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UNITED STATES DEPARTMENT OF AGRICULTURE
Production and Marketing Administration
Cotton Branch

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# CHARGES FOR GINNING COTTON

## 1941-42 to 1946-47

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CONTENTS




ACKNOWLEDGMENT

This study was planned and conducted under the direction of John W. Wright, Chief, Research and Testing Division, Cotton Branch. Cooperation of ginners in all cotton-producing States in making the necessary data available is greatly appreciated. The efforts of the field representatives of the Cotton Branch, Production and Marketing Administration, in obtaining the primary data, are gratefully acknowledged.

# CHARGES FOR GINNING COTTON 1/

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## ECONOMIC IMPORTANCE OF THE GINNING INDUSTRY

During the 1946-47 season, 8,257 cotton gins were in operation in the United States. The value of these plants probably approaches $200,000,000. Expenditures by farmers for ginning services and bagging and ties during the period 1941-42 to 1946-47 averaged about $68,000,000 per year, and ranged from about $58,000,000 in 1945-46 to $79,000,000 in 1944-45. These facts indicate the economic importance of the ginning industry in the United States and the extent to which the cost of ginning services is a matter of direct concern to cotton growers.

Ginning had its beginning in the United States as a plantation operation. Small gin plants were built on farms then existing and the gin crew was selected from the regular plantation laborers. Cotton was picked and stored in what was known as "cotton houses." The ginning operation was performed during convenient intervals throughout the harvesting season.

For many years, cotton ginning has been highly commercialized. Over a long period, the trend has been toward fewer but larger gins. During the 1910-11 season, 26,234 plants ginned the crop of 11,608,616 bales, averaging 443 bales per plant (table 1). During the 1946-47 season 8,257 plants turned out 8,639,595 bales, or an average of 1,046 bales per plant. Thus, it will be seen that reduction in the number of active gins has been proportionately greater than the decrease in the number of bales produced.

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1/ This is the third in a series of reports dealing with ginning charges and related data in the United States. The first report, entitled "Rates for Ginning and Wrapping American Cotton and Related Data, seasons 1928-29 to 1935-36," by J. W. Wright and W. B. Lanham, was published by the Bureau of Agricultural Economics in mimeographed form in January 1937. The second report, entitled "Charges for Ginning Cotton," by John W. Wright and R. C. Soxman, was published in mimeographed form by the Agricultural Marketing Service in January 1942. It included data for the years 1936-37 to 1940-41. This, the third report, includes data for the period 1941-42 to 1946-47 and brings up to date some of the tables used in the previous publications.

Table 1. - Cotton production, number of active gins, and average volume of ginning per gin, seasons 1910-11 to 1946-47

| Season | Cotton production 1/ | Active gins | Average volume of ginning per gin |
|---|---|---|---|
| | Bales | Number | Bales |
| 1910-11 | 11,608,616 | 26,234 | 443 |
| 1911-12 | 15,692,701 | 26,349 | 596 |
| 1912-13 | 13,703,421 | 25,279 | 542 |
| 1913-14 | 14,156,486 | 24,749 | 572 |
| 1914-15 | 16,134,930 | 24,547 | 657 |
| 1915-16 | 11,191,820 | 23,162 | 483 |
| 1916-17 | 11,449,930 | 21,624 | 530 |
| 1917-18 | 11,302,375 | 20,351 | 555 |
| 1918-19 | 12,040,532 | 19,259 | 625 |
| 1919-20 | 11,420,763 | 18,815 | 607 |
| 1920-21 | 13,439,603 | 18,440 | 729 |
| 1921-22 | 7,953,641 | 16,192 | 491 |
| 1922-23 | 9,762,069 | 15,420 | 633 |
| 1923-24 | 10,139,671 | 15,298 | 663 |
| 1924-25 | 13,627,936 | 15,478 | 880 |
| 1925-26 | 16,103,679 | 15,482 | 1,040 |
| 1926-27 | 17,977,374 | 15,753 | 1,141 |
| 1927-28 | 12,956,043 | 14,863 | 872 |
| 1928-29 | 14,477,874 | 14,974 | 967 |
| 1929-30 | 14,824,861 | 14,868 | 997 |
| 1930-31 | 13,931,597 | 14,508 | 960 |
| 1931-32 | 17,095,594 | 14,151 | 1,208 |
| 1932-33 | 13,001,508 | 13,570 | 958 |
| 1933-34 | 13,047,262 | 13,543 | 963 |
| 1934-35 | 9,636,559 | 12,663 | 761 |
| 1935-36 | 10,638,391 | 12,812 | 830 |
| 1936-37 | 12,398,882 | 12,625 | 982 |
| 1937-38 | 18,945,028 | 12,838 | 1,476 |
| 1938-39 | 11,944,340 | 12,279 | 973 |
| 1939-40 | 11,815,759 | 11,885 | 994 |
| 1940-41 | 12,564,988 | 11,650 | 1,079 |
| 1941-42 | 10,741,589 | 11,148 | 963 |
| 1942-43 | 12,819,506 | 10,775 | 1,190 |
| 1943-44 | 11,428,747 | 10,090 | 1,333 |
| 1944-45 | 12,230,053 | 9,470 | 1,291 |
| 1945-46 | 9,014,374 | 8,632 | 1,044 |
| 1946-47 2/ | 8,639,595 | 8,257 | 1,046 |

1/ 500-pound gross-weight bales
2/ Preliminary

Compiled from reports of the U. S. Bureau of the Census.

Customarily, ginners buy cottonseed from their customers at the time cotton is ginned, and ginning charges are offset in the seed-purchasing transaction. The ginner usually deducts the charges for ginning services from the amount due the farmer for seed. Value of cottonseed usually exceeds the sum of ginning fee and charge for bagging and ties. (table 2). But, during the depression of the early 1930's such charges at times equalled or even exceeded the value of seed. In many instances during the depression period, ginners accepted the seed in lieu of cash for ginning services.

During the period 1941-42 to 1946-47, ginning charges ranged from about 27 to 31 percent of the amount received by the cotton grower for seed. During this same period charges for ginning and bagging and ties represented from about 4 to 5 percent of the combined farm value of cottonseed and cotton lint. Charges for ginning services have advanced considerably since the 1941-42 season. Such charges, however, between 1941-42 and 1946-47 represented a smaller proportion of the total farm value of cottonseed and lint than during any season of the period, 1928-29 to 1940-41.

The grade, an important factor in determining the market value of cotton, is influenced appreciably by the quality of the ginning service. Farmers, therefore, depend upon ginners to preserve the inherent value of cotton through use of satisfactory operating practices, modern equipment, and efficient cleaning and conditioning of seed cotton. The present trend seems to be toward large centralized gin plants, conveniently located, and equipped to receive and process cotton harvested by any present-day method.

## SOURCES OF DATA

Information pertaining to ginning charges and related data presented herein is based primarily on annual field surveys of selected gins representing about one-tenth of the active gins in the Cotton Belt. These data are supplemented with those received from secondary sources, which are cited in each instance.

## METHODS OF ASSESSING GINNING CHARGES

Charges for ginning in the United States usually are assessed according to one of four basic methods, as follows:

1. A rate per hundredweight of seed cotton.
2. A flat charge per bale.
3. A rate per hundredweight of lint.
4. A toll charge (a stated proportion of the seed cotton to become the property of the ginner).

Ginning charges assessed according to any one of the four above-named systems, may or may not include the charges for bagging and ties. Generally, however, when charges are based on seed cotton weights, separate charges are made for bagging and ties. Where charges are made

Table 2. - Average charge for ginning services, farm value of cottonseed and cotton lint, and percentage of farm value represented by ginning charge, seasons 1928-29 to 1946-47.

| Season | Per 500-pound gross-weight bale | | | | Percent of farm value of cotton-seed represented by ginning charges | Percent of combined farm value of cotton-seed and lint represented by ginning charges |
|---|---|---|---|---|---|---|
| | Charges for ginning services | Farm value | | | | |
| | | Cotton-seed 1/ | Cotton lint 1/ | Combined cotton-seed and lint | | |
| | Dollars | Dollars | Dollars | Dollars | Percent | Percent |
| 1928-29 | 5.96 | 15.18 | 89.95 | 105.13 | 39.3 | 5.7 |
| 1929-30 | 5.74 | 13.75 | 83.90 | 97.65 | 41.7 | 5.9 |
| 1930-31 | 5.05 | 9.82 | 47.30 | 57.12 | 51.4 | 8.8 |
| 1931-32 | 4.04 | 3.99 | 28.30 | 32.29 | 101.3 | 12.5 |
| 1932-33 | 4.34 | 4.58 | 32.60 | 37.18 | 94.8 | 11.7 |
| 1933-34 | 4.76 | 5.73 | 50.85 | 56.58 | 83.1 | 8.4 |
| 1934-35 | 5.05 | 14.71 | 63.00 | 77.71 | 34.3 | 6.5 |
| 1935-36 | 5.03 | 13.56 | 55.95 | 69.51 | 37.1 | 7.2 |
| 1936-37 | 4.93 | 14.79 | 61.80 | 76.59 | 33.3 | 6.4 |
| 1937-38 | 4.89 | 8.68 | 42.05 | 50.73 | 56.3 | 9.6 |
| 1938-39 | 4.72 | 9.69 | 43.00 | 52.69 | 48.7 | 9.0 |
| 1939-40 | 4.67 | 9.41 | 45.45 | 54.86 | 49.6 | 8.5 |
| 1940-41 | 4.76 | 9.65 | 49.45 | 59.10 | 49.3 | 8.1 |
| 1941-42 | 5.71 | 21.24 | 85.15 | 106.39 | 26.9 | 5.4 |
| 1942-43 | 5.95 | 20.33 | 95.20 | 115.53 | 29.3 | 5.2 |
| 1943-44 | 6.18 | 21.32 | 99.40 | 120.72 | 29.0 | 5.1 |
| 1944-45 | 6.44 | 21.11 | 103.65 | 124.76 | 30.5 | 5.2 |
| 1945-46 | 6.40 | 20.60 | 112.60 | 133.20 | 31.1 | 4.8 |
| 1946-47 | 8.09 | 2/29.24 | 2/163.00 | 192.24 | 27.7 | 4.2 |
| 19-year average | 5.31 | 13.27 | 67.55 | 80.82 | 40.0 | 6.6 |

1/ Calculations based on Bureau of Agricultural Economics reports

2/ Preliminary

on a per bale or lint weight basis, charges for bagging and ties frequently are included in the specified unit rate. During the period 1941-42 to 1946-47, from 80 to 90 percent of the crop was ginned on the basis of a separate charge for bagging and ties.

For the United States as a whole, nearly two-thirds of production during this 6-year period was ginned on the basis of charges assessed according to the hundredweight of seed cotton (table 3). Use of this method has increased in recent years since charges for less than three-fifths of production were assessed in this manner during the period, 1928-29 to 1940-41.

On the average, from 1941-42 to 1946-47, practically all cotton grown in the far West and Southwest, approximately three-fourths in the mid-South, and one-fifth in the Southeast was ginned on the basis of seed cotton weights. In the Southeast, this method of assessment was predominant in only one State - North Carolina.

During the six seasons, 1941-42 to 1946-47, about 23 percent of the crop was ginned for charges based on the hundredweight of lint. This was the principal method of ginning charge assessment in the Southeast but elsewhere was the major method only in Louisiana.

Charges for about one-tenth of production during the same period were based on a rate per bale. From three-fifths to about one-fourth of ginnings in Virginia, Tennessee, Alabama, and North Carolina were paid for by growers under this method.

In a few instances, mostly east of the Mississippi River, ginning charges were collected in the form of a proportion of the seed cotton. However, this method of obtaining ginning revenue amounted to less than 1 percent of cotton ginned during the period of World War II. The usual charge under this system was 5 percent of seed cotton weight if bagging and tie charges were included. If the ginner made a separate charge for bagging and ties, he usually charged a toll of 4 percent of the seed cotton under this method.

During the 19 seasons 1928-29 to 1946-47, methods of assessing ginning charges did not vary appreciably in any region except the Southeast. Prior to 1941-42, charges assessed on a per bale basis represented about three-fifths of ginnings in the Southeast. During the period 1941-42 to 1946-47, however, charges based on lint and seed cotton weights increased greatly to represent more than one-half and about one-fifth of ginnings, respectively.

The choice of a particular method of assessing ginning charges is influenced by two principal factors: (1) Local custom, and (2) the condition of seed cotton that is taken to the gin. In those sections of the Cotton Belt where snapping or machine-harvesting are common or where both hand-picked and roughly harvested cotton normally are received for ginning, charges usually are based on seed cotton weights.

Table 3. - Method of assessing ginning charges: Proportionate use of specified methods, by states and regions, average, seasons 1941-42 to 1946-47

| State and region | Method of assessing ginning charge | | | | | |
|---|---|---|---|---|---|---|
| | Per bale | Per cwt. lint | Per cwt. seed cotton | Seed cotton toll | Total | |
| | Percent | Percent | Percent | Percent | Percent | |
| Alabama | 37.2 | 44.7 | 16.7 | 1.4 | 100.0 | |
| Florida | 11.5 | 88.5 | --- | --- | 100.0 | |
| Georgia | 8.9 | 75.0 | 9.2 | 6.9 | 100.0 | |
| North Carolina | 25.9 | 17.1 | 55.1 | 1.9 | 100.0 | |
| South Carolina | 15.0 | 77.1 | 7.9 | --- | 100.0 | |
| Virginia | 61.2 | 10.2 | 28.6 | --- | 100.0 | |
| Southeastern region | 22.9 | 54.1 | 20.5 | 2.5 | 100.0 | |
| Arkansas | 2.3 | 3.3 | 93.8 | .1 | 99.5 | 1/ |
| Louisiana | .4 | 63.9 | 34.1 | 1.6 | 100.0 | |
| Mississippi | 9.2 | 13.5 | 76.8 | 2/ | 99.5 | 1/ |
| Missouri | --- | --- | 98.1 | --- | 98.1 | 1/ |
| Tennessee | 49.5 | 6.7 | 42.9 | .2 | 99.3 | 1/ |
| Mid-South region | 10.5 | 14.2 | 74.5 | .2 | 99.4 | 1/ |
| Oklahoma | 1.1 | --- | 98.9 | --- | 100.0 | |
| Texas | .4 | 11.3 | 88.3 | --- | 100.0 | |
| Southwestern region | .5 | 9.4 | 90.1 | --- | 100.0 | |
| Arizona | --- | --- | 100.0 | --- | 100.0 | |
| California | --- | --- | 100.0 | --- | 100.0 | |
| New Mexico | --- | --- | 100.0 | --- | 100.0 | |
| Far Western region | --- | --- | 100.0 | --- | 100.0 | |
| United States | 10.5 | 22.8 | 65.7 | .8 | 99.8 | 1/ |

1/ Differences between 100 percent and percentages shown represent cotton ginned in exchange for the cottonseed.
2/ Less than 0.05 percent

Estimates based on data obtained from ginners

## WEIGHT OF SEED COTTON PER BALE

Bale lots of seed cotton necessary to produce a 500-pound gross weight bale frequently vary widely in weight because of method of harvesting and variety of cotton grown. Most important in this respect is the manner of harvesting, which may cause variations as great as 1,000 pounds in the quantity of seed cotton necessary to produce a standard weight bale of lint. From an economic standpoint, this difference is highly significant to both farmer and ginner, since charges for ginning services most commonly are assessed on a seed cotton weight basis.

Although the bulk of the crop is harvested by hand (picking and snapping), in recent years mechanized processes have been introduced commercially to a limited extent. For hand-picked upland cotton, the seasonal average quantities ginned per 500-pound gross-weight bale varied from 1,375 to 1,314 pounds during the period 1941-42 to 1946-47, and the general trend indicates a slight decrease in the amount of seed cotton per standard weight bale (table 4). Weights of seed cotton required to produce a 500-pound bale were lowest in Southeastern States, such as Alabama, Virginia, North Carolina, and Georgia, and were highest in Missouri and Oklahoma. Variations between States in average weights of hand-picked seed cotton necessary to gin a standard weight bale over a period of years reflect differences in care exercised in harvesting and varieties of cotton grown. Variations in the same State from season to season largely are caused by seasonal differences in harvesting.

The amount of seed cotton required per standard weight bale is increased materially when intermingled with dirt, burs, leaf trash, and other foreign matter. This condition is pronounced when cotton is harvested by snapping and it reaches the maximum when machine-stripping is used.

Average quantities of snapped cotton required per standard weight bale varied from 1,844 to 1,948 pounds from 1941-42 to 1946-47 (table 5). During this period, average weights for snapped cotton per 500-pound bale exceeded those for picked cotton by from 500 to 615 pounds each season.

Chiefly in western Oklahoma and northwestern Texas, some cotton usually is harvested late in each season by machine-stripping. During the seasons 1944-45 to 1946-47, from about 2,200 to 2,600 pounds of seed cotton harvested in this manner were required per standard weight bale. Such weights generally exceeded those required for hand-picked cotton in the same States by from about 900 to 1,200 pounds per bale.

Although widely publicized, the use of mechanical pickers in harvesting cotton has been negligible from the over-all crop standpoint. Data collected to date have been too meager to give an accurate index of differences in weights of seed cotton required per bale by machine-picking as contrasted with hand-picking.

Table 4.- Picked seed cotton required per 500-pound gross-weight bale of upland cotton, by States, seasons 1941-42 to 1946-47

| | 1941-42 | 1942-43 | 1943-44 | 1944-45 | 1945-46 | 1946-47 |
|---|---|---|---|---|---|---|
| | Pounds | Pounds | Pounds | Pounds | Pounds | Pounds |
| Alabama | 1,292 | 1,265 | 1,282 | 1,243 | 1,277 | 1,277 |
| Arizona | 1,384 | 1,479 | 1,444 | 1,360 | 1,386 | 1,335 |
| Arkansas | 1,415 | 1,356 | 1,363 | 1,338 | 1,371 | 1,377 |
| California | 1,369 | 1,365 | 1,308 | 1,351 | 1,364 | 1,375 |
| Florida | 1,404 | 1,372 | 1,351 | 1/ | 1/ | 1/ |
| Georgia | 1,333 | 1,316 | 1,323 | 1,326 | 1,299 | 1,296 |
| Louisiana | 1,388 | 1,338 | 1,316 | 1,304 | 1,367 | 1,355 |
| Mississippi | 1,404 | 1,329 | 1,368 | 1,350 | 1,331 | 1,308 |
| Missouri | 1,414 | 1,393 | 1,451 | 1,371 | 1,504 | 1,452 |
| New Mexico | 1,313 | 1,346 | 1,382 | 1,339 | 1,349 | 1,315 |
| North Carolina | 1,325 | 1,303 | 1,323 | 1,284 | 1,296 | 1,296 |
| Oklahoma | 1,455 | 1,405 | 1,448 | 1,372 | 1,443 | 1,397 |
| South Carolina | 1,352 | 1,302 | 1,353 | 1,295 | 1,295 | 1,305 |
| Tennessee | 1,305 | 1,294 | 1,305 | 1,261 | 1,279 | 1,332 |
| Texas | 1,409 | 1,363 | 1,363 | 1,365 | 1,394 | 1,396 |
| Virginia | 1,349 | 1,346 | 1,326 | 1,296 | 1,361 | 1,265 |
| United States | 1,375 | 1,334 | 1,345 | 1,314 | 1,334 | 1,337 |

1/ Insufficient data

Estimates based on data obtained from ginners.

Table 5. - Weight of snapped seed cotton required per 500-pound gross-weight bale of upland cotton, by specified States, seasons 1941-42 to 1946-47 1/

| State | 1941-42 | 1942-43 | 1943-44 | 1944-45 | 1945-46 | 1946-47 |
|---|---|---|---|---|---|---|
| | Pounds | Pounds | Pounds | Pounds | Pounds | Pounds |
| Arizona | 2,052 | 1,674 | 2/ | 1,808 | 1,863 | 2,080 |
| Arkansas | 1,859 | 1,876 | 1,892 | 1,851 | 1,977 | 2,028 |
| California | 2,165 | 1,973 | 1,953 | 1,896 | 2,037 | 2,075 |
| Mississippi | 2/ | 1,655 | 2/ | 1,905 | 1,734 | 1,695 |
| Missouri | 1,935 | 1,977 | 1,990 | 1,902 | 2,088 | 2,136 |
| New Mexico | 2,055 | 2,166 | 2,140 | 1,968 | 2,167 | 1,985 |
| Oklahoma | 1,922 | 1,911 | 1,942 | 1,910 | 1,985 | 1,971 |
| Tennessee | 1,855 | 1,811 | 1,844 | 1,794 | 1,885 | 2,023 |
| Texas | 1,928 | 1,903 | 1,805 | 1,898 | 1,942 | 1,872 |
| United States | 1,935 | 1,906 | 1,844 | 1,896 | 1,948 | 1,942 |

1/ Does not include States where this method of harvesting is not used or is of minor importance

2/ Insufficient data

Estimates based on data obtained from ginners

Upland cotton represents all but a very minor proportion of the cotton grown in the United States. Two long-fibered types of cotton, however, of distinctly different growth, American Egyptian and sea-island, are produced in limited quantities and require much greater weights of seed cotton per standard weight bale than is required for upland cotton. From 1,572 to 1,725 pounds of hand-picked American Egyptian cotton were required to gin a 500-pound bale during the period 1941-42 to 1946-47, exceeding requirements for upland cotton by about 350 pounds in most seasons (table 6). Limited data available for sea-island cotton indicated necessary quantities of seed cotton per bale exceeded that for upland by from about 370 to 500 pounds.

## CHARGES FOR GINNING

### Upland Cotton

Since various systems of assessing ginning charges are used throughout the Cotton Belt, rates as such are not directly comparable. 2/

2/ Estimated average charges under each of the various methods of assessing charges are indicated by States and seasons (tables 22 to 27), pages 39 to 44.

Table 6. - Average weight of seed cotton required per 500-pound gross weight bale for American Egyptian and sea-island cottons, seasons 1941-42 to 1946-47

| Season | Weight of seed cotton required for | |
|---|---|---|
| | American Egyptian | Sea-island |
| | Pounds | Pounds |
| 1941-42 | 1,718 | 1,747 |
| 1942-43 | 1,665 | 1,863 |
| 1943-44 | 1,693 | 1/ |
| 1944-45 | 1,695 | 1/ |
| 1945-46 | 1,725 | 1/ |
| 1946-47 | 1,572 | 1/ |

1/ No data

Estimates based on data obtained from ginners

In order to make direct comparisons of ginning charges by States and seasons, rates have been converted to a common base which represents the estimated average charge for ginning and wrapping a 500-pound gross-weight bale. 3/

For the Cotton Belt as a whole, seasonal average charges for ginning and wrapping a 500-pound gross-weight bale varied from $5.71 in 1941-42 to $8.09 in 1946-47 (Table 7). From 1941-42 to 1944-45, charges increased moderately each season. In 1945-46, the average charge per bale decreased slightly. Charges, however, in 1946-47 represented an increase of about 26 percent over that for the previous season.

The lowest per bale charges for ginning services have been maintained in South Carolina, North Carolina, and Georgia (figure 1). Charges per standard weight bale in Missouri and Oklahoma during 1946-47 were about double those prevailing in the States with the lowest rates. Other States, with lesser average charges but maintaining a level of charges above the average for the Belt as a whole, were Texas and Arkansas.

The Southeastern States as a group have assessed the lowest average charge per bale for ginning and wrapping (figure 2). These lower rates are attributable to a number of factors, chief of which are: (1) Practically all cotton is harvested by hand-picking; (2) second-hand bagging is used to a considerable extent; (3) labor is normally cheaper than in the other regions of the Belt; and (4) the average gin is less elaborately equipped than is the case where more extensive cleaning machinery is needed because of methods of harvesting by other than hand-picking.

3/ Formulas used in converting rates under the various systems to a common base are listed on page 45.

Table 7. - Charges for ginning services; Estimated averages per 500-pound gross weight bale of upland cotton, by States and regions, seasons 1941-42 to 1946-47

| State and region | 1941-42 | 1942-43 | 1943-44 | 1944-45 | 1945-46 | 1946-47 |
|---|---|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars |
| Alabama | 4.03 | 4.71 | 4.97 | 5.02 | 5.15 | 6.74 |
| Florida | 4.68 | 4.91 | 5.38 | 1/ | 5.68 | 7.18 |
| Georgia | 4.21 | 4.69 | 4.97 | 5.05 | 5.04 | 6.23 |
| North Carolina | 4.15 | 4.66 | 5.03 | 5.09 | 5.00 | 6.28 |
| South Carolina | 3.67 | 4.46 | 4.58 | 4.72 | 4.05 | 6.13 |
| Virginia | 4.82 | 4.97 | 5.38 | 5.01 | 5.08 | 5.35 |
| Southeastern region | 4.06 | 4.64 | 4.90 | 4.97 | 4.82 | 6.37 |
| Arkansas | 6.12 | 6.26 | 6.50 | 6.66 | 7.35 | 8.94 |
| Louisiana | 5.22 | 5.58 | 5.65 | 5.81 | 6.07 | 7.58 |
| Mississippi | 5.66 | 5.70 | 6.13 | 6.16 | 5.90 | 7.52 |
| Missouri | 6.56 | 7.12 | 8.02 | 7.57 | 9.73 | 12.19 |
| Tennessee | 5.21 | 5.52 | 5.77 | 6.07 | 6.17 | 7.75 |
| Mid-South region | 5.82 | 5.94 | 6.23 | 6.37 | 6.56 | 8.51 |
| Oklahoma | 6.55 | 6.87 | 8.39 | 8.73 | 9.13 | 11.13 |
| Texas | 6.89 | 7.20 | 7.24 | 7.95 | 7.83 | 9.34 |
| Southwestern region | 6.82 | 7.14 | 7.38 | 8.10 | 8.01 | 9.58 |
| Arizona | 6.08 | 6.42 | 6.49 | 6.62 | 6.80 | 8.15 |
| California | 5.04 | 5.41 | 5.49 | 5.99 | 6.91 | 8.08 |
| New Mexico | 6.00 | 6.50 | 7.52 | 6.97 | 7.43 | 7.97 |
| Far Western region | 5.46 | 5.85 | 6.03 | 6.32 | 6.98 | 8.08 |
| United States | 5.71 | 5.95 | 6.18 | 6.44 | 6.40 | 8.09 |

1/ No data

Estimates based on data obtained from ginners

The far Western region has usually ranked second in lowest average ginning charges per bale. This was true for the 6-year period 1941-42 to 1946-47, except for the 1945-46 season. During that season the mid-South region ranked second lowest in average ginning charges per bale. Louisiana and Tennessee ranked low in average ginning charges per bale, in the mid-South region, but Mississippi held this distinction during the 1945-46 and 1946-47 seasons.

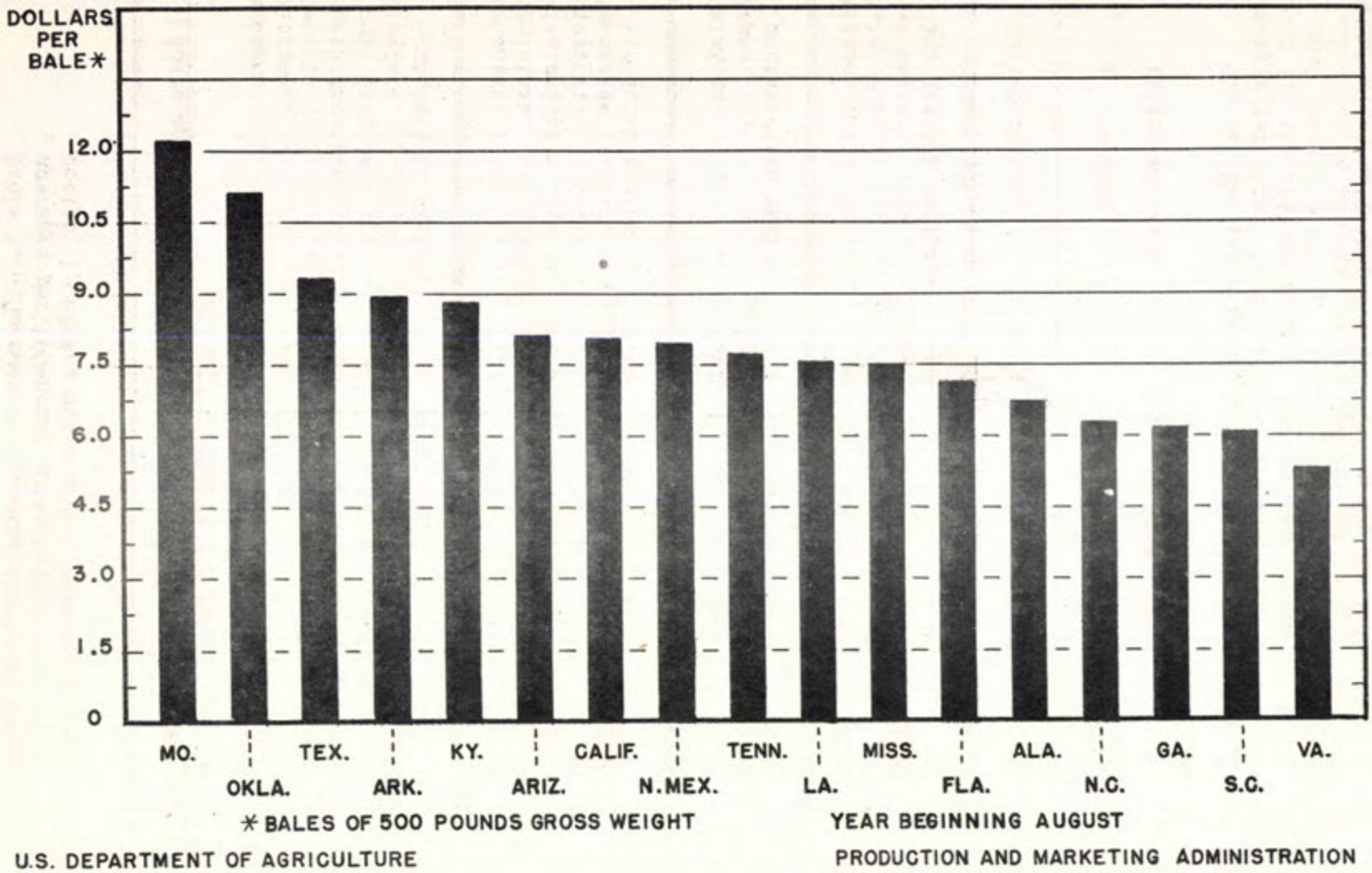
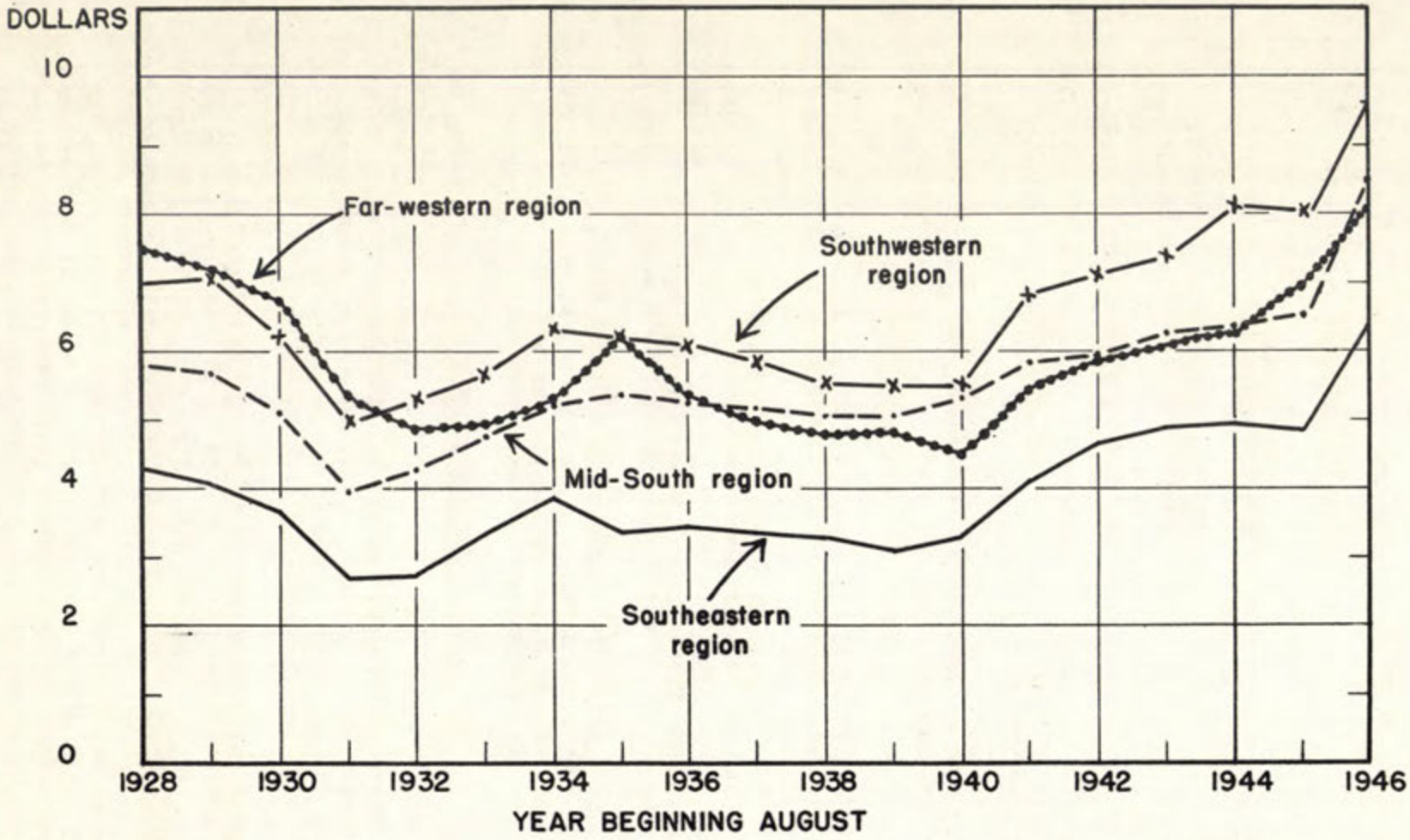



FIGURE 1 - GINNING CHARGES: STATE AVERAGES, 1946-47 SEASON

The level of charges has been consistently lower in the Southeastern States than in other States

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CHARGES FORMERLY WERE HIGHEST IN THE FAR-WESTERN REGION BUT HAVE NOW DECLINED BELOW THOSE OF OTHER REGIONS EXCEPT THE SOUTHEAST WHERE THEY HAVE BEEN CONSISTENTLY LOW OVER THE ENTIRE PERIOD

FIGURE 2 - AVERAGE CHARGES FOR GINNING A 500-POUND GROSS-WEIGHT BALE OF UPLAND COTTON, BY REGIONS, 1928-46

Charges for ginning a 500-pound bale of cotton in the far Western region do not reflect the total average cost to farmers because of the fact that in this region a small additional charge often is made for drying or for sterilization for pink boll worm or for both. In order to provide comparable standard charges for all States, data on separate charges have not been included. In all other regions of the Cotton Belt, the drying fee is included in the ginning charge. The financial significance of this regional difference in establishing charges for certain services connected with ginning is discussed in a later section of this report.

Ginning charges per bale are usually higher in the Southwest than in other regions. A considerable proportion of the cotton in the Southwest is either snapped or harvested by strippers or sleds, and practically all bagging used is new.

## Other growths

American Egyptian cotton is grown principally in the irrigated sections of Arizona and the Rio Grande valley of New Mexico and Texas. Sea-island cotton in recent years has been grown chiefly in Florida but production has been practically discontinued in the past few seasons.

Both of these long-fibered cottons are ginned on roller gins. Since roller gin operation requires much more attention and labor, charges for ginning the long staple cottons are considerably higher than for upland cotton ginned on saw gins. The average charges for ginning a 500-pound bale of American Egyptian cotton during the period 1941-42 to 1946-47 ranged from $12.57 to $14.48 (table 8). Charges for ginning and wrapping a 500-pound bale of sea-island cotton in 1941-42 and 1942-43 was a little less than the comparable charge for American Egyptian.

Table 8. - Average charge for ginning and wrapping American Egyptian and sea-island cottons, seasons 1941-42 to 1946-47

| Season | Charge per 500-pound gross-weight bale for - | |
|---|---|---|
| | American Egyptian | Sea-island |
| | Dollars | Dollars |
| 1941-42 | 12.64 | 11.86 |
| 1942-43 | 12.57 | 12.42 |
| 1943-44 | 12.88 | 1/ |
| 1944-45 | 13.27 | 1/ |
| 1945-46 | 14.87 | 1/ |
| 1946-47 | 14.48 | 1/ |

1/ No data

Estimates based on data obtained from ginners

## FACTORS AFFECTING GINNING CHARGES

### General Business Conditions

As a rule the ginning industry is highly competitive, and, as such, charges are influenced largely by producer demand for the service and the operating costs that ginners have to pay. In Oklahoma, however, rates are established by State authority.

Along with the sharp increase in business activity from 1941-42 to 1946-47, farm prices for cotton advanced considerably (table 9). Ginning charges followed a similar pattern, but advanced proportionately less than cotton prices (figure 3). General business conditions are a big factor in establishing the level of ginning charges, particularly as reflected by wages and salaries, which form the largest single item of ginning expense.

Table 9. - Average farm prices of cotton, average ginning charges, and relative prices and charges, seasons 1928-29 to 1946-47

| Season | Average farm price of cotton per pound 1/ | Average charge per 500-pound bale for ginning services | Relative (percentage of 1928-29) | |
|---|---|---|---|---|
| | | | Farm price of cotton per pound | Charge per 500-pound bale for ginning services |
| | Cents | Dollars | Percent | Percent |
| 1928-29 | 17.99 | 5.96 | 100.0 | 100.0 |
| 1929-30 | 16.79 | 5.74 | 93.3 | 96.6 |
| 1930-31 | 9.46 | 5.05 | 52.6 | 84.7 |
| 1931-32 | 5.66 | 4.04 | 31.5 | 67.8 |
| 1932-33 | 6.52 | 4.34 | 36.2 | 72.8 |
| 1933-34 | 10.17 | 4.76 | 56.5 | 79.9 |
| 1934-35 | 12.36 | 5.05 | 68.7 | 84.7 |
| 1935-36 | 11.09 | 5.03 | 61.6 | 84.4 |
| 1936-37 | 12.33 | 4.93 | 68.5 | 82.7 |
| 1937-38 | 8.41 | 4.89 | 46.7 | 82.0 |
| 1938-39 | 8.60 | 4.72 | 47.8 | 79.2 |
| 1939-40 | 9.09 | 4.67 | 50.5 | 78.4 |
| 1940-41 | 9.89 | 4.76 | 55.0 | 79.9 |
| 1941-42 | 17.03 | 5.71 | 94.7 | 95.8 |
| 1942-43 | 19.04 | 5.95 | 105.8 | 99.8 |
| 1943-44 | 19.88 | 6.18 | 110.5 | 103.7 |
| 1944-45 | 20.73 | 6.44 | 115.2 | 108.1 |
| 1945-46 | 22.52 | 6.40 | 125.2 | 107.4 |
| 1946-47 2/ | 32.60 | 8.09 | 181.2 | 135.7 |

1/ Calculations based on Bureau of Agricultural Economics reports.
2/ Preliminary

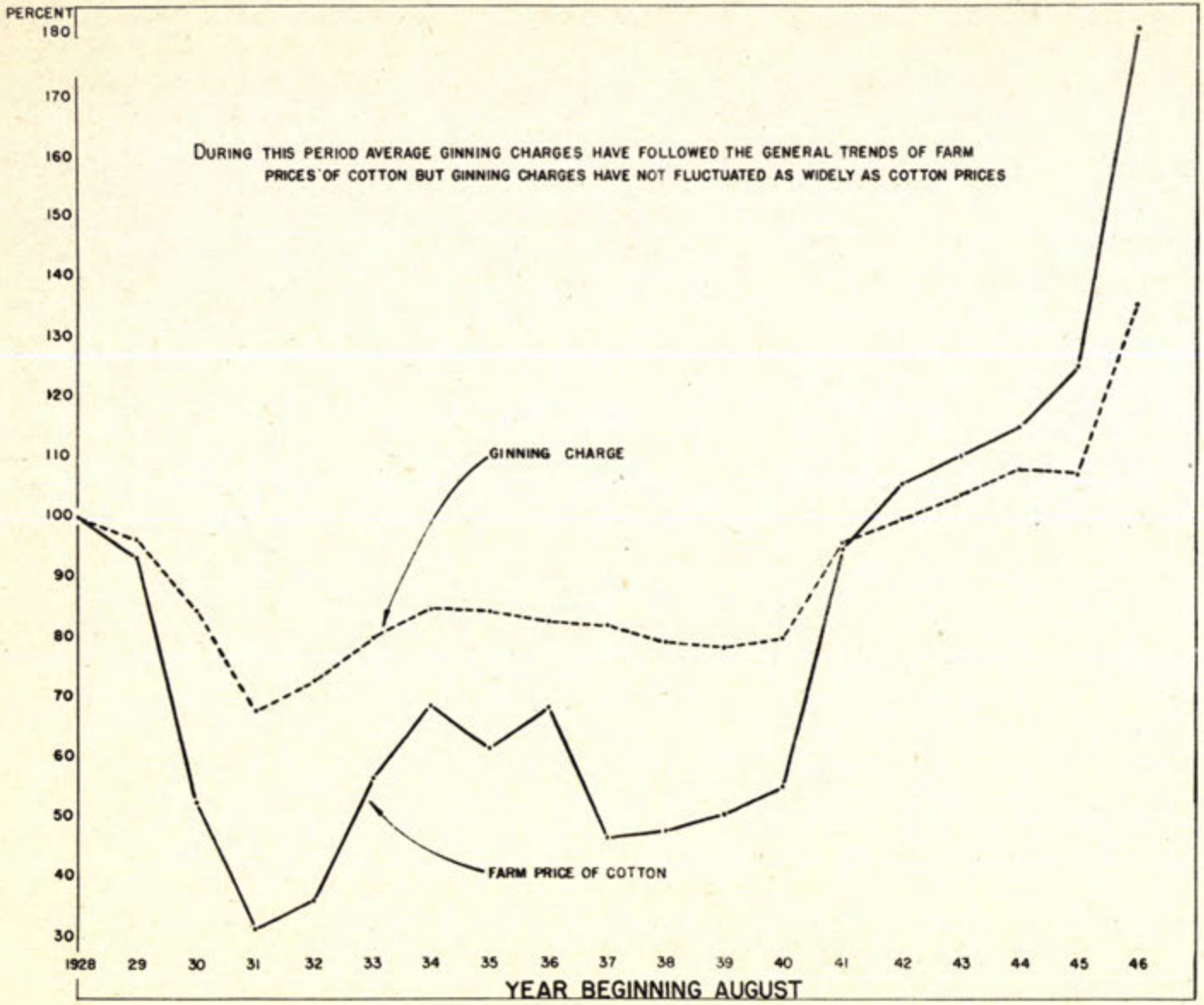


FIGURE 3.- GINNING CHARGES AND FARM PRICES OF COTTON (RELATIVE 1928), 1928 - 1946

## Capacity of Gins and Volume of Ginning

Gins throughout the Cotton Belt during the 1945-46 season numbered 10,802 and had an average of 3.7 stands per gin, as compared with 13,036 gins and 3.6 stands per gin in 1940-41 (table 10). By regions, however, there were significant differences in the size of gins, as the number of stands per gin, for both seasons, ranged from 5.3 in the far West to 3.1 in the Southeast. Increasing ginning capacity from east to west per individual gin plant is clearly indicated, in that during the 1945-46 season, gins in the Southeast had an average of 3.2 stands per gin, as compared with 3.5 in the mid-South, 4.5 in the Southwest, and 5.3 in the far West.

Although the total number of gins decreased considerably from 1940-41 to 1945-46, the extremely short crop in 1945-46 resulted in much lower average volumes per gin in the Southwest and far West than in 1940-41. In both seasons, however, volumes of ginnings per gin in the far West were from three to four times greater than in other regions. The average number of bales per gin in 1945-46 averaged less than 1,000 bales in all States except the far Western States and Mississippi and Tennessee. Normally, gins in Oklahoma, Texas, Missouri, and Arkansas receive an average of 1,000 bales or more per gin, but in 1945-46 production was abnormally low, particularly in Oklahoma and Texas.

Gins in the far West, with an average of about 5 gin stands per plant, handled 538 bales per stand in 1945-46. The low volumes received by the large-size gins of the Southwest resulted in an average of only 144 bales per gin stand in that region. In the mid-South and Southeast, the average volume of ginning per gin stand was 298 and 219 bales, respectively. In 1940-41, volume of ginning per gin was considerably greater in the Southwest than the Southeast, but on a per stand basis the volume was greater in the Southeast.

Usually, farmers endeavor to harvest cotton as it opens, in order to prevent weather damage or deterioration of the fiber, but because of a lack of suitable storage facilities on the farm, the cotton is taken to the gin almost immediately. In regions other than the far West, the normal volume of cotton ginned per season represents only a few weeks of daytime operation at full capacity. This situation is responsible in part for the apparent excess of ginning facilities, especially in the southeastern and southwestern regions.

## Types of Gin Equipment

Modern gins must be equipped with considerable auxiliary machinery if the most satisfactory ginning job is to be achieved under present-day methods of harvesting. There are three principal types of auxiliary gin equipment: (1) Driers for reducing the moisture content of seed cotton that is too green or damp for proper cleaning and ginning; (2) cleaners for removing dirt and small particles of trash from seed cotton; and (3) extractors for removing burs, limbs, and other bulky extraneous material. 4/

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4/ Bennett, C. A. and Gerdes, F. L. COTTON GINNING, U. S. Depart. of Agri., Farmers' Bul. No.1748, 46 pp. Aug. 1935

Table 10.- Cotton production, gin equipment, and average volume of ginning per gin plant and per gin stand, by States and regions, seasons 1945-46 and 1940-41

| State and region | Cotton production 1/ | | Gin equipment 2/ | | | | Volume of ginning | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Gin plants | | Gin stands | | Per gin plant | | Per gin stand | |
| | 1945-46 | 1940-41 | 1945-46 | 1940-41 | 1945-46 | 1940-41 | 1945-46 | 1940-41 | 1945-46 | 1940-41 |
| | Bales | Bales | Number | Number | Number | Number | Bales | Bales | Bales | Bales |
| Alabama | 930,459 | 775,448 | 1,020 | 1,250 | 3,546 | 4,235 | 912 | 620 | 262 | 183 |
| Florida | 6,054 | 16,016 | 19 | 42 | 56 | 111 | 319 | 381 | 108 | 144 |
| Georgia | 670,629 | 1,013,533 | 1,077 | 1,404 | 3,667 | 4,680 | 623 | 722 | 183 | 216 |
| North Carolina | 430,674 | 743,691 | 792 | 1,009 | 2,363 | 2,861 | 544 | 737 | 182 | 260 |
| South Carolina | 664,776 | 968,354 | 883 | 1,207 | 2,631 | 3,310 | 753 | 802 | 253 | 292 |
| Virginia | 14,273 | 21,302 | 69 | 93 | 142 | 176 | 207 | 229 | 101 | 121 |
| Southeast region | 2,716,865 | 3,538,344 | 3,860 | 5,005 | 12,405 | 15,373 | 704 | 707 | 219 | 230 |
| Arkansas | 1,045,370 | 1,510,102 | 1,066 | 1,199 | 3,717 | 4,105 | 981 | 1,259 | 281 | 368 |
| Louisiana | 388,376 | 456,807 | 570 | 657 | 1,994 | 2,245 | 681 | 695 | 195 | 203 |
| Mississippi | 1,557,024 | 1,250,369 | 1,262 | 1,383 | 4,475 | 4,740 | 1,234 | 904 | 348 | 264 |
| Missouri | 176,822 | 384,590 | 184 | 191 | 668 | 674 | 961 | 2,014 | 265 | 571 |
| Tennessee | 467,708 | 507,277 | 400 | 435 | 1,329 | 1,436 | 1,169 | 1,166 | 352 | 353 |
| Mid-South region | 3,635,300 | 4,109,145 | 3,482 | 3,865 | 12,183 | 13,200 | 1,044 | 1,063 | 298 | 311 |
| Oklahoma | 281,887 | 789,317 | 615 | 748 | 2,657 | 3,300 | 458 | 1,055 | 106 | 239 |
| Texas | 1,805,147 | 3,249,090 | 2,645 | 3,206 | 11,855 | 14,379 | 682 | 1,013 | 152 | 226 |
| Southwest region | 2,087,034 | 4,038,407 | 3,260 | 3,954 | 14,512 | 17,679 | 640 | 1,021 | 144 | 228 |
| Arizona | 116,836 | 166,413 | 50 | 56 | 256 | 289 | 2,337 | 2,972 | 456 | 576 |
| California | 353,440 | 543,497 | 109 | 112 | 611 | 626 | 3,243 | 4,853 | 578 | 868 |
| New Mexico | 99,108 | 117,830 | 41 | 44 | 192 | 201 | 2,417 | 2,678 | 516 | 586 |
| Far West region | 569,384 | 827,740 | 200 | 212 | 1,059 | 1,116 | 2,847 | 3,904 | 538 | 742 |
| United States | 9,008,583 | 12,513,636 | 10,802 | 13,036 | 40,159 | 47,368 | 834 | 960 | 224 | 264 |

1/ Equivalent 500-pound gross-weight bales of upland cotton only.
2/ Saw gins only (active and inactive).

Compiled from reports of the U. S. Bureau of the Census

Considerable additional auxiliary equipment was installed at gins in the United States between 1940-41 and 1945-46 (table 11). During this period, the proportion of gins equipped with driers had doubled in all regions except the Southwest, where the use of this equipment had tripled. Installations of air-line and overhead cleaners increased in most regions, particularly for the latter equipment. The proportion of gins with extractor cleaning feeders increased by about 10 to 15 percent in all regions. Master bur extractors increased greatly in all regions except in the Southwest where they already were widely used.

On the whole, gins in the Southeast utilized the least auxiliary equipment and those in the far West were the most elaborately equipped. The proportion of gins in the Southeast equipped with driers was approximately one-half as great as in the mid-South and Southwest and only about one-fifth as great as in the far West. The relative use of air-line cleaners in the far West and Southwest was more than triple that in the two other regions. Installations of overhead cleaners were found in a proportionately greater number of gins by regions from east to west across the Belt. About one-half of the gins in the Southeast had extracting cleaning feeders but three-fourths of the gins in all other regions had installed similar equipment. About one-fourteenth of the gins in the Southeast, one-fifth in the mid-South, one-half in the Southwest, and three-fifths in the far West were equipped with master bur extractors.

Gins east of the Mississippi River generally do not receive much roughly harvested cotton and therefore do not need extensive installations of cleaning and extracting equipment, frequently required in the western half of the Belt. On the other hand, gins in the eastern part often receive green or damp cotton and usually could make efficient use of equipment for drying and conditioning such cotton.

These differences in equipment between regions account for a considerable part of differences in charges. Elaborately equipped gins are more costly to erect, maintain, and operate, because of added investment, necessarily larger crews, and greater power requirements.

In all sections of the Cotton Belt, except Arizona and California, use of auxiliary equipment is considered an integral part of the normal ginning service, and regularly established charges for ginning cover necessary conditioning, cleaning, and extracting functions provided by available equipment. Gins in California and Arizona, however, that operate seed cotton driers usually make an additional charge for conditioning seed cotton by use of such equipment.

During the period 1941-42 to 1946-47, the proportion of ginnings passed through driers in these two States ranged from 29 to about 74 percent in California and from about 9 to 43 percent in Arizona (table 12). A much larger proportion of gins in California are equipped with driers than in any other State, and such equipment is commonly used because of foggy weather prevailing during the latter part of the harvesting season in the major producing area.

Table 11. - Proportion of gins with specified equipment, by States and regions seasons 1945-46 and 1940-41

| State and Region | Gins with specified equipment 1/ | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Seed cotton driers | | Air-line cleaners | | Overhead cleaners | | Hull-extracting-cleaning feeders | | Master bur extractors | |
| | 1945-46 | 1940-41 | 1945-46 | 1940-41 | 1945-46 | 1940-41 | 1945-46 | 1940-41 | 1945-46 | 1940-41 |
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| Alabama | 15.6 | 6.9 | 14.2 | 16.1 | 40.1 | 33.0 | 59.7 | 41.8 | 12.8 | 1.4 |
| Florida | 26.9 | 9.8 | 11.5 | 9.8 | 11.5 | 11.8 | 30.8 | 29.4 | 3.8 | 2.0 |
| Georgia | 16.7 | 6.0 | 14.3 | 12.4 | 33.6 | 26.3 | 51.1 | 39.6 | 7.2 | 1.1 |
| North Carolina | 11.7 | 5.6 | 17.2 | 10.9 | 39.0 | 20.1 | 58.5 | 38.9 | 4.9 | .7 |
| South Carolina | 16.0 | 6.0 | 15.2 | 11.3 | 23.8 | 14.2 | 57.0 | 39.8 | 2.9 | .4 |
| Virginia | 5.8 | - | 11.6 | 8.6 | 27.5 | 15.1 | 42.0 | 21.5 | 2.9 | - |
| Southeastern region | 15.1 | 6.0 | 15.0 | 12.6 | 33.9 | 23.4 | 55.9 | 39.6 | 7.2 | .9 |
| Arkansas | 37.7 | 13.3 | 15.6 | 18.0 | 69.0 | 55.4 | 78.7 | 67.1 | 20.1 | 11.7 |
| Louisiana | 47.7 | 26.8 | 18.4 | 15.1 | 59.6 | 54.8 | 63.0 | 56.5 | 14.6 | 3.2 |
| Mississippi | 30.6 | 14.5 | 12.3 | 10.8 | 55.9 | 40.6 | 72.3 | 59.6 | 19.1 | 5.3 |
| Missouri | 87.0 | 55.5 | 19.0 | 14.7 | 87.5 | 77.5 | 96.7 | 95.3 | 49.5 | 14.7 |
| Tennessee | 32.3 | 7.8 | 24.3 | 12.4 | 57.5 | 44.8 | 84.8 | 68.0 | 22.5 | 12.9 |
| Mid-South region | 38.8 | 17.5 | 16.0 | 14.2 | 62.4 | 49.9 | 75.5 | 64.1 | 20.6 | 8.2 |
| Oklahoma | 30.2 | 3.6 | 47.8 | 39.0 | 85.2 | 85.2 | 80.8 | 59.0 | 59.0 | 59.4 |
| Texas | 30.9 | 10.4 | 49.3 | 48.1 | 80.1 | 77.0 | 75.5 | 59.8 | 51.8 | 49.4 |
| Southwestern region | 30.8 | 9.2 | 49.0 | 46.4 | 81.0 | 78.6 | 76.5 | 59.6 | 53.1 | 51.3 |
| Arizona | 43.6 | 17.7 | 27.3 | 41.9 | 87.3 | 85.5 | 60.0 | 66.1 | 60.0 | 43.5 |
| California | 90.0 | 50.9 | 55.5 | 50.9 | 98.2 | 81.3 | 82.7 | 52.7 | 72.7 | 27.7 |
| New Mexico | 61.9 | 25.0 | 64.3 | 68.2 | 66.7 | 75.0 | 78.6 | 75.0 | 35.7 | 25.0 |
| Far Western region | 72.0 | 36.2 | 49.8 | 51.8 | 88.9 | 81.2 | 75.8 | 61.0 | 61.8 | 31.7 |
| United States 2/ | 28.5 | 10.9 | 26.2 | 24.0 | 58.3 | 48.9 | 68.8 | 53.3 | 26.4 | 18.9 |

1/ Includes both active and inactive saw and roller gins
2/ Excludes gins in minor producing States. Compiled from reports of the U. S. Bureau of the Census

Table 12.- Percentage of ginning passed through cotton driers in gins in California and Arizona, seasons 1941-42 to 1946-47

| State | Percentage of ginnings passed through seed cotton driers | | | | | |
|---|---|---|---|---|---|---|
| | 1941-42 | 1942-43 | 1943-44 | 1944-45 | 1945-46 | 1946-47 |
| | Percent | Percent | Percent | Percent | Percent | Percent |
| Arizona..... | 16.7 | 43.1 | 19.9 | 9.4 | 23.1 | 15.2 |
| California..... | 28.8 | 44.4 | 45.5 | 56.8 | 73.9 | 62.9 |

Separate charges for the drying service in California ranged from a low of 62 cents per bale in 1941-42 to a high of $1.61 per bale in 1946-47 (table 13). In Arizona, drying charges were included in the regular ginning charge in most seasons prior to 1944-45, but the charge for drying averaged $1.00 per bale in 1946-47. In California, because of the appreciable proportion of the crop conditioned in this manner and the level of charges established for the service, the average cost of the entire ginning service is advanced considerably when this item is added to the regular charge for ginning. In 1946-47, additional expenditures for drying averaged $1.01 per bale for the entire California crop.

Table 13.- Average charge per bale for cotton passed through seed cotton driers, Arizona and California, seasons 1941-42 to 1946-47

| State | Average charge per bale for cotton passed through driers | | | | | |
|---|---|---|---|---|---|---|
| | 1941-42 | 1942-43 | 1943-44 | 1944-45 | 1945-46 | 1946-47 |
| | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars |
| Arizona..... | 1/ | 0.70 | 1/ | 0.69 | 0.10 | 1.00 |
| California..... | 0.62 | 1.46 | 1.55 | 1.29 | 1.27 | 1.61 |

1/ Included in regular ginning charge

## Quality of Ginning Service

Charges assessed for ginning alone do not constitute the over-all cost of that service to the farmers. In addition, the extent to which inherent quality of the lint may be impaired by inferior service merits consideration in the final analysis of the ginning charge.

A definite relationship exists between level of ginning rates and quality of ginning service. For the 14 seasons, 1933-34 to 1946-47, the average proportion of rough-ginned cotton was greatest in States where ginning charges were lowest (table 14). By regions and increasing from west to east, percentages of rough-ginned cotton ranged from

2.9 percent in the far West to 10.8 percent in the Southeast, indicating that utilization of modern conditioning and cleaning equipment improved the quality of the ginning service. Highest proportions of roughly prepared cotton were found in Florida, Virginia, South Carolina, and North Carolina, where average ginning charges were relatively low; the reverse was true in Missouri, Arkansas, Oklahoma, Texas, and to a very noticeable degree in those States included in the far Western region.

Since average ginnings per gin are smallest in States where charges normally are lowest, this indicated relationship between the financial aspect of gin operation and the quality of the service is particularly marked when considered according to differences in gross ginning income. In the Southeast, the percentage of rough-ginned cotton was almost four times greater than that of the far West, while the gross income from ginning was only about one-sixth as great per gin. Annual gross income averaged about $3,210 per gin in the Southeast as compared with almost $21,000 per gin the the far West. However, weather conditions prevailing during harvesting and the extent to which farmers cooperate in bringing dry, clean cotton to the gin may have affected this relationship to some extent. Generally, the weather is more favorable during harvesting in the Southwest and far West than in other regions. On the other hand, in the far West and mid-South, considerable cotton of the longer staples is grown, which is more difficult to gin smoothly. In the Southeast, however, where conditioning equipment in particular appears to be a highly desirable part of gin equipment, the proportion of gins so equipped is the lowest. Thus, the quality of lint evidently is affected to some extent by the operating condition of the gin as related to financial ability of the ginner properly to equip and maintain his plant. Indications are that lower ginning charges assessed in the Southeast are offset somewhat by the greater proportion of cotton that is reduced in grade through rough ginning.

## Materials Used for Covering Bales

Ginning charges as presented include charges both for ginning service and for bagging and ties, since ginners supply packaging material for the bales of cotton they gin. This cost, therefore, is an important item to farmers.

From 1941-42 to 1946-47, cotton growers in the United States paid an average of $1.80 per bale for bagging and ties (table 15). The annual cost to farmers for such materials during the period averaged about 19 million dollars and ranged from 15 to 23 million dollars per annum.

For the entire period, average charges for bagging and ties ranged from $1.58 per bale in the Southeastern region to $1.93 in the mid-South region. By States, average charges were lowest in Virginia at $1.41 per bale and were highest in Missouri at $2.20 per bale.

Table 14. - Ginning charges, volume of ginnings per gin, gross income from ginning per gin, and percentage of rough-ginned cotton, by States and regions, 14-year averages, 1933-34 to 1946-47

| State and region | Average charge for ginning services per 500-pound gross weight bale | Average volume of ginnings per gin | Average gross income from ginning per gin | Average percent of rough-ginned cotton |
|---|---|---|---|---|
| | Dollars | Bales | Dollars | Percent |
| Alabama | 4.03 | 909 | 3,663 | 9.8 |
| Florida | 4.34 | 527 | 2,287 | 18.4 |
| Georgia | 4.07 | 785 | 3,195 | 9.3 |
| North Carolina | 4.06 | 721 | 2,927 | 11.4 |
| South Carolina | 3.68 | 835 | 3,073 | 13.1 |
| Virginia | 4.60 | 354 | 1,628 | 14.9 |
| Southeastern region | 3.97 | 807 | 3,204 | 10.8 |
| Arkansas | 6.00 | 1,197 | 7.182 | 4.7 |
| Louisiana | 5.21 | 988 | 5,147 | 11.6 |
| Mississippi | 5.51 | 1,266 | 6,976 | 6.1 |
| Missouri | 7.20 | 1,933 | 13,918 | 3.7 |
| Tennessee | 5.28 | 1,195 | 6,310 | 6.1 |
| Mid-South region | 5.72 | 1,222 | 6,990 | 6.3 |
| Oklahoma | 6.53 | 867 | 5,662 | 6.3 |
| Texas | 6.45 | 1,041 | 6,714 | 4.1 |
| Southwestern region | 6.46 | 1,009 | 6,518 | 4.5 |
| Arizona | 5.97 | 3,566 | 21,289 | 2.8 |
| California | 5.30 | 4,303 | 22,806 | 2.9 |
| New Mexico | 6.35 | 2,556 | 16,231 | 3.2 |
| Far Western region | 5.63 | 3,716 | 20,921 | 2.9 |
| United States | 5.45 | 1,045 | 5.695 | 6.8 |

Table 15. - Total charges for ginning services per 500-pound gross-weight bale, charges for bagging and ties, and proportion of total ginning charges represented by charges for bagging and ties, by States and regions, 6-year averages, seasons 1941-42 to 1946-47

| State and region | Total charge for ginning and wrapping a 500-pound gross-weight bale | Charge per bale for bagging and ties | Proportion of total charge for ginning represented by charge for bagging and ties |
|---|---|---|---|
| | Dollars | Dollars | Percent |
| Alabama | 5.10 | 1.61 | 31.6 |
| Florida | 5.22 | 1.61 | 30.8 |
| Georgia | 4.99 | 1.62 | 32.5 |
| North Carolina | 4.98 | 1.52 | 30.5 |
| South Carolina | 4.68 | 1.54 | 32.9 |
| Virginia | 5.07 | 1.41 | 27.8 |
| Southeastern region | 4.95 | 1.58 | 31.9 |
| Arkansas | 6.93 | 1.89 | 27.3 |
| Louisiana | 5.84 | 1.77 | 30.3 |
| Mississippi | 6.09 | 1.96 | 32.2 |
| Missouri | 8.18 | 2.20 | 26.9 |
| Tennessee | 6.04 | 1.88 | 31.1 |
| Mid-South region | 6.48 | 1.93 | 29.8 |
| Oklahoma | 7.97 | 1.90 | 23.8 |
| Texas | 7.61 | 1.84 | 24.2 |
| Southwestern region | 7.67 | 1.85 | 24.1 |
| Arizona | 6.74 | 1.75 | 26.0 |
| California | 6.21 | 1.77 | 28.5 |
| New Mexico | 7.11 | 1.89 | 26.6 |
| Far Western region | 6.48 | 1.79 | 27.6 |
| United States | 6.39 | 1.80 | 28.2 |

Estimates based on data obtained from ginners

The charge for bagging and ties represented about 32 percent of the total charge for ginning in the Southeast, as compared with approximately 24 percent in the Southwest. For the Cotton Belt as a whole, the charge for bagging and ties was about 28 percent of the total ginning charge during the 6-year period.

Normally, charges for bagging and ties are considerably less per bale in the Southeast than in other regions. This is accounted for in part by the fact that reworked or second-hand bagging is used to a greater extent there.

In regions other than the Southeast, there was an average range of only 14 cents in charges for bagging and ties, the principal causes of difference being: (1) Variations in transportation charges; (2) differences in the method of determining rates; and (3) differences in kind and condition of materials used for wrapping. According to custom, procedures used by ginners as a basis for setting charges for bagging and ties differ widely. In some cases high rates are established for bagging and and ties and ginning charges are held to the minimum. In other instances bagging and ties are priced at almost cost or less and proportionately higher rates are charged for ginning.

Open-weave jute has been by far the most universally used bagging in the United States (table 16). About 70 percent of the 1946-47 cotton crop was wrapped in this type of bagging. Little change has occurred in the kind of wrapping used since 1941-42, when about 64 percent of the crop was wrapped with open-weave jute bagging.

Sugar-bag cloth bagging has been practically the only other kind of bagging used, about 29 percent of the crop in 1946-47 and approximately 34 percent in 1941-42 having been covered with this type of bagging. Cotton bagging has been used in most of the States, but the proportion has been negligible, representing only about 1 percent of the crop in 1946-47 and approximately 3 percent in 1941-42.

## Methods of Harvesting

Hand-picking is the principal method of harvesting cotton in the United States. This laborious and expensive method of harvesting in some sections in recent years has been supplemented to a considerable extent by hand-snapping and to a slight extent by mechanical harvesting. A number of factors have contributed to increased departure from conventional hand-picking of cotton: (1) Scarcity of labor; (2) increased costs of hand-picking; (3) saving in time through use of other methods; and (4) the tendency of cotton growers to mechanize farming operations.

During 1945-46 and 1946-47, slightly more than 80 percent of the American cotton crop was harvested by hand-picking (table 17). However, the proportion of cotton harvested by hand-picking varied considerably from region to region. More than 99 percent of cotton grown in the Southeast was harvested by hand-picking during the 1946-47 season.

Table 19.- Proportions of cotton hauled to gins by farmers, ginners, and commercial truckers, by States and regions, seasons 1946-47 and 1941-42

| State and region | 1946-47 | | | | | | 1941-42 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cotton hauled to gin by — | | | | | | Cotton hauled to gin by — | | | | | |
| | Farmers | | | Ginners' trucks | Commercial truckers | Total | Farmers | | | Ginners' trucks | Commercial truckers | Total |
| | Wagons | Motor Vehicles | Total | | | | Wagons | Motor Vehicles | Total | | | |
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| Alabama | 39.0 | 45.1 | 84.1 | 7.7 | 8.2 | 100.0 | 48.7 | 35.8 | 84.5 | 8.1 | 7.4 | 100.0 |
| Florida | 39.9 | 60.1 | 100.0 | — | — | 100.0 | 36.6 | 57.1 | 93.7 | — | 6.3 | 100.0 |
| Georgia | 27.3 | 46.6 | 73.9 | 21.9 | 4.2 | 100.0 | 39.5 | 32.0 | 71.5 | 15.2 | 13.3 | 100.0 |
| North Carolina | 28.1 | 45.5 | 73.6 | 26.3 | 0.1 | 100.0 | 26.6 | 44.3 | 70.9 | 28.7 | 0.4 | 100.0 |
| South Carolina | 31.0 | 39.4 | 70.4 | 24.7 | 4.9 | 100.0 | 25.8 | 28.7 | 54.5 | 39.6 | 5.9 | 100.0 |
| Virginia | 11.5 | 39.2 | 50.7 | 49.3 | — | 100.0 | 54.1 | 44.2 | 98.3 | — | 1.7 | 100.0 |
| Southeastern region | 32.1 | 44.0 | 76.1 | 19.0 | 4.9 | 100.0 | 36.8 | 35.6 | 72.4 | 20.0 | 7.6 | 100.0 |
| Arkansas | 34.6 | 64.4 | 99.0 | 0.3 | 0.7 | 100.0 | 37.5 | 50.7 | 88.2 | 2.3 | 9.5 | 100.0 |
| Louisiana | 48.7 | 47.0 | 95.7 | 0.7 | 3.6 | 100.0 | 44.2 | 46.0 | 90.2 | 3.8 | 6.0 | 100.0 |
| Mississippi | 33.4 | 61.5 | 94.9 | 1.6 | 3.5 | 100.0 | 39.3 | 52.4 | 91.7 | 1.5 | 6.8 | 100.0 |
| Missouri | 13.6 | 86.4 | 100.0 | — | — | 100.0 | 17.2 | 76.7 | 93.9 | — | 6.1 | 100.0 |
| Tennessee | 54.1 | 44.0 | 98.1 | 0.6 | 1.3 | 100.0 | 58.0 | 34.6 | 92.6 | 0.6 | 6.8 | 100.0 |
| Mid-South region | 36.2 | 61.3 | 97.5 | 0.7 | 1.8 | 100.0 | 39.2 | 51.6 | 90.8 | 1.6 | 7.6 | 100.0 |
| Oklahoma | 26.4 | 70.1 | 96.5 | — | 3.5 | 100.0 | 16.9 | 75.7 | 92.6 | — | 7.4 | 100.0 |
| Texas | 3.4 | 68.7 | 72.1 | 0.7 | 27.2 | 100.0 | 10.4 | 69.9 | 80.3 | 0.2 | 19.5 | 100.0 |
| Southwestern region | 6.5 | 68.9 | 75.4 | 0.6 | 24.0 | 100.0 | 11.8 | 71.2 | 83.0 | 0.1 | 16.9 | 100.0 |
| Arizona | — | 100.0 | 100.0 | — | — | 100.0 | 0.3 | 99.7 | 100.0 | — | 1/ | 100.0 |
| California | — | 100.0 | 100.0 | — | — | 100.0 | 0.3 | 93.9 | 94.2 | — | 5.8 | 100.0 |
| New Mexico | 0.8 | 99.2 | 100.0 | — | — | 100.0 | 8.0 | 91.6 | 99.6 | — | 0.4 | 100.0 |
| Far Western region | 0.1 | 99.9 | 100.0 | — | — | 100.0 | 1.5 | 94.8 | 96.3 | — | 3.7 | 100.0 |
| United States | 25.3 | 61.2 | 86.5 | 6.0 | 7.5 | 100.0 | 27.8 | 56.6 | 84.4 | 5.3 | 10.3 | 100.0 |

1/ Less than 0.05 percent

Estimates based on data obtained from ginners

Before World War II ginners hauled as much as one-fourth of the crop in some seasons because of competitive practices. During the war years, however, with the gasoline restrictions and the shortage of motor equipment, this practice was almost entirely discontinued, except in the Southeastern region where about one-fifth of ginnings was hauled by ginners in both 1941-42 and 1946-47. Hauling of cotton to gins by commercial truckers was a relatively minor method of transportation in most parts of the Cotton Belt, with the exception of Texas where about one-fourth of the crop was hauled in this manner in 1945-46.

Farmers, in providing transportation from farm to gin for the major part of the cotton crop, used motor vehicles to a much greater extent than teams and wagons. In the far West, farmers hauled almost exclusively by motor vehicle. The proportion of cotton hauled by farmers in the Southwest by motor vehicle was about 10 times greater than that by team and wagon. In the mid-South and Southeast, teams and wagons were used to a much larger extent than in other regions, but farmer-owned motor vehicles were the major means of transportation.

When cotton was hauled from the farm to the gin by ginners, this service seldom was included as part of the regular ginning charge, an added charge usually having been made. In the Southeast, the only region where an appreciable volume was transported by ginners, a separate charge was made for 97 percent of such hauling in 1946-47 and for 92 percent in 1941-42. Such charges increased considerably during this interval, being $1.51 per bale in 1946-47 as contrasted with 63 cents per bale in 1941-42.

Transportation of cotton to the gin by commercial truckers was confined almost entirely to the Southwest. The average charge in this region for hauling commercially increased from 94 cents per bale in 1941-42 to $4.72 per bale in 1946-47. In the Southeast, where from about 5 to 7 percent of the crop was transported by commercial truckers in earlier years, ginners not uncommonly refunded part of the charge paid by farmers. By 1946-47, however, this practice had been discontinued almost entirely. In the Southwest, farmers, almost without exception, have borne the entire cost of such transportation.

## Related Business Activities of Cotton Ginners

Ginners buy practically all cottonseed that growers do not retain for planting purposes or other use on the farm, and, in many areas, customarily buy most of the bales they gin. Also, ginners frequently engage in other businesses that are operated in conjunction with the gin plant or are directly related to gin operation. In such instances, charges established for ginning services often are influenced by policies with respect to marketing or other related activities of ginners. Frequently, prices paid growers for cotton and cottonseed by ginners, as well as costs paid by growers for supplies and other services obtained from ginners, differ appreciably from those prevailing at other agencies and make precise appraisal of actual costs of ginning services a difficult matter.

Table 27. - Estimated average charges for ginning upland cotton under specified systems for assessing charges by States, season 1946-47

| State | System of assessing charges: Ginning charges including bagging and ties: Per bale: Picked cotton 1/ | Per bale: Snaps and bollies | Per cwt. seed cotton: Picked cotton 1/ | Per cwt. seed cotton: Snaps and bollies | Per cwt. lint: Picked cotton 1/ | Per cwt. lint: Snaps and bollies | Toll per cwt. picked seed cotton | Ginning charges not including bagging and ties: Per bale: Picked cotton 1/ | Per bale: Snaps and bollies | Per cwt. seed cotton: Picked cotton 1/ | Per cwt. seed cotton: Snaps and bollies | Per cwt. lint: Picked cotton 1/ | Per cwt. lint: Snaps and bollies | Toll per cwt. picked seed cotton | Separate charge per pattern for bagging and ties |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Pct. | Dol. | Dol. | Dol. | Dol. | Dol. | Dol. | Pct. | Dol. |
| Alabama | 6.83 | 9.01 | - | - | 1.19 | - | 5 | 4.75 | - | 0.38 | 0.44 | 0.94 | 0.99 | - | 1.84 |
| Arizona | - | - | - | - | - | - | - | - | - | .41 | .45 | - | - | - | 1.94 |
| Arkansas | 6.72 | 7.57 | 0.40 | - | 1.43 | - | 5 | - | - | .45 | .52 | 1.00 | 1.25 | - | 2.35 |
| California | - | - | - | - | - | - | - | - | - | .41 | .45 | - | - | - | 2.01 |
| Florida | - | - | - | - | - | - | - | 5.00 | - | - | - | 1.00 | - | - | 2.18 |
| Georgia | 5.98 | - | - | - | 1.40 | - | 4 | 3.39 | - | .32 | - | .87 | - | 4 | 1.87 |
| Illinois | - | - | - | - | - | - | - | - | - | .50 | .75 | - | - | - | 3.00 |
| Kentucky | - | - | - | - | - | - | - | - | - | .41 | .60 | - | - | - | 2.50 |
| Louisiana | - | - | - | - | - | - | - | - | - | .39 | - | 1.09 | - | - | 2.17 |
| Mississippi | 6.28 | 7.00 | .45 | - | 1.34 | 1.60 | 5 | 5.00 | - | .42 | - | 1.02 | - | - | 2.32 |
| Missouri | - | - | - | - | - | - | - | - | - | .50 | .67 | - | - | - | 2.99 |
| New Mexico | - | - | - | - | - | - | - | - | - | .42 | .49 | - | - | - | 2.24 |
| North Carolina | 6.04 | 8.00 | .49 | - | 1.20 | - | 5 | 5.00 | - | .35 | - | .92 | - | - | 1.87 |
| Oklahoma | - | - | - | - | - | - | - | - | - | .45 | .50 | - | - | - | 2.00 |
| South Carolina | 5.31 | - | - | - | 1.20 | - | - | - | - | .35 | .35 | .90 | - | - | 1.72 |
| Tennessee | 7.24 | 8.74 | - | 0.50 | 1.40 | - | 5 | - | - | .40 | .53 | - | - | - | 2.33 |
| Texas | - | - | .74 | .75 | - | - | - | 5.01 | - | .43 | .46 | 1.07 | 1.25 | - | 2.12 |
| Virginia | 5.50 | - | - | - | - | - | - | - | - | .25 | - | - | - | - | 1.50 |
| All others | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| United States | 6.70 | 8.68 | .59 | .66 | 1.29 | 1.60 | 5 | 4.60 | - | .43 | .49 | .93 | 1.22 | 4 | 2.14 |

1/ May include snaps and bollies where a differential rate is not provided for these types of seed cotton

Estimates based on data collected from ginners

## RATE CONVERSION FORMULAS

Forumulas for conversion of charges for ginning and wrapping cotton, assessed by various systems, to a common base; that is, rate per 500-pound gross-weight bale

| System of assessing charge | Formula |
|---|---|
| Per bale, including bagging and ties | $R = \frac{500\ r}{w}$ |
| Per bale, not including bagging and ties | $R = \frac{500\ r}{w} + b$ |
| Per hundredweight seed cotton, including bagging and ties | $R = r_1 N$ |
| Per hundredweight seed cotton, not including bagging and ties | $R = r_1 N + b$ |
| Per hundredweight lint cotton, including bagging and ties | $R = 5r_2$ |
| Per hundredweight lint cotton, not including bagging and ties | $R = 5r_2 + b$ |

R = rate for ginning and wrapping per 500-pound gross-weight bale
r = rate per running bale
$r_1$ = rate per hundredweight seed cotton
$r_2$ = rate per hundredweight lint cotton
w = average weight of bales
b = separate charge for bagging and ties
N = number of hundredweight of seed cotton required for a 500-pound gross-weight bale