# THE COST OF GINNING COTTON – 2016 SURVEY RESULTS

**Thomas D. Valco, Retired**
**USDA-ARS**
**Stoneville, MS**
**Harrison Ashley**
**National Cotton Ginners' Association**
**Cordova, TN**
**Dennis S. Findley**
**Southeastern Cotton Ginners Association**
**Dawsonville, GA**
**J. Kelley Green**
**Texas Cotton Ginners' Association**
**Austin, TX**
**Roger A. Isom**
**California Cotton Ginners Association**
**Fresno, CA**
**Timothy L. Price**
**Southern Cotton Ginners Association**
**Memphis, TN**

## Introduction

The cost of ginning cotton is an important concern for producers and ginners. Data from this survey provides information about key variable costs as a component of the overall cost of ginning cotton. These data also identify historical trends of gin operation and help to document the incorporation of new technology to maintain or reduce ginning cost. The survey was conducted for the 2016 cotton crop, which produced 16.7 million running bales (USDA-NASS, 2017). This crop was gathered from 9.5 million acres with an 867 lb average yield, which is 45 lb above the 5-year average yield of 822 lb. In 2016, there were 556 operating gins, averaging a little over 30,000 bales per gin.

## Procedure

Surveys were sent to gins with the understanding that gin identification would be kept confidential. Ginners were asked to identify variable costs, including labor (seasonal and full-time), bagging and ties, repairs, maintenance, drying, and electrical costs. Gin managers also reported performance information, which included number of bales, ginning rate, length of season, and type of cotton ginned (saw or roller ginning, picker or stripper harvested cotton). The survey also requested a description and cost of capital improvements, dryer fuel types, bale tie material (wire or plastic), and percentage of round module usage. In the Mid-South (MS), additional questions were asked to help assess the economic impact of cotton ginning in the Mid-South states and quantify future cotton ginning trends, which will be reported later. The data were analyzed by production regions (Southeast (SE), Mid-South (MS), Southwest (SW), West (W)) and divided into four processing categories: gins producing fewer than 15,000 bales per year, 15,000 to 25,000 bales per year, 25,000 to 40,000 bales per year, and greater than 40,000 bales. Labor cost figures included wages, Workers Compensation Insurance, Social Security, fringe benefits, bonuses, etc. Only the seasonal labor cost was included in the variable cost total.

## Results

Ginners returned 113 surveys, which represented 4.3 million bales or about 26 percent of the bales ginned in the United States. Not all survey questions were completed, or in some cases, entry figures were identified as incomplete and omitted from the data set. Table 1 summarizes the Beltwide average, median, minimum, and maximum variable cost. Variable ginning cost and labor cost were summarized according to region and processing categories (Tables 2 & 3). Gin operational information collected from the returned surveys was reported in Tables 4a-c by regional averages. From previous survey data (Table 5), 2016 resulted in a reduction in total variable ginning cost over 2013 survey results in almost every category, likely due to the large bale volume per gin. (Valco et al., 2003, Valco et al., 2006, Valco et al., 2009, Valco et al., 2012, and Valco et al, 2015).

Table 1. 2016 Beltwide average variable ginning cost per bale summary.

| Beltwide Survey | | Average Cost per Bale ($/bale) | | | | | |
|---|---|---|---|---|---|---|---|
| | Bales Ginned | Bagging and Ties | Repairs | Electric | Dryer Fuel | Seasonal Labor | Total Variable |
| Average | 38,072 | $4.51 | $5.80 | $3.87 | $1.27 | $7.93 | $23.38 |
| Median | 29,674 | $4.58 | $4.97 | $3.30 | $0.95 | $7.60 | $21.39 |
| Min | 2,745 | $3.56 | $1.51 | $1.71 | $0.05 | $1.63 | $11.68 |
| Max | 190,028 | $5.38 | $16.23 | $10.19 | $6.55 | $19.51 | $39.49 |
| Count | 113 | 89 | 93 | 111 | 109 | 101 | 73 |

Table 2. 2016 Regional and processing capacity average variable ginning cost per bale.

| Region* | | | Average Cost per Bale ($/bale) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Bales Ginned | Count | Bag/Ties | Repairs | Elec. | Dryer Fuel | Seasonal Labor | Total Variable |
| BW | 38,072 | 113 | $4.51 | $5.80 | $3.87 | $1.27 | $7.93 | $23.38 |
| SE | 28,128 | 15 | $4.31 | $3.79 | $3.73 | $1.55 | $5.78 | $19.16 |
| MS | 27,775 | 24 | $4.20 | $5.72 | $3.79 | $0.81 | $7.05 | $21.58 |
| SW | 45,008 | 66 | $4.69 | $6.58 | $3.64 | $1.18 | $8.60 | $24.69 |
| W | 30,390 | 8 | $4.37 | $4.75 | $6.60 | $2.66 | $9.55 | $27.93 |
| Capacity (Bales X 1000) | | | | | | | | |
| <15 | 8,619 | 31 | $4.53 | $6.98 | $4.55 | $1.37 | $9.12 | $26.55 |
| 15 - 25 | 19,294 | 16 | $4.43 | $5.76 | $3.91 | $1.59 | $8.98 | $24.66 |
| 25 - 40 | 31,108 | 20 | $4.33 | $6.42 | $4.16 | $1.13 | $8.40 | $24.44 |
| >40 | 67,298 | 46 | $4.60 | $4.73 | $3.30 | $1.17 | $6.47 | $20.27 |

* BW- Beltwide, SE - Southeast, MS - Mid-South, SW - Southwest, W- West

Table 3. 2016 Regional and processing capacity average labor cost per bale and number of workers, seasonal and full-time

| Region* | Average Cost per Bale ($/bale) | | | Workers per 10K Bale | |
|---|---|---|---|---|---|
| | Seasonal Labor | Full-time Labor | Total-Labor | Seasonal | Full-time |
| BW | $7.93 | $5.84 | $13.77 | 3.4 | 1.3 |
| SE | $5.78 | $8.91 | $14.69 | 3.8 | 2.2 |
| MS | $7.05 | $7.44 | $14.49 | 4.4 | 1.6 |
| SW | $8.60 | $4.33 | $12.93 | 3.0 | 1.1 |
| W | $9.55 | $6.91 | $16.46 | 4.2 | 1.9 |
| Capacity Bales X 1000 | | | | | |
| <15 | $9.12 | $9.13 | $18.25 | 12.1 | 4.4 |
| 15 - 25 | $8.98 | $6.65 | $15.63 | 5.1 | 2.4 |
| 25 - 40 | $8.40 | $4.20 | $12.60 | 3.8 | 1.4 |
| >40 | $6.47 | $4.04 | $10.51 | 2.4 | 1.0 |

* BW- Beltwide, SE - Southeast, MS - Mid-South, SW - Southwest, W- West

Table 4a. 2016 Gin operational statistics by region.

| Survey | | Bales Ginned | | Gin Operation (average) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Region* | # of Returns | Average | Total | Days | # of Shifts | Hours Per Shift | Gin Rate (bale/hr) | Rated Gin Cap. | KWH /bale |
| BW | 113 | 38,072 | 4,302,190 | 81 | 1.6 | 11.8 | 30.1 | 39.6 | 41.15 |
| SE | 15 | 28,128 | 421,920 | 67 | 1.5 | 11.6 | 27.8 | 33.7 | 36.32 |
| MS | 24 | 27,775 | 666,593 | 58 | 1.4 | 11.7 | 33.2 | 41.4 | 36.04 |
| SW | 66 | 45,008 | 2,970,560 | 94 | 1.7 | 11.9 | 30.7 | 41.8 | 41.87 |
| W | 8 | 30,390 | 243,117 | 71 | 1.9 | 12.0 | 22.7 | 32.7 | 51.53 |

* BW- Beltwide, SE - Southeast, MS - Mid-South, SW - Southwest, W- West

Table 4b. 2016 Gin operational statistics by region.

| Survey | Dryer Fuel Type % | | Gin Tie Usage % | | Equip. Improvements | |
|---|---|---|---|---|---|---|
| Region* | Natural Gas | LPG | Wire | Plastic | Gins Reporting | Average per Gin |
| BW | 67 | 33 | 33 | 68 | 55 | $278,031 |
| SE | 43 | 57 | 27 | 80 | 7 | $200,051 |
| MS | 65 | 35 | 33 | 67 | 11 | $365,324 |
| SW | 73 | 27 | 31 | 69 | 35 | $276,556 |
| W | 71 | 29 | 63 | 38 | 2 | $96,665 |

* BW- Beltwide, SE - Southeast, MS - Mid-South, SW - Southwest, W- West

Table 4c. 2016 Gin operational statistics by region.

| Survey | Harvest Method (%) | | | Gin Type (%) | |
|---|---|---|---|---|---|
| Region* | Picked | Stripped | Round Modules | Saw Ginned | Roller Ginned |
| BW | 51 | 49 | 41 | 96 | 4 |
| SE | 99 | 1 | 51 | 100 | 0 |
| MS | 100 | 0 | 61 | 100 | 0 |
| SW | 29 | 72 | 36 | 100 | 0 |
| W | 100 | 0 | 29 | 36 | 64 |

* BW- Beltwide, SE - Southeast, MS - Mid-South, SW - Southwest, W- West

Table 5. Comparison of past year's average variable ginning cost.

| Beltwide | Average Cost per Bale ($/bale) | | | | | |
|---|---|---|---|---|---|---|
| Survey Year | Bag/Ties | Repairs | Elec. | Dryer Fuel | Seasonal Labor | Total Variable |
| 2001 | $3.36 | $4.26 | $3.79 | $1.26 | $6.93 | $19.59 |
| 2004 | $3.72 | $3.71 | $3.56 | $1.96 | $7.27 | $20.22 |
| 2007 | $4.16 | $4.75 | $3.89 | $1.84 | $6.93 | $21.57 |
| 2010 | $4.33 | $4.40 | $3.79 | $1.39 | $7.04 | $20.95 |
| 2013 | $4.78 | $6.08 | $4.44 | $1.67 | $7.91 | $24.88 |
| 2016 | $4.51 | $5.80 | $3.87 | $1.27 | $7.93 | $23.38 |

## Conclusions

The 2016 cotton crop was one of the most efficiently processed crops compared to past years, which was reflected by lower costs in most categories compared to 2013 costs. Average processing capacity was about 38,000 bales per gin, which reflects the large crop with the reduced number of gins. The average total variable cost was $23.38 per bale, a decrease of 6 percent over 2013 survey results. Seasonal labor was the largest single expense item reported in this survey, averaging $7.93 per bale. Full-time labor cost was the second largest expense. However, the number of workers used to process these bales continues to decrease with an average of 3.4 seasonal workers per 10,000 bales, about a 50 percent reduction from 2013 results. Regional variable cost data showed that the MS and SE region gins have the lowest per bale cost, while SW and W region gins had the highest cost. The W region gins reported the highest energy and labor cost per bale. About 40 percent of the beltwide bales came to the gin as round modules with the MS reporting over 60% of the bales ginned came from round modules. The highest capacity gins (>40,000 bales per year) have the lowest variable cost, primarily due to lower labor and energy per bale cost. From the gins reporting, 68 percent used plastic strapping over wire. Ginners are encouraged to compare their individual cost data with average values to help identify operational status.

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## References

Valco, T.D., B. Collins, D.S. Findley, Jr., J.K. Green, L. Todd, R. Isom, M. Willcutt, 2003, The Cost of Ginning Cotton – 2001 Survey Results, 2003 Proceedings of Beltwide Cotton Conferences. National Cotton Council, Memphis, TN. CDROM.

Valco, T.D., J.K. Green, D.S. Findley, Jr., T.L. Price, R.A. Isom, 2006, The Cost of Ginning Cotton – 2004 Survey Results, 2006 Proceedings of Beltwide Cotton Conferences, National Cotton Council, Memphis, TN. CDROM.

Valco, T.D., J.K. Green, R.A. Isom, D.S. Findley, T. L. Price, H Ashley, 2009, The Cost Of Ginning Cotton – 2007 Survey Results, 2009 Proceedings of Beltwide Cotton Conferences, National Cotton Council, Memphis, TN. CDROM.

Valco, T.D., H Ashley, J.K. Green, D.S. Findley, T. L. Price, J. M. Fannin and R.A. Isom, 2012, The Cost Of Ginning Cotton – 2010 Survey Results, 2012 Proceedings of Beltwide Cotton Conferences, National Cotton Council, Memphis, TN. CDROM

Valco, T.D., H Ashley, D.S. Findley, J.K. Green, R.A. Isom T. L. Price, and J. M. Fannin, 2015, The Cost Of Ginning Cotton – 2013 Survey Results, 2015 Proceedings of Beltwide Cotton Conferences, National Cotton Council, Memphis, TN. CDROM

USDA-NASS, Cotton Ginning 2016 Summary, May 2017, http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1042.