06	17.63	-.43	.08
November.....	201	718	16.57	15.91	-.66	.00
December.....	4	88	15.75	16.25	.50	-1.12
Total or average.....	706	1,921	17.42	16.97	-.45	.06
1930-31:						
September.....	607	441	9.01	9.25	-0.86	0.01
October.....	865	925	9.21	9.16	-.03	.00
November.....	267	377	9.22	9.79	.57	-0.32
December.....	20	71	7.70	6.92	-.87	-0.28
Total or average.....	1,768	1,814	9.24	9.23	-.11	-.03
1931-32:						
September.....	707	567	5.47	5.70	.23	.15
October.....	1,708	1,818	5.40	5.60	.20	.05
November.....	1,255	1,494	5.80	5.82	.02	-.01
December.....	214	800	4.30	5.16	.30	-.18
January.....	35	390	4.91	5.15	.21	-.16
Total or average.....	3,949	5,069	5.40	5.57	.17	-.01
1932-33:						
September.....	581	838	7.11	7.28	.17	.09
October.....	1,466	1,197	6.28	6.42	.14	.07
November.....	773	707	5.75	5.78	.03	-.04
December.....	294	279	5.40	4.83	-.57	-.23
January.....	15 ⁴	135	5.72	5.16	-.56	-.61
Total or average.....	3,162	3,156	6.28	6.31	.03	.00
1928-29 to 1932-33:						
September.....	2,076	2,041	8.34	8.32	-.02	.10
October.....	4,791	5,140	8.21	8.22	.01	.04
November.....	2,851	3,539	8.33	8.28	-.05	-.05
December.....	639	1,345	7.27	7.27	.00	-.20
January.....	50	525	5.17	5.17	.00	-.28
Total or average.....	10,343	12,590	8.04	8.02	-.02	.01

¹ Season begins with August. The markets included 1 in Tennessee in 1928-29; 1 in Tennessee, 2 in Arkansas, and 1 in Missouri in 1929-30; 1 in Tennessee, 1 in Missouri, and 6 in Oklahoma in 1930-31; 3 in Tennessee, 2 in Missouri, and 3 in Oklahoma in 1931-32; and 3 in Tennessee and 1 in Missouri in 1932-33. In arriving at seasonal averages, monthly averages of prices and of differences were weighted by the number of bales of cotton sold in the seed.

² Minus sign (-) means that the lint-equivalent price of cotton sold in the seed was lower than the price of cotton custom-ginned.

³ Lint-equivalent prices obtained by dividing the value of the seed cotton plus the costs of ginning (including burling and ties) minus the value of the cottonseed by the weight of the bale. Adjustments were made for the influences of changes in price level as reflected in central markets on the differences between the average prices for cotton sold in the seed and cotton custom-ginned.

Differences between lint-equivalent prices for cotton sold in the seed and prices to growers for cotton that was custom-ginned and sold in the same local markets on the same days also varied considerably from one transaction to another. In selected local markets in Missouri during the seasons 1930-31 to 1932-33, for example, the daily average lint-equivalent price for cotton sold in the seed exceeded prices of 29 percent of the custom-ginned cotton by more than \$3 a bale of 500 pounds; 36 percent, by more than \$2 a bale; and 53 percent, by more than \$1 a bale. On the other hand, returns to growers for cotton sold in the seed were \$3 or more a bale lower than 12 percent of the custom-ginned cotton; \$2 or more a bale lower than 19 percent of the custom-ginned cotton; and \$1 or more a bale lower than 26 percent of the custom-ginned cotton sold in the same local markets on the same days. More-or-less similar variations were indicated by the data obtained in the other markets included in this study.³

In arriving at the differences between lint-equivalent prices for cotton sold in the seed and prices to growers for cotton custom-ginned, no adjustments were made for differences in grade and staple length. As previously indicated, cotton sold in the seed generally averaged somewhat lower in grade but somewhat longer in staple than that custom-ginned. On the basis of central-market evaluations for grade and staple length, the influences of the somewhat lower average grade for cotton sold in the seed on the differences in central-market values of the cotton was about offset by the somewhat longer staple length for the cotton sold in the seed, with the result that the central-market evaluations of cotton sold in the seed were, on the average, about the same as those for cotton that was custom-ginned and sold in the same markets on the same days (table 5).

TABLE 5.—Average central-market evaluation for grade and staple length above and below Middling $\frac{3}{8}$ -inch for cotton custom-ginned and cotton sold in the seed in selected local markets, and differences between evaluations, by specified months, seasons 1928-32¹

Period and month	Bales		Average price per pound above or below—					
	Custom-ginned	Sold in seed	Middling grade ²			$\frac{3}{8}$ -inch staple length ³		
			Custom-ginned	Sold in seed	Sold in seed minus custom-ginned	Custom-ginned	Sold in seed	Sold in seed minus custom-ginned
	Number	Number	Cents	Cents	Cents	Cents	Cents	Cents
1928-32:								
September	2,070	2,041	0.15	0.16	0.00	0.27	0.37	0.10
October	4,704	5,140	— .00	— .02	— .02	.32	.38	.06
November	2,854	3,539	— .26	— .40	— .14	.04	.05	.01
December	659	1,345	— .08	— .10	— .02	.18	.17	— .01
January	50	529	— .06	— .08	— .02	.13	.10	— .03
Total or average	10,343	12,590	— .00	— .11	— .05	.21	.25	.04

¹ Season begins with August. The markets included 1 in Tennessee in 1928-29; 1 in Tennessee, 2 in Arkansas, and 1 in Missouri in 1929-30; 1 in Tennessee, 1 in Missouri, and 6 in Oklahoma in 1930-31; 3 in Tennessee, 2 in Missouri, and 8 in Oklahoma in 1931-32; and 3 in Tennessee and 1 in Missouri in 1932-33. Monthly averages were weighted by the number of bales of cotton sold in the seed in arriving at seasonal averages.

² Minus sign (—) means below the price of Middling grade of the same staple length.

³ Minus sign (—) means below the price of $\frac{3}{8}$ -inch staple of the same grade.

⁴ The difference between the lint-equivalent prices for cotton sold in the seed and prices to growers for cotton that was custom-ginned and sold in the same local markets on the same days show rather wide variations, but the number of items included in the sample was fairly large, and the standard error of the mean for the average differences was about 0.05 cent for the seasons 1928-29 and 1930-31; 0.02 cent for 1929-30, 1931-32, and 1932-33; and about 0.01 cent for the five seasons 1928-29 to 1932-33, combined.

Although the data previously presented show that returns to growers for cotton sold in the seed averaged about the same as those to growers for cotton custom-ginned and sold in the same local markets on the same days, returns to growers for cotton custom-ginned averaged somewhat greater than they would have if the cotton had been sold in the seed on the same day at the prevailing prices for seed cotton. In making such comparisons, the assumption that seed-cotton prices were the same as they would have been if all cotton had been sold in the seed, may be misleading. To the extent that prevailing prices of seed cotton are based on average quality and percentage of lint to seed cotton, an increase in the proportion of the high lint turn-out and good-quality cotton would tend to raise the average price for seed cotton, even if prices did not vary with the quality and turn-out of individual loads.

The difficulty of accurately determining the quality of the lint and the percentage of lint to seed cotton from an examination of the seed cotton complicates the problem of varying the prices of seed cotton with the quality of the lint and the gin turn-out for individual loads. Generally, the seed-cotton prices for individual loads did not vary with the percentage of lint to seed cotton or with the quality of the lint.

Differences in percentage of lint to seed cotton largely account for the differences between the results obtained from a comparison of the lint-equivalent prices for cotton sold in the seed with prices to growers for custom-ginned cotton, and those obtained from a comparison of the seed-cotton equivalent prices⁹ for custom-ginned cotton with prevailing prices of seed cotton. With the same prices for seed cotton, lint-equivalent prices vary inversely with the percentage of lint to seed cotton.

It was found, for example, that (with prices of seed cotton at \$3 for 100 pounds, with ginning costs at 30 cents for 100 pounds of seed cotton, plus \$1.50 a bale for bagging and ties, with cottonseed at \$20 a ton, and with 10 percent of trash) an increase in percentage of lint to seed cotton from 30 to 35 decreased the lint-equivalent price about 1.08 cents a pound, or an average of about 0.22 cent a pound for each increase of 1 pound of lint per 100 pounds of seed cotton. The data included in this study show that the quantity of lint per 100 pounds of seed cotton averaged about 2 pounds less for cotton sold in the seed than for cotton custom-ginned (table 6). The 2 pounds more of lint per 100 pounds of seed cotton for custom-ginned than for cotton sold in the seed was enough to account for a difference of about \$2.20 a bale in lint-equivalent prices.

VARIATIONS IN PRICES WITH GRADE AND STAPLE LENGTH

ON AN INDIVIDUAL-BALE BASIS

Prices to growers for cotton sold in the seed generally do not vary with the grade and staple length of the cotton from individual loads. Ginners do not attempt to determine very accurately the quality of the cotton before buying it in the seed, and usually the grower is paid the prevailing price regardless of the quality of his individual

⁹The seed-cotton-equivalent price was obtained by dividing the sum of the value of the lint plus the value of the cottonseed minus the cost of ginning (including bagging and ties) by the weight of the seed cotton.

load. In some instances, prices paid by ginners for seed cotton remain unchanged for several days, whereas the lint from seed cotton sold at these prices varied widely in grade and staple length. In one market in 1931, for example, prices of seed cotton remained unchanged from October 1 to October 8, although the quality of the cotton sold during this period varied from Strict Low Middling $\frac{7}{8}$ -inch to Strict Low Middling $1\frac{1}{16}$ inches. More or less similar variations in the grade and staple length of cotton sold in the seed at the same price prevailed in other markets (4).

TABLE 6.—Average percentage of lint to seed cotton for cotton custom-ginned and sold in the seed in selected local markets, and differences between these proportions for specified months, crops of 1928-32¹

Period and month	Bales of cotton		Lint turn-out for cotton		
	Custom-ginned	Sold in seed	Custom-ginned	Sold in seed	Sold in seed minus custom-ginned
1928-32	<i>Number</i>	<i>Number</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
September.....	740	964	33.2	31.7	-1.9
October.....	2,466	3,695	34.0	32.0	-2.0
November.....	1,388	2,367	33.4	30.5	-2.9
December.....	365	588	27.3	25.3	-2.0
January.....	256	525	24.7	23.6	-1.1
Total or average.....	5,164	8,139	32.6	30.5	-2.1

¹ These data were obtained from records at 1 gin in Tennessee in 1928, 2 gins in Tennessee, 3 gins in Missouri, and 2 gins in Arkansas in 1929; 2 gins in Tennessee in 1930; 1 gin in Tennessee and 1 gin in Missouri in 1931; and 1 gin in Missouri in 1932. The averages for the season were obtained by weighting the average for each month by the number of bales sold in the seed during that month.

Lint-equivalent prices for cotton which was sold in the seed varied considerably as a result of differences in percentage of lint to seed cotton. Individual loads of cotton which was sold in the seed in the same local markets at the same price showed considerable variation in percentage of lint to seed cotton. In one selected local market in 1931, for example, the lint turn-out for a number of bales of cotton which were sold in the seed at the same price varied from about 25 to about 34 percent, with the result that the lint-equivalent prices varied from 7 to 5.36 cents a pound, respectively. More or less similar variations were indicated by information obtained at other markets.

The percentage of lint to seed cotton was generally less for the cotton of longer staple and lower grade than for cotton of the shorter staple and higher grade. Consequently, the lint-equivalent prices for cotton sold in the seed at prevailing prices were generally higher for the longer staple and lower grade than for the shorter staple and higher grade cotton. Data collected in the selected local markets showed, for example, that premiums reflected in lint-equivalent prices for other staples above the price for $\frac{7}{8}$ -inch cotton of the same grade averaged 0.18 cent for $1\frac{1}{16}$ -inch, 0.24 cent for 1-inch to $1\frac{1}{32}$ -inches, and 0.49 cent for $1\frac{1}{4}$ - to $1\frac{3}{32}$ -inch staples. The lint-equivalent prices for cotton sold in the seed at prevailing prices averaged 0.35 cent higher for Strict Low Middling and Low Middling than for Middling and Strict Middling cotton of the same staple length. These differences in lint-equivalent prices are for cotton sold in the seed at the

same prices and are attributed entirely to differences in percentage of lint to seed cotton.

These differences in percentage of lint to seed cotton, along with the consequent differences in lint-equivalent prices, may account, at least in part, for the larger proportion of the longer staple and lower grade cotton being sold in the seed than was custom ginned in the same local markets at the same time. These differences may also help to account for the growing of the longer stapled varieties in communities in which a considerable proportion of the cotton is sold in the seed.

One of the principal criticisms of the practice of selling cotton in the seed is that it largely precludes payment to growers on the basis of quality because of the difficulty of determining the quality of cotton before it is ginned. The results of the analysis of the data obtained in this study support this allegation to a considerable extent. The alternative to selling cotton in the seed at prevailing prices was to have the cotton custom-ginned. But prices to growers for custom-ginned cotton sold in the same local markets on the same days show, in many instances, very little evidence of premiums and discounts on the basis of grade and staple length of individual bales (1, 5, 6, 8). Apparently, premiums for staple reflected in lint-equivalent prices for cotton sold in the seed at the same price averaged considerably more than the premiums for staple reflected in prices to growers for individual bales that were custom-ginned. But prices to growers for individual bales of custom-ginned cotton reflected considerable discounts for the lower grades, whereas lint-equivalent prices for cotton sold in the seed at prevailing prices averaged considerably higher for the lower than for the higher grades.

FROM MARKET TO MARKET

Differences in returns to growers on the basis of quality may be reflected in differences in price level from market to market as well as in premiums and discounts to growers on the basis of the grade and staple length of individual bales. Grade and staple premiums and discounts on the basis of individual bale, as previously presented, were found to be more or less independent of the average level of prices in these markets. Consequently, data on such premiums and discounts do not indicate to what extent average prices to growers in the respective local markets varied with the average grade and staple length of the cotton sold.

Average prices to growers in farmers' local markets may reflect fairly accurately the average differences in the quality of the cotton sold from market to market, even if prices to growers do not vary appreciably with the grade and staple lengths of individual bales. On the other hand, such average prices may fail to reflect the differences in average quality of the cotton from market to market, even when a large proportion of central-market grade and staple premiums and discounts are reflected in prices to growers on an individual-bale basis. To the extent that the average prices of cotton from market to market reflect the differences in average quality of the cotton sold in these markets, the production of the higher grades and the longer staples is rewarded on a community basis. But such differences in average prices may reflect little, if any, pre-

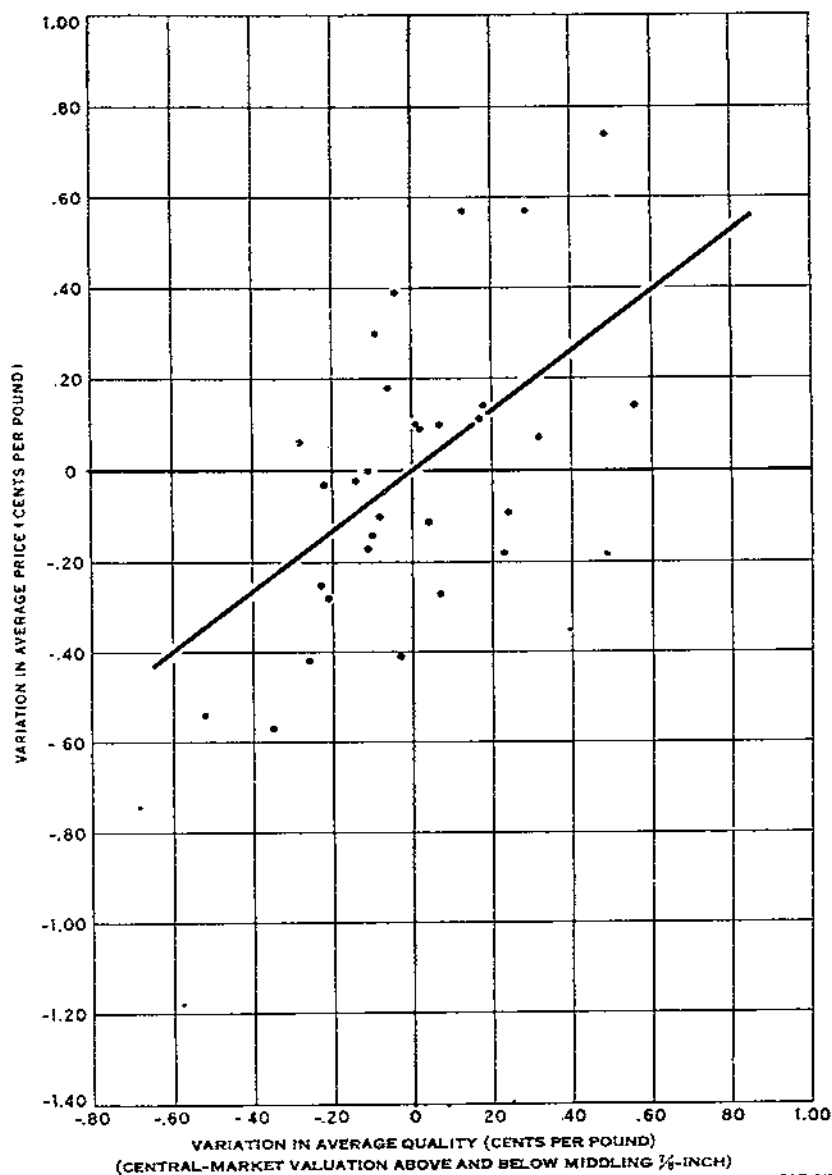
miums and discounts for grade and staple length on an individual-bale basis and may offer little inducement to the individual grower to improve the quality of the cotton produced.

Comparisons were made of the differences in average prices to growers in selected local markets, adjusted for differences in costs of transportation to ports or to domestic mill centers, with the differences in average central-market values of this cotton as a result of differences in grade and staple length.¹⁰ The results showed that, for cotton custom-ginned, the average prices to growers in markets where the cotton averages higher in grade and longer in staple were generally higher than the average prices to growers in markets where the cotton averaged lower in grade and shorter in staple (fig. 1). These differences in average prices were great enough in some instances to equal the premiums and discounts quoted in central markets for comparable grade and staple lengths.

This means that in some of the local markets the rewards to growers in the form of average prices on a community basis were fairly well in line with central-market premiums and discounts for grade and staple length. But, unless grade and staple premiums and discounts are reflected in prices to growers on an individual-bale basis, individual farmers may find it advantageous to sell poor-quality cotton in the market on the basis of the reputation of the community and by so doing tend to reduce the average price level at the expense of those who produce the higher quality cotton.

Considerable irregularity was shown in the relationship between differences in average prices from market to market, adjusted for differences in freight to ports, and differences in average quality as indicated by differences in central-market values on the basis of grade and staple length of the cotton sold. The coefficient of determination indicates that, on the average, about 45 percent of the differences in average price to growers for cotton custom-ginned in the specified local markets was accounted for by differences in the grade and staple length of the cotton sold. The relationship of the differences in average prices to growers from market to market to differences in central-market evaluations of this cotton on the basis of grade and staple length was somewhat more irregular for markets in areas in which a considerable proportion of the cotton was sold in the seed than for those in other parts of the Cotton Belt (5, 6). Similar analyses of data obtained in markets distributed throughout the Cotton Belt showed that about 70 percent of the differences in average prices to growers from market to market, adjusted for differences in transportation costs, was accounted for by differences in grade and staple length of the cotton sold. These irregularities are largely accounted for by variations in conditions in local markets, such as differences in the kind and degree of local competition, in outlet for cotton, in weights on which the cotton was sold, in bargaining power of farmers and local buyers, and in character of the cotton sold.

¹⁰ Grade and staple premiums and discounts as quoted in central markets were used in arriving at the differences in average central-market values of the cotton sold in these markets.



BAE 3423
 FIGURE 1.—RELATION OF AVERAGE PRICES TO AVERAGE QUALITY OF COTTON IN SELECTED LOCAL MARKETS IN OKLAHOMA, ARKANSAS, MISSOURI, AND TENNESSEE, SEASONS 1928-29 TO 1932-33.

Prices to growers, on the average, were somewhat higher in markets where the cotton averaged higher in grade and longer in staple than in markets where the cotton averaged lower in grade and shorter in staple, adjustments having been made for differences in transportation costs to ports. The coefficient of correlation was 0.67 ± 0.07 .

Prices to growers for cotton sold in the seed offered very little reward, on a community basis, for improving the quality of the cotton produced. Comparisons of differences in the average lint-equivalent prices for cotton sold in the seed from market to market with differences in average central-market prices for this cotton, as a result of differences in grade and staple length, showed very little relationship between average quality and average lint-equivalent prices (fig. 2). Apparently, the effect of the somewhat higher lint-equivalent prices for the longer than for the shorter staples, as a result of differences in percentage of lint to seed cotton, on the average price-quality relationship from market to market was largely offset by the effect of the somewhat lower lint-equivalent prices for the higher than for the lower grades.

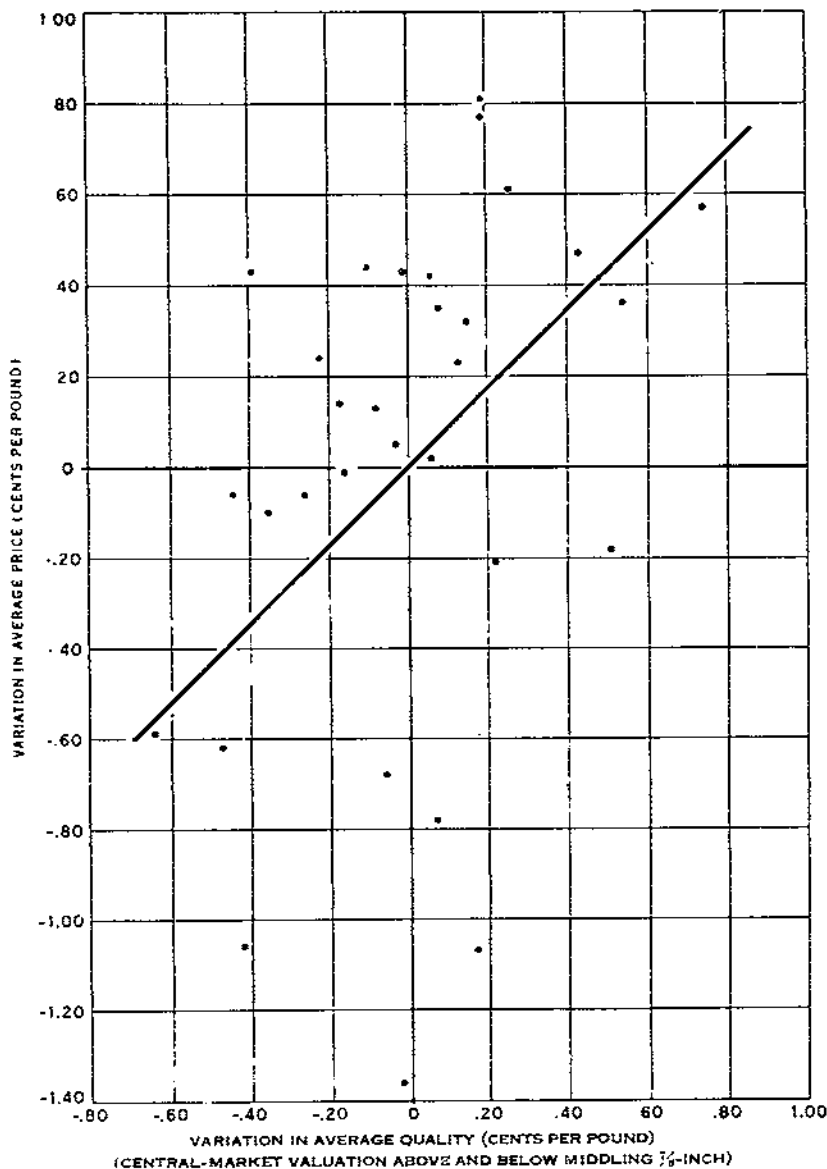
The irregularity shown in the relationship between average prices, adjusted for differences in location, and average quality, as indicated by differences in central-market values on the basis of grade and staple length, was so great for cotton sold in the seed that less than 14 percent of the differences in average prices to growers for cotton sold in the seed in the specified markets could be accounted for by differences in central-market values of this cotton, as a result of differences in grade and staple length.

OTHER ADVANTAGES AND DISADVANTAGES OF SELLING SEED COTTON

TO GROWERS

Advantages and disadvantages to growers of selling cotton in the seed, other than differences in returns, are important considerations in deciding whether to sell cotton in the seed or to have it custom-ginned. Data on advantages and disadvantages of selling cotton in the seed, from the point of view of growers, were obtained by interviewing 423 growers in Tennessee and Missouri during the season of 1931-32. During that season, these growers sold about 9,400 bales of cotton in the seed and had about 5,500 bales custom-ginned. More than twice as many of the replies from these farmers indicated advantages as indicated disadvantages of selling cotton in the seed.

The advantage to growers most frequently mentioned is convenience—more than half the replies from the interviewed growers indicated conveniences of this method of selling cotton. Growers were enabled to market readily loads of various sizes so they did not need to confine their sales to loads of bale size. Data on about 40,000 loads of cotton sold in the seed in selected local markets in eastern Oklahoma, Missouri, and Tennessee during the seasons 1929-30 to 1932-33, show that the size of the lots varied from less than 100 pounds to more than 10,000, and that less than one-third of the loads were of approximately bale size. The convenience of selling loads of various sizes is generally emphasized in connection with the sale of less than bale-size loads, but data on size of loads indicate that the conveniences are by no means confined to the sale of small loads. As previously indicated, approximately 40 percent of the cotton sold in the seed was sold in loads larger than bale size.



BAE 34224

FIGURE 2.-RELATION OF AVERAGE LINT-EQUIVALENT PRICE OF COTTON SOLD IN THE SEED TO AVERAGE QUALITY OF COTTON SOLD IN SELECTED LOCAL MARKETS IN OKLAHOMA, ARKANSAS, MISSOURI, AND TENNESSEE, SEASONS 1928-29 TO 1932-33.

Lint-equivalent prices for cotton sold in the seed averaged only slightly higher in markets where the cotton averaged higher in grade and longer in staple than in markets where the cotton averaged lower in grade and shorter in staple, adjustments having been made for differences in transportation costs to ports. The coefficient of correlation was 0.37 ± 0.10 .

This practice of selling cotton minimizes delays in unloading, particularly during the rush part of the season when the farmer's time is in greatest demand. During the height of the harvesting season it is often necessary for the grower to wait several hours and sometimes overnight to have his bale custom-ginned. Such delays, in addition to increasing the costs of handling cotton, impede harvesting and may result in additional loss from wastes and from deterioration in quality as a result of weather damages in the field. Other conveniences mentioned in the growers' replies included quick money returns and the ease of figuring rents.

More than one-fourth of the farmers, when indicating the advantages, said that the practice supplies a good market for the sale of wet, green, trashy, damp, and other low-turn-out cotton. Apparently, the advantages of selling such cotton in the seed grows out of the practice of paying a more or less uniform price for seed cotton, with little regard to the quality and the percentage of lint to seed cotton of individual loads. It is undoubtedly true that under such conditions the advantages of selling cotton in the seed are much greater for the low-turn-out cotton than for the high-quality and high-turn-out product, but the sale of such low-quality and low-turn-out cotton in the seed no doubt reduces the average price level in the community at the expense of those farmers who produce the higher quality and higher turn-out cotton.

Somewhat less than one-fourth of the replies indicated that money returns to growers for cotton sold in the seed were as great as or greater than those from cotton custom-ginned. These replies were in addition to those that indicated advantages of selling the low-turn-out cotton in the seed, but the implication in both sets of replies is that the returns to growers for cotton sold in the seed were high in relation to the returns from similar cotton that was custom-ginned and sold in the same market on the same days.

Growers can avoid the necessity of advancing money for ginning by selling their cotton in the seed. This may be an important consideration, particularly if ginning charges are high and if the value of the cottonseed is less than the charges for ginning. Information obtained by interviewing more than 300 ginners indicates that high ginning charges was one of the principal factors accounting for the practice of selling cotton in the seed.

The various advantages to growers of selling their cotton in this way in many instances appear to be more than offset by the disadvantages associated with this method of selling. The disadvantage most frequently reported by the growers interviewed was that the farmer lost money by selling cotton in the seed. Slightly more than one-fourth of these farmers so reported. In light of the data previously presented, this disadvantage is particularly applicable to cotton that has a high percentage of lint to seed cotton, but would not apply so generally to cotton with a low percentage of lint to seed cotton.

The failure to pay premiums and to make discounts on the basis of quality was given by about one-fifth of these farmers as a disadvantage of the practice. This disadvantage perhaps has been more widely publicized than all other disadvantages combined. The practice of selling cotton in the seed, as carried on in the markets studied,

encouraged farmers to grow the varieties that produce the largest yields of seed cotton per acre, regardless of other important considerations, and offered an inducement for growers to market their wet, green, trashy, dirty, and other low lint turn-out cotton in the seed at the expense of those who marketed clean and dry cotton. The influence of such practices is indicated by the data presented earlier showing that cotton sold in the seed, on the average, was lower in grade and had a lower percentage of lint to seed cotton than the cotton that was custom-ginned and sold in the same markets on the same days.

Furthermore, the general practice of not varying prices of seed cotton on the basis of its quality may result in the mixing of cotton differing so widely in quality elements that the spinning value of the cotton, particularly the higher qualities, may be reduced materially. Unless means are provided for segregating seed cotton on the basis of its quality, the ginned lint may include combinations of varieties differing widely in length of staple; combinations of cotton containing various kinds and quantities of foreign matter as a result of exposure in the field and of different methods of harvesting; and combinations of cotton of various stages of maturity and of deterioration as a result of including in the same bale well-matured cotton that was picked soon after it opened, well-matured cotton that was left exposed in the field for a long time after it opened, and cotton not fully matured before the end of the growing season. But such mixing is not confined to cotton sold in the seed, and objectionable features resulting from such mixtures apparently have not been particularly noticeable in the cotton from areas in which a large proportion of it was sold by growers before it was ginned.

Representatives of the largest cotton-shipping concerns in Memphis were interviewed in 1933 by a representative of the Bureau, and it was the consensus of the opinions expressed that the character of cotton from areas in Tennessee where selling in the seed was generally practiced was as good as that from any other district in the Memphis territory where the staple length of the cotton produced was about the same as that in Tennessee. Difficulties from mixed staples in the bale were said to be rare and were largely confined to cotton from gins so located as to draw cotton from a Delta area where the longer-stapled varieties are grown and from a hill section in which the short-staple varieties are produced. These shippers advised further that the practice of selling cotton in the seed leads to even greater difficulty in the matter of mixed grades, especially from cotton ginned late in the season. They were unanimous in their statements that they had encountered no unusual difficulties in the way of complaints made by cotton mills in regard to irregularity in the staple of cotton coming from areas in Tennessee where selling in the seed was generally practiced. On the other hand, recent reports indicate that some mill operators in Tennessee discriminate against cotton sold in the seed because of its mixed staple, excess moisture, losses in weight, and excessive waste in spinning.¹¹

Other disadvantages of selling cotton before it is ginned as listed by growers, were more or less closely associated with money income

¹¹ ALFRED C. E. and others, RELATION OF COTTON PRODUCTION TO CONSUMPTION BY AREAS IN TENNESSEE. *Tenn. Agr. Expt. Sta. Rural Research Ser. Monog. 58*, 1937. [Unpaginated.]

and payment on the basis of quality as previously discussed. Some said that when cotton was sold in the seed farmers could not speculate. Others said that selling cotton in the seed was disadvantageous to the producer of cotton with a high percentage of lint to seed cotton.

A disadvantage of the practice that has been particularly applicable in recent years is that it prevents the growers from availing themselves of the benefits of Government loans on cotton such as, for example, the Government 12-cent loan in 1934 and the Government 9-cent loan in 1937. These loans were made on the basis of warehouse receipts for cotton stored in approved warehouses and were not available until after the cotton was custom-ginned.

TO GINNERS

Buying cotton in the seed is advantageous to ginner in a number of ways. During the rush part of the harvesting season ginner can receive cotton faster than it can be ginned and the excess received can be stored, to be ginned during the slack part of the season. This flattening out of the peak load by extending the ginning period permits the ginning of an increased volume of cotton per unit of ginning equipment and tends to reduce ginning costs per bale. Cotton that is too wet for ginning when received at the gin can be stored for drying, and by so doing gin damages from ginning wet cotton can be reduced. The necessity of keeping the equipment and labor force ready for ginning when the quantity of cotton is not adequate for full-time operation is eliminated, with consequent savings in operating costs. The amount of bookkeeping required of the ginner is reduced somewhat, and losses from advancing to growers the costs of ginning are eliminated.

In addition, the purchase of cotton in the seed may be used by some ginner as a means of increasing the volume of cotton ginned and of obtaining an increased volume of cottonseed for sale to oil mills, both of which may contribute directly to the ginner's net income. Furthermore, the practice of buying cotton in the seed may place the ginner in a favorable position to distribute to growers good planting seed of improved varieties relatively best adapted to the growing conditions in the community (3) and in this way to contribute something toward an increased income for the community as a whole, including himself.

On the other hand, the purchase of cotton in the seed involves considerable risks on the part of the ginner, from differences in percentage of lint to seed cotton and from differences in price between the time the seed cotton is purchased and the time the ginned lint is ready for the market. These risks, along with the relatively high prices paid for seed cotton as a result of competition between the ginner, may more than offset the advantages of this practice to ginner. Data on the income-tax returns of certain ginner located in southeastern Missouri¹² for the years 1929, 1930, and 1931 indicate that about half of the gins sustained losses from the purchase of seed cotton. In Oklahoma it was found that ginner who bought

¹²LAMBURGEY, M. D. SOME ECONOMIC PHASES OF COTTON PRODUCTION IN SOUTHEASTERN MISSOURI. Master's thesis, Univ. Mo. 1932.

seed cotton paid prices which, on the average, were somewhat higher than the prices quoted in the Houston market minus the costs of transportation from the local markets to Houston (4).

Apparently, ginners in many instances were willing to buy cotton in the seed at prices high enough to permit only small profits, or in some instances to sustain losses, in order to attract an increased volume of cotton to the gin. As the volume of ginnings increased, gross income from ginning operations and profits from cottonseed also increased, and the overhead costs per bale decreased. The influence of buying seed cotton at relatively high prices on the volume of cotton attracted to the gin is largely offset, in most instances, by the competition of other ginners who follow the same practice. Under such conditions, the volume of cotton ginned by any gin is not likely to be materially different from what it would be if no ginners bought cotton in the seed, but so long as some ginners buy cotton in the seed as a means of attracting cotton to their gin, others may be forced to do likewise in self-protection.

SUMMARY

Most of the cotton produced in the United States is ginned and baled before it is sold by growers. Remnants sold toward the end of the season as seed cotton aggregate a considerable number of bales, but cotton sold in the seed other than remnants constitutes a substantial proportion of the cotton produced in some districts, particularly in the northern portion of the belt.

Earlier studies indicate that farmers taken as a whole have lost money by selling cotton before it was ginned. But the fact that substantial proportions of the cotton produced in some parts of the Cotton Belt continue to be sold in the seed suggests the need for additional information showing in detail the practices and results of selling cotton in the seed in the United States.

The results of analyses presented in this bulletin are largely based on information obtained in selected local markets in Oklahoma, Arkansas, Missouri, and Tennessee during the seasons 1928-29 to 1932-33.

Data on the size of the lots sold in the seed show variations from less than 100 pounds to more than 10,000 pounds. Less than half of the lots were smaller than bale size, 28 percent were about bale size, and 23 percent were larger than bale size.

Cotton sold in the seed averaged lower in grade and longer in staple than that custom-ginned and sold in the same local markets on the same days. The variety most frequently reported as custom-ginned was *Half and Half*, whereas *Acala*, *Rowden*, *Delta Pine*, and *Trice* were the varieties most frequently reported as sold in the seed.

Lint-equivalent prices for cotton sold in the seed in the selected local markets averaged somewhat lower during the seasons 1928-29, 1929-30, and 1930-31 and somewhat higher during the seasons 1931-32 and 1932-33 than prices to growers for cotton custom-ginned. For the 5 years combined the lint-equivalent prices for cotton sold in the seed averaged about the same as prices for custom-ginned cotton.

The average central-market prices on the basis of grade and staple length was about the same for cotton sold in the seed as for custom-

ginned cotton. The influence of the somewhat lower average grade for cotton sold in the seed on the differences in central-market values of the cotton was about offset by the somewhat longer staples for the cotton sold in the seed than for that custom-ginned.

The turn-out of lint cotton per 100 pounds of seed cotton averaged about 2 pounds less for cotton sold in the seed than for cotton custom-ginned and sold in the same local markets on the same days. The influence of these differences in lint turn-out was only partially reflected in average prices of seed cotton so that, under the conditions prevailing in the markets at the time, growers apparently found it advantageous to sell the low-turn-out cotton in the seed and to have the high-turn-out cotton custom-ginned.

Prices to growers for seed cotton generally did not vary with the grade and staple length of the cotton sold in individual lots, but the longer stapled varieties usually gave a lower percentage of lint to seed cotton than the shorter stapled varieties. Consequently, the lint-equivalent prices for cotton sold in the seed showed substantial premiums for the longer staples. On the other hand, the percentage of lint to seed cotton was generally less for the lower than for the higher grades, so that the lint-equivalent prices for cotton sold in the seed were generally substantially higher for the lower than for the higher grades.

Differences in average prices to growers from market to market for custom-ginned cotton generally varied directly with the differences in average central-market prices of the cotton on the basis of grade and staple length, with the result that farmers were generally rewarded on a community basis for producing the higher-quality cotton. Similar analyses of prices to growers for cotton sold in the seed, showed little relationship between differences in average lint-equivalent prices from market to market and the differences in average central-market values of the cotton on the basis of grade and staple length, with the result that very little reward was offered in the form of higher prices on a community basis for improving the quality of the cotton to be sold in the seed.

The practice of selling cotton in the seed has advantages and disadvantages to growers other than those of difference in prices. It enables growers to market readily lots of various sizes so that sales do not have to be confined to bale-size loads; it minimizes delays in unloading at the gins, particularly during the rush part of the season when the farmer's time is in greatest demand; it supplies an advantageous means of marketing low turn-out cotton; and it avoids the necessity for the grower to advance the costs of ginning.

On the other hand, this practice encourages farmers to grow low varieties of cotton that produce the largest yield of seed cotton per acre, regardless of other important considerations; offers an advantage for growers to sell wet, dirty, and other low-lint-turn-out cotton to the detriment of those who sell clean and dry cotton; and may reduce the spinning value of the cotton as a result of mixing seed cottons that differ widely in quality.

A disadvantage of the practice of selling cotton in the seed, particularly applicable in recent years, is that it prevents growers from availing themselves of the benefits of Government loans.

The practice of selling cotton in the seed enables the ginner to flatten out his peak load by extending the ginning period, and tends to reduce ginning costs; permits the ginner to store, for drying later, cotton that is received too wet for ginning and by so doing reduces gin damages from ginning wet cotton; and may be used as a means of increasing the volume of business.

On the other hand, buying cotton in the seed involves risks from differences in percentage of lint to seed cotton, from changes in prices between the time the cotton seed is bought and the time the gin lint is ready for the market, and from overpayment to growers as a means of attracting customers.

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