# Costs and Returns for Cotton, Rice, and Soybeans in the Delta Area of Mississippi, 1994

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Information about economic costs and returns of agricultural commodities produced in Mississippi is important to producers, lenders, agricultural economists, researchers, Extension personnel, policy makers, and others involved in agriculture. This bulletin presents revenue, cost of production, and net revenue estimates for cotton, rice, and soybean crops that were produced in the Delta area of Mississippi in 1994.

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## Methods and Procedures

The Mississippi Agricultural Statistics Service (MASS) developed a stratified random sample of farms that

produced either cotton, rice, or soybeans within the Delta area of Mississippi in 1994. After contacting the owner or manager of the farm operation in the fall of 1994, an enumerator employed by MASS randomly selected a field on the chosen farm and collected information about cultural practices used to produce the crop on that field. Information included types of preplant tillage operations, planting practices, fertilizer and pesticide applications, and harvesting operations. After the crop was harvested, the enumerator contacted the producer again to obtain the crop yield.

Upon completion of the survey, MASS developed two numbers called "expansion factors" for each sampled field so that the sample information could be expanded to represent the population of farms within the region. These expansion factors were used to compute weighted average cost and returns estimates, rather than just unweighted sample averages.

The first expansion factor was used to expand information pertaining to the sampled field to the farm level. It was computed as the number of acres of the crop on the farm divided by the number of acres of the crop in the sampled field.The second expansion factor was used to expand this farm-level information about the crop to the whole region. Each crop in each strata had an expansion factor of this type. It was computed as the total number of farm operations in each strata divided by the sample size in that strata.

## *Estimating Costs and Returns*

The information about production practices from each sampled field was entered into data files by using the Mississippi State Budget Generator (MSBG) program. This computer program uses information about farm machinery, operating inputs, and prices to convert production practice information into budgetary information (costs and returns). Essentially, the program estimates the variable and fixed costs per acre of each field operation. These field operation costs are then organized into various useful budget output formats.

**Variable Cost Estimation.** Variable cost categories for powered machinery, towed implements, and irrigation systems are defined as diesel fuel, repairs and maintenance, and labor. Powered machines (tractors and combines, for instance) consume diesel fuel at a specified rate per hour of operation. This consumption rate is multiplied by the machine's performance rate (the time it takes to complete a field operation on one acre) to obtain the fuel consumption per acre. This quantity is multiplied by the diesel fuel price (estimated to be $0.67 per gallon) to obtain the fuel cost per acre.

An average hourly cost for repairs and maintenance (R&M) is estimated by dividing the machine's estimated total lifetime R&M expense (specified as a percent of the machine's current list price) by the machine's estimated total operational life (in hours). This amount is then multiplied by the machine's performance rate to obtain the R&M cost per acre.

Depending on the type of field operation, labor required may be the machine operator alone or may include non-operator labor. Labor use for each type of labor associated with the field operation (hours per acre) is multiplied by the labor cost per hour (the going wage rate plus perks and benefits, estimated to be $5.63 per hour) to obtain the labor cost per acre. A category for overhead labor (or non-field work labor) was established to account for labor expenses that are not directly related to field work. Cox (1982) conducted a labor study and concluded that overhead labor could be estimated as a percent of operator labor for specific crops. The rates used were 80, 75, and 90 percent for cotton, rice, and soybeans, respectively.

For irrigated fields, similar computations are made to estimate variable cost for an acre-inch of irrigation water. Cost per acre-inch is multiplied by the number of inches per acre to obtain the cost per acre of irrigation water.

Another variable cost category includes purchased operating inputs, such as fertilizer and pesticides. The quantity per acre of each input is multiplied by its price to obtain its cost per acre. Other variable cost items are ginning cotton, drying rice, hauling the crop to a storage or handling facility, and custom hired operations. Again, the quantity per acre is multiplied by the charge or fee per unit to obtain the cost per acre.

Finally, an interest charge is applied to all variable costs to account for the opportunity cost of operating capital. A short-term monthly interest rate on borrowed funds (estimated to be 0.767 percent per month) is multiplied by the cost per acre for each month between the time that the field operation is performed and the harvest month.

**Fixed Cost Estimation.** Fixed costs within the MSBG program are non cash costs associated with machinery ownership that are determined on an annual basis. The fixed cost categories are depreciation and interest on investment capital. Depreciation per hour is calculated by dividing the machine's current list price less its salvage value by its total hours of operational life. In the present study, a machine's salvage value is specified to be zero, reflecting the assumption that a machine will be placed in use for its whole operational life, at which time it will have no remaining market value. Hourly depreciation is then multiplied by the machine's performance rate to obtain depreciation per acre.

Interest on investment capital is first computed for the year by multiplying the average investment (one-half of the list price plus the salvage value, which again is assumed to be zero) by an annual interest rate applicable for intermediate-term debt (estimated to be 9.2 percent per year). This amount is divided by the machine's estimated hours of annual use to obtain the interest cost per hour. This hourly interest cost is then multiplied by the machine's performance rate to obtain the interest cost per acre.

Another fixed-cost category involves land, which may be a cash cost for rented land or a non cash opportunity cost in the case of owned land. Either way, the cash rental rate is a good approximation of the annual cost of land. In the event that the producer rented land to produce the crop in question, the cash rental rate ($/acre) was elicited. For producers who did not cash-rent land, the cash rental rate had to be estimated. To do this, a regression equation was estimated, using information from the producers who rented land. The dependent variable was the average cash rental rate ($/acre) on cropland rented by the farm, and the independent variables were the crop yield and the soil capability class of the sampled field. Using the estimated coefficients from the model, the "fitted" rental rate was calculated and used as an estimate of land rent for those farms that did not rent land.

Other fixed cost categories that may need to be allocated to crop enterprises are general farm overhead and a management charge. There was no reliable method for estimating these types of costs with the available data; therefore, these costs were not included in the analysis.

**Revenue Estimation.** Revenue per acre was estimated by multiplying the crop yield by the statewide average market price received (MASS). Market prices used were as follows: $0.717 per pound of cotton lint; $0.0465 per pound of cotton seed; $2.88 per bushel of rice; and $5.60 per bushel of soybeans. Cotton seed yield was assumed to be 1.55 pounds of seed per pound of lint. The sampling procedure did not request information about government program participation or deficiency payments received. Thus, the net revenue estimates do not account for any government payments that may have been received. Also, the cost estimates do not account for any land that was set aside as part of the requirements for participating in government programs. Net revenue was then computed as the difference between total revenue and total specified cost.

## *Computing Average Values*

The data for machinery prices, performance rates, and operational hours and for operating input and crop prices were the same for all producers; only the individual production practices, crop yields, and land rents were field specific. After the budgetary information was estimated within the MSBG framework, and the rental rate was estimated where necessary, the weighted average (mean) of each cost category was computed as follows. The number of acres in the sampled field was multiplied by the product of the two expansion factors to obtain the total number of acres represented by the sampled field. This value was then multiplied by the cost per acre for the cost category in question to obtain the total cost of that category for the expanded acreage. The expanded acreage was summed over all sampled farms, and the expanded total cost of the category was summed over all sampled farms. The sum of the expanded cost was divided by the sum of the expanded acres to obtain the

weighted average cost per acre for that category.

The weighted average yield was also found by following this procedure, with yield (on a per-acre basis) replacing cost per acre. Average revenue and average net revenue were computed in the same manner.

### *Estimating Cost Distributions*

Often it is desirable to have an estimate of how much the cost of production on a per-unit-of-production basis varies across farms. Total specified cost per acre was divided by yield to obtain the total specified cost per unit of production for each sampled field. However, cotton farms required an adjustment prior to this computation, since two products are produced by the cotton enterprise -- lint as the primary product and seed as the by-product. To adjust for the existence of a by-product, the per-acre revenue derived from the sale of cotton seed was treated as a negative cost, and thus was deducted from per-acre total specified cost. This value was then divided by cotton yield to obtain total specified cost per pound of lint.

The cost distribution information was then derived in the following way. First, using total specified cost per unit as the key variable, the data were sorted in ascending order. The expanded production quantity for each field was divided by the total expanded production to obtain the percent of production represented by that field. These percentages were accumulated from the lowest cost field to the highest cost field. Per-unit cost was estimated at 10 percent intervals.

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## Results

### *Cotton*

Results for cotton are presented in Tables 1-4. There were enough observations for cotton to divide the region into two parts: the North Delta and the South Delta. Crop Reporting Districts (CRD's) developed by MASS were the basis for defining these two areas. The North Delta area was defined as counties in CRD 1 (Bolivar, Coahoma, Quitman, Tallahatchie, and Tunica). The South Delta area was defined as counties in CRD 4 (Humphreys, Issaquena, Leflore, Sharkey, Sunflower, Washington, and Yazoo).

In Table 1, the results for the North Delta show that the average market revenue was about $719 per acre, total specified cost of production was about $516 per acre, and net revenue was about $203 per acre. The custom category was the largest variable cost item. This category includes ginning (estimated to cost $0.08 per pound of lint produced), aerial chemical applications, and insect scouting. Insecticides were the next largest category, with a mean of about $71 per acre. This category is just for the chemicals used and does not include application costs. Repairs and maintenance, herbicides, and fertilizer were all approximately $33 per acre. The total labor expense was estimated to be about $30 per acre. Total variable cost was $370, with a fixed cost of $74 and land rent of $73 per acre. According to the minimum and maximum per-acre values, there is a substantial amount of variation in revenues and production costs across farms.

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**Table 1. Estimated average market revenues, costs of production, and net revenue for cotton, North Delta Area of Mississippi, 1994.**

| Item | Mean | Minimum | Maximum |
|---|---|---|---|
| | ---------- $/acre ---------- | | |
| **Revenue Items:** | | | |
| Lint Revenue | 653.24 | 84.61 | 1,018.86 |
| Seed Revenue | 65.67 | 8.50 | 102.42 |

| Total Market RevenueVariable cost Items: | | | |
|---|---|---|---|
| Custom | 94.49 | 12.80 | 184.20 |
| Insecticides | 70.74 | 8.71 | 147.30 |
| Repairs & Maintenance | 33.97 | 9.72 | 52.88 |
| Herbicides | 32.74 | 3.16 | 109.16 |
| Fertilizer | 32.73 | 6.00 | 61.60 |
| Haul | 18.22 | 2.36 | 28.42 |
| Operator Labor | 16.65 | 9.51 | 35.64 |
| Defoliant | 16.28 | 0.00 | 48.71 |
| Overhead Labor | 13.36 | 7.61 | 28.51 |
| Interest on Op. Capital | 10.38 | 4.21 | 16.34 |
| Seed | 9.59 | 5.63 | 21.00 |
| Diesel Fuel | 9.55 | 5.24 | 15.65 |
| Growth Regulators | 8.76 | 0.00 | 19.20 |
| Fungicides | 2.41 | 0.00 | 15.99 |
| Total Variable Cost | 369.92 | 149.02 | 506.91 |
| | | | |
| Machinery Fixed Cost | 73.68 | 22.99 | 106.89 |
| Variable + Fixed Cost | 443.59 | 172.01 | 563.36 |
| | | | |
| Land Rent | 72.72 | 26.00 | 135.00 |
| Total Specified Cost | 516.32 | 210.01 | 652.74 |
| | | | |
| Net Revenue | 202.59 | -347.38 | 558.84 |

After expanding field acres to farm acres and then to regional acres, the 73 sampled fields in the North Delta area represented about 241,300 acres of cotton in 1994. This compares with 308,000 acres reported as being harvested by MASS in this region. Other information about the sampled farms in the North Delta area is presented in Table 2. Based on the unexpanded data obtained in the survey, the average size farm operation in the North Delta was slightly more than 1,700 acres, with about 1,300 acres rented. On average, 665 acres of cotton were produced on the sampled farms. Mean cotton yield, after applying the expansion factors, was 911 pounds per acre, while MASS reported an average yield of 849 pounds per acre in 1994.

**Table 2. Summary statistics from survey of 73 cotton producers, North Delta Area of Mississippi**

| Item | Mean |
|---|---|
| Cropland Acres Operated | 1,733 |
| Cropland Acres Owned | 406 |
| Cropland Acres Rented | 1,327 |
| Cotton Acres Operated | 665 |
| Cotton Acres Owned | 204 |
| Cotton Acres Rented | 461 |
| Cotton Field Size (acres) | 72 |

| | |
|---|---|
| Cotton Yield (lb/acre) | 911 |

In Table 3 the results for the South Delta show that the average market revenue was about $712 per acre, total specified cost of production was about $510 per acre, and net revenue was about $202 per acre. As with the North Delta, the custom category was the largest variable cost item at $95 per acre. Insecticide costs average about $84 per acre, which was about $14 per acre higher than in the North Delta. The total labor expense was estimated to be about $26 per acre. Total variable cost was $375, with a fixed cost of $66 and land rent of $70 per acre. Again, there is a substantial amount of variation in economic outcomes from one farm to another.

After expanding cotton acreage, the 146 sampled farm operations represented about 489,000 acres of cotton in the South Delta area in 1994. This compares with 516,300 acres reported as being harvested by MASS. Other information about the sampled farms in this region is presented in Table 4. Based on unexpanded data, average farm size was slightly lower in the South Delta than in the North Delta. Again, a large portion of cropland was rented. Based on expanded data, mean cotton yield was 902 pounds per acre, while MASS reported an average yield of 845 pounds per acre.

**Table 3. Estimated average market revenues, costs of production, and net revenue for cotton, South Delta Area of Mississippi, 1994.**

| Item | Mean | Minimum | Maximum |
|---|---|---|---|
| | ---------- $/acre ---------- | | |
| **Revenue Items:** | | | |
| Lint Revenue | 646.86 | 186.42 | 1,254.75 |
| Seed Revenue | 65.02 | 18.74 | 126.13 |
| **Total Market RevenueVariable cost Items:** | | | |
| Custom | 95.19 | 14.40 | 184.30 |
| Insecticides | 83.57 | 4.63 | 200.80 |
| Repairs & Maintenance | 36.14 | 3.94 | 113.80 |
| Herbicides | 30.87 | 7.48 | 47.47 |
| Fertilizer | 30.34 | 6.00 | 74.73 |
| Haul | 18.04 | 5.20 | 35.00 |
| Defoliant | 16.98 | 0.00 | 79.04 |
| Operator Labor | 14.58 | 5.35 | 29.35 |
| Overhead Labor | 11.66 | 4.28 | 23.48 |
| Interest on Op. Capital | 10.94 | 5.59 | 20.93 |
| Seed | 9.12 | 5.60 | 18.48 |
| Diesel Fuel | 8.27 | 3.44 | 13.68 |
| Growth Regulators | 4.92 | 0.00 | 27.65 |
| Fungicides | 4.05 | 0.00 | 17.94 |
| Total Variable Cost | 374.69 | 195.70 | 581.90 |
| | | | |
| Machinery Fixed Cost | 65.98 | 18.12 | 100.13 |
| Variable + Fixed Cost | 440.67 | 267.49 | 646.23 |
| | | | |
| Land Rent | 69.57 | 30.00 | 150.00 |

| | | | |
|---|---|---|---|
| Total Specified Cost | 510.24 | 297.49 | 750.79 |
| | | | |
| Net Revenue | 201.64 | -156.98 | 785.35 |

**Table 4. Summary statistics from survey of 146 cotton producers, South Delta Area of Mississippi**

| Item | Mean |
|---|---|
| Cropland Acres Operated | 1,677 |
| Cropland Acres Owned | 379 |
| Cropland Acres Rented | 1,298 |
| Cotton Acres Operated | 754 |
| Cotton Acres Owned | 220 |
| Cotton Acres Rented | 534 |
| Cotton Field Size (acres) | 67 |
| Cotton Yield (lb/acre) | 902 |

## *Rice*

In Table 5, the results for rice production show that the average market revenue was about $398 per acre, total specified cost of production was about $450 per acre, and net revenue showed a loss of about $52 per acre. The reader should recall that government payments to program participants have not been included as revenue, and general farm overhead and management have not been included as costs. The custom category, $66 per acre, was the largest variable cost item. This category includes drying (estimated to be $0.25 per bushel), aerial applications, and custom combining, if applicable. Herbicides average about $45 per acre. Fertilizer and repairs and maintenance average about $38 per acre. The total labor expense was estimated to be about $33 per acre. Total variable cost was $301, with fixed cost of $85.50 and land rent of $64 per acre.

About 244,400 acres of rice were represented by 93 sampled farm operations in 1994. This compares with 303,700 acres reported as being harvested by MASS. Other information about the sampled rice farms is presented in Table 6. The average farm size was almost 2,100 acres, which was somewhat higher than that of the sampled cotton producers. On average, these producers had about 500 acres of rice. Mean rice yield, after applying the expansion factors, was 138.3 bushels per acre, while MASS reported an average yield of 131.7 bushels per acre.

**Table 5. Estimated average market revenues, costs of production, and net revenue for rice, Delta Area of Mississippi, 1994.**

| Item | Mean | Minimum | Maximum |
|---|---|---|---|
| | ---------- $/acre ---------- | | |
| **Market RevenueVariable cost Items:** | | | |
| Custom | 66.13 | 38.50 | 162.63 |
| Herbicides | 45.25 | 8.18 | 118.86 |
| Fertilizer | 37.76 | 21.67 | 98.18 |
| Repairs & Maintenance | 37.59 | 4.43 | 49.85 |
| Seed | 32.96 | 18.59 | 51.48 |

| | | | |
|---|---|---|---|
| Diesel Fuel | 23.05 | 3.04 | 31.23 |
| Haul | 13.83 | 8.00 | 18.00 |
| Operator Labor | 12.41 | 5.24 | 21.23 |
| Overhead Labor | 9.31 | 5.24 | 15.92 |
| Irrigation Labor | 9.06 | 8.05 | 9.94 |
| Interest on Op. Capital | 8.46 | 4.48 | 11.34 |
| Hand Labor | 2.31 | 2.25 | 7.88 |
| Insecticides | 1.24 | 0.00 | 11.17 |
| Levee Materials | 0.88 | 0.33 | 5.83 |
| Fungicides | 0.45 | 0.00 | 16.28 |
| Defoliant | 0.21 | 0.00 | 6.00 |
| Total Variable Cost | 300.92 | 218.23 | 421.29 |
| Machinery Fixed Cost | 85.50 | 10.94 | 119.74 |
| Variable + Fixed Cost | 386.40 | 287.42 | 479.36 |
| Land Rent | 63.96 | 30.00 | 100.00 |
| Total Specified Cost | 450.36 | 337.42 | 545.58 |
| Net Revenue | -52.15 | -199.12 | 94.46 |

**Table 6. Summary statistics from survey of 93 rice producers, Delta Area of Mississippi**

| Item | Mean |
|---|---|
| Cropland Acres Operated | 2,091 |
| Cropland Acres Owned | 412 |
| Cropland Acres Rented | 1,679 |
| Rice Acres Operated | 511 |
| Rice Acres Owned | 128 |
| Rice Acres Rented | 383 |
| Rice Field Size (acres) | 98 |
| Rice Yield (bu/acre) | 138.3 |

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## *Soybeans*

In Table 7, the results for soybean production show that the average revenue was about $182 per acre, total specified cost of production was about $171 per acre, and net revenue was about $12 per acre. The herbicide category, $33 per acre, was the largest variable cost item, followed by repairs and maintenance at $18 per acre. The total labor expense was estimated to be about $11 per acre. Total variable cost was $91, with a fixed cost of $35 and land rent of $45 per acre.

About one million acres of soybeans were represented by 86 sampled farm operations in 1994. This compares with 1.3 million acres reported as being harvested by MASS. Other information about the sampled soybean farms is presented in Table 8. The average size operation was about 1,300 acres, somewhat smaller than the cotton or rice producers that were sampled. Still, a large portion of cropland was rented. Mean soybean yield was 32.5 bushels per acre, while MASS reported an average yield of 31.9 bushels per acre.

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**Table 7. Estimated average market revenues, costs of production, and net revenue for soybeans,**

**Delta Area of Mississippi, 1994.**

| Item | Mean | Minimum | Maximum |
|---|---|---|---|
| | ---------- $/acre ---------- | | |
| RevenueVariable cost Items: | | | |
| Herbicides | 32.56 | 3.77 | 111.65 |
| Repairs & Maintenance | 17.82 | 4.20 | 25.55 |
| Seed | 12.04 | 5.06 | 17.25 |
| Operator Labor | 5.96 | 3.38 | 14.02 |
| Overhead Labor | 5.36 | 3.04 | 12.62 |
| Haul | 5.21 | 0.32 | 8.32 |
| Diesel Fuel | 3.57 | 2.03 | 7.81 |
| Interest on Op. Capital | 3.24 | 1.64 | 7.27 |
| Custom | 3.03 | 0.00 | 37.80 |
| Insecticides | 1.58 | 0.00 | 13.35 |
| Fertilizer | 0.62 | 0.00 | 30.31 |
| Total Variable Cost | 90.98 | 55.73 | 198.34 |
| | | | |
| Machinery Fixed Cost | 34.93 | 9.52 | 53.33 |
| Variable + Fixed Cost | 125.92 | 72.49 | 230.95 |
| | | | |
| Land Rent | 44.71 | 20.00 | 70.00 |
| Total Specified Cost | 170.63 | 107.20 | 265.95 |
| | | | |
| Net Revenue | 11.62 | -151.81 | 11.37 |

**Table 8. Summary statistics from survey of 86 soybean producers, Delta Area of Mississippi**

| Item | Mean |
|---|---|
| Cropland Acres Operated | 1,031 |
| Cropland Acres Owned | 371 |
| Cropland Acres Rented | 930 |
| Soybean Acres Operated | 601 |
| Soybean Acres Owned | 173 |
| Soybean Acres Rented | 428 |
| Soybean Field Size (acres) | 69 |
| Soybean Yield (bu/acre) | 32.5 |

**Table 9. Per-unit cost distribution for cotton, rice, and soybeans in the Delta Area of Mississippi, 1994.**

| Percent of Production | Cotton North Delta | Cotton South Delta | Rice | Soybeans |
|---|---|---|---|---|
| | $/lb of lint | $/lb of lint | $/bu | $/bu |
| | | | | |

| | | | | |
|---|---|---|---|---|
| 10 | 0.376 | 0.340 | 2.88 | 3.88 |
| 20 | 0.420 | 0.369 | 2.89 | 4.28 |
| 30 | 0.457 | 0.405 | 2.92 | 4.32 |
| 40 | 0.469 | 0.438 | 3.07 | 4.43 |
| 50 | 0.493 | 0.474 | 3.18 | 4.90 |
| 60 | 0.520 | 0.510 | 3.31 | 5.10 |
| 70 | 0.525 | 0.555 | 3.40 | 5.56 |
| 80 | 0.555 | 0.600 | 3.61 | 6.86 |
| 90 | 0.597 | 0.670 | 3.85 | 7.08 |
| 100 | 3.660 | 1.320 | 4.91 | 81.50 |

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### *Cost Distributions*

The estimated per-unit cost distributions are presented in Table 9. In the North Delta, about 10 percent of the cotton lint was produced at a cost of less than $0.376 per pound. Low-cost producers in the South Delta had somewhat lower costs than those in the North Delta: $0.340 per pound. This pattern continued until about the 70 percent level. The high-cost South Delta producers tended to spend more per pound of lint than the high-cost North Delta producers. The cost recorded at the 100 percent level of production is somewhat misleading since it represents the highest-cost field in the sample and is heavily influenced by extremely low crop yields.

The cost distribution for rice was much more constant than that of cotton or soybeans. This was due to less variability in both per-acre costs and yields in rice than in the other crops. There was not much difference in the per-bushel cost of rice for the first 30 percent of production: approximately $2.90 per bushel.

The distribution for soybeans exhibited a large increase in per-bushel cost above the 70 percent level. This was due mainly to low yields on these sampled fields. Again, the cost per bushel of soybeans at the 100 percent level ($81.50 per bushel) was extremely high due to an extremely low yield (2 bushels per acre) on that field.

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## References


Cox, Laura R. "Overhead Labor Cost in the Delta Area of Mississippi." Unpublished M.S. Thesis, Department of Agricultural Economics, Mississippi State University. December 1982.

Mississippi Agricultural Statistics Service. "1994 Mississippi Agricultural Statistics, Supplement 29." Jackson, MS.

Spurlock, Stan R. and David H. Laughlin. "Mississippi State Budget Generator User's Guide, Version 3.0." Agricultural Economics Technical Publication No. 88. July 1992.