2012 COTTON GINNING TRENDS Thomas D. Valco USDA ARS Stoneville, MS Harrison Ashley National Cotton Ginners' Association Cordova, TN

Abstract

The U.S. cotton ginning industry has seen many changes in cotton production, processing, and marketing over the past several years. Current trends show reduced cotton acreage, shifts in cotton production regions, and changes in cotton markets. To be competitive, gins must look for every opportunity to improve the bottom line by increasing capacity (bales per hour), volume (bales per season), and cotton value by improving processing efficiency and by preserving fiber quality. Gins must continue to educate managers and workers in programs to improve operational and maintenance practices. Gins must also seek to incorporate the best management practices for efficient ginning to maintain fiber quality and to improve profitability. While gins optimize market value, they also must become increasingly sophisticated with the use of new technology to reduce labor and operating costs.

Introduction

The U.S. cotton ginning industry has seen many new trends over the past several years. These trends include the consolidation of gin plants, wide fluctuations in planted acres, shifts in production regions, higher processing rates, new seed cotton handling systems, automated bale package systems, increasing environmental and safety regulations, etc. Many gins have vertically integrated into cotton production, warehousing, and cottonseed storage to maintain profitability. Gin numbers have steadily declined, while annual volume and operational costs continue to increase (Valco, 2012). Gin owners are looking for every opportunity to improve the bottom line by increasing capacity, volume, and value to their customers. Over the years, there has been a steady increase in producer ownership of gins and vertical integration into cotton warehousing and cottonseed storage. While gins optimize market value, they also must become increasingly sophisticated with the use of new technology to reduce labor and operating costs.

Cotton Production and Ginning Statistics

Figure 1 shows a historic record of running bales that were ginned from 1970 to 2012. It is estimated that 16.8 million bales will be ginned in the U.S. in 2012. The five-year running average shows that almost 15 million bales were ginned. This average includes two years of extremely low-harvested acreage in 2008 and 2009, which produced only 12 to 13 million bales. The average annual volume of bales ginned since 1970, continues to increase, while the number of gins decreases. In 1970, almost 4,000 gins processed about 10 million bales, while in 2011, 682 gins processed about 22,000 bales per gin. In 2012, it is estimated that 663 gins will operate, averaging about 25,000 bales per gin, which is about the same average volume ginned as there was in 2005.

From 2000 to 2003, there was a steady reduction in gin numbers, at about 48 per year. The loss of gins was countered by the increased processing speeds and the addition of new technology. The U.S. produced over 20 million bale crops from 2004 - 2006. Even with the larger crops, gin numbers fell slightly between 2004 and 2006. While some gins closed, there were several new high-capacity gins that were built during that time period. From 2007 - 2009, production dropped dramatically, along with gin numbers. Many gins shut their doors, with the anticipation that cotton acreage would return to that specific area. In some cases, it was true and cotton acreage began to return. During the last three years, production has been relatively stable and gin numbers have leveled off, but it is likely that gins will continue to consolidate to become as efficient as possible through economics of scale that increased volumes have achieved. However, two new Mid-South gins were constructed for the 2012 ginning season.



Figure 1. Cotton Production and Ginning Statistics for the U.S. (*2012 estimated). Source USDA NASS

In Figure 2, the trend line shows that the average cotton yield has steadily increased since 1982, with the occasional "bust" years due to weather conditions. However, over the past eight years, production has reached a high level, averaging over 800 lb/acre. In 2007, there was a record 850 lb/acre average for the U.S. crop, a situation where all production regions had excellent crops. However, the past several years have been marred with production losses in one region or another. In 2011, the U.S. averaged 790 lb/acre and it is estimated that yields will be slightly over 800 lb/acre in 2012.



Figure 2. Average U.S. Cotton Production (lb/acre) since 1982. Source USDA, NASS.

As shown in Figure 3, the U.S. is currently the third largest producer of cotton in the world, China is producing about 32 million bales and is averaging 1150 lb/acre, while India has the second highest production but has very low yields. Pakistan has the potential to challenge the U.S. for the third spot, but production methods and problems

continue to limit yield. Australia has had several years of good cotton production and is increasing its ranking in the world. While the U.S. has made gains in yield/acre, production, it still lags behind several countries, most notably, Australia, Turkey, Brazil, and China. Furthermore, Australia has the highest yield average of any of the major counties, as noted by the horizontal bar on Figure 3. Production conditions and yields in Australia are similar to the Western production region in the U.S.



Figure 3. World cotton production for 2009-12 and average production levels for 2012.

Ginning Trends and Management Practices

New ginning technology will help improve the efficiency and profitability of the ginning operation, but very few people would have predicted the rapid adoption of the round module handling system. The John Deere 7760 picker was first introduced in 2008, which is now revolutionizing the seed cotton handling from the module system that was developed in the early 1970's. Today, there is rapid adoption of these module systems, with new adaptations in handling cotton in both the field and at the gin. In most cases, module trucks have been adapted to pick up round modules after they have been staged in the field. These module trucks pick up round modules that are typically in units of four, which roughly translate to a conventional module. However, ginners are using flatbed trailers that are carrying up to ten round modules. The use of these flatbed trailers requires specialized equipment in the field to load trucks, but does offer some benefits in reduced transportation costs. Gins have rapidly adapted to handling the round modules, from automated systems that remove the plastic wrap to manual systems. As with any new technology, growing pains have occurred as gins adapt to this new system. The round module system does reduce labor requirements for harvesting, requiring only one person and one machine. This new harvesting process increases the labor and/or equipment requirements at the gin, but it also adds some processing and storage benefits for the gin as well.

Gin consolidation has increased the need to gin as fast and efficiently as possible. To achieve this goal, gin equipment manufacturers have increased the width of ginning equipment, with gin stands having greater than 200 saws, and twelve-foot wide seed cotton cleaning and lint cleaners. As well, bale press speeds to keep up with these higher capacities. Of course, increased widths also require increased horsepower, but the number of independent systems within the gin can be reduced. In addition, gins are continuing to develop equipment and markets to utilize the gins' by-products. To recover fibers, systems have been developed that allow ginners to recover usable fibers that can then be separated and marketed independently from the lint bales or that can be added to mote bales to be

sold into that market. Additionally, gins are finding a greater use for their "burrs" (gin trash), which are being used in feed rations for cattle, and some gins have even purchased burr grinders to help in marketing this gin by-product.

Although some of the production statistics are disturbing, ginners must continue to change to meet these needs. Four major areas that ginners must continue to pursue are; the adoption and utilization of new technology, continued education of gin management and workers, incorporation of best management practices into the gin's operation, and continued support of a strong ginning research program to improve both fiber quality and processing efficiency.

Gin management and workers require continued education to keep up-to-date on new ginning technology and improved practices. There is no doubt that gin managers get swamped with so-called "experts" that want to sell them the latest and greatest gin products. However, until one sees this information being presented in a public forum, such as the Beltwide Cotton Conference or gin schools, there is little verifiable information upon which to base a decision. The gin schools have been in place since 1985, and they continue to thrive. The schools are supported by the three USDA-ARS gin labs, NCGA, Cotton Inc., land-grant universities, industry experts, and regional gin associations. In 2013, the gin schools are scheduled for:

Lubbock, Texas – April 1 - 3, 2013 Mesilla Park, New Mexico – May 7- 9, 2013 Stoneville, Mississippi – June 4 - 6, 2013

For those ginners, as well as gin managers, gin schools offer continuing educational courses to provide the latest industry information and issues. Topics have been on moisture measurement and moisture restoration systems, problems with misshapen bales, fan and motor sizing, energy conservation, safety, and the adherence to labor and environmental regulations. In most states, each of the regional or state gin associations conducts meetings to highlight industry concerns and safety training.

The best management practices for gins are important operational processes and conditions that are needed for efficient ginning to maintain fiber-quality and to improve profitability. When seed cotton conditions are ideal, being a good ginner is not as challenging as it is under harsher conditions, but when moisture or excessive trash levels cause problems at the gin, the process can go sour fast, costing money for both the gin and the grower. Education starts at the grower level, with effects on variety selection and production methods for both harvesting and field storage of modules. Furthermore, ginners need to remind growers that the varieties they plant will greatly influence the grades they can expect. If a producer brings a module that is a variety that has inherently poor fiber quality, high trash, high moisture, or poor color, there is no magic that a ginner can do that will improve the inevitable poor outcome.

Best management practices are covered during gin schools and are also discussed in the Cotton Ginners' Handbook (1994). Some topics include proper dryer temperatures, determining correct air velocities in air ducts, properlysized fans and motors, correct adjustments for the gin stand and lint cleaners, and creating uniformly-formed bales, and press operation. Keeping equipment properly-maintained and periodically-adjusted is essential for having an efficient ginning operation. Ginners also need continual updates on environmental regulatory requirements and safety training for all gin workers. Utilizing support software that monitor gin performance, examining maintenance records during down time, and locating modules in the field all help improve the performance of the gin.

Summary

In summary, gins are looking for every opportunity to improve the bottom line by increasing capacity (bales per hour), increasing volume (bales per season), and increasing value by increasing efficiency and preserving fiber quality. To be competitive in the market, gins have adopted new technology to reduce operating costs. Ginners have also provided additional services to extend their operational times throughout the year.

Disclaimer

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