PARKDALE GIN PROCESSING SPECIFICATIONS

Eugene Frye
Parkdale Mills, Inc.
Belmont, NC

Abstract

Parkdale Mills has for several years direct contracted with cotton producers for significant volumes of cotton. These contracts specify such things as variety, number of lint cleaners used on the cotton, and gin operating parameters. This paper outlines the specifications included in the contracts, evaluates the quality and the spinning performance the fiber received, and discusses experiences with cotton from the Intelligin system.

Introduction

The purpose of our ginning specifications is to try to maintain the fiber quality that was present on the seed before harvesting. We are not ginning experts and we do not pretend to be. When we speak of gin processing we are referring to the entire process from module feeders to the bale press and everything in between not just the gin stand.

Discussion

The basic conditions of our direct contracts are as follows:

1. Control Heat

   Contract specifies no more than 180 degrees in the drying towers. This is an attempt to reduce the amount of heat applied to the cotton in preparing it to be cleaned and ginned. There is no control here. If the cotton has too much moisture and needs to be dried, are we adversely affecting the quality of the cotton? Can 180 degrees be too high? If cotton is already dry, are we saying dry it some more? No.

2. Control Moisture

   Preventing over drying is, I believe, what we were after by limiting the heat. We feel like most cotton is processed at too low of moisture content. Conversations with Bobby Greene and Larry McClendon who both have the Intelligin system lead us to believe that this is correct.

3. Lint Cleaning

   Only one lint cleaner for first picking, and it must be rewound each season. To go through only one lint cleaner and it be sufficient, it must be in top notch shape. There is also less chance of fiber damage with well maintained equipment.

4. Reclaimed Motes

   No motes or other gin waste is to be reentered at the gin. This fiber has its applications but not as first quality fiber for our end uses.

All of the above affect the cleaning of the cotton. Varieties are chosen for their fiber qualities and the ease of cleaning. To date all the varieties we have specified in our contracts are smooth leaf. We believe with a good defoliation, one lint cleaner is all that is needed to sufficiently clean the cotton to a leaf grade of five or better. Most of the cotton received a leaf or four or better.

Bale packaging is also very important to us and we specify only Gin UD bales. Recompressed bales or other misshaped bales will not process smoothly through our opening system. We prefer polyethylene bagging with an adhesive bale label. We believe that this bag will give us the least amount of contamination. No bale covering will prevent contamination if the bales are handled badly and are abused.

Contamination is also of great concern to us. Claims we receive from our customers are numerous and very expensive. A lot of the contamination we see comes from module covers, straps around the cover or tie down straps. We specify the types of module covers used. Producer awareness of contamination if much greater with a direct contact with the end user. We ask that fields be checked for contamination before planting and before picking. To get rid of contamination it takes an awareness of it by the ones doing the field work as well as the ginning. Would also like to refer you to George Blomquist's paper he presented last year at the Beltwide Conference "We Can Stop Contamination--This Is the Way We Do It."

Why does Parkdale buy direct from the producers?

There are two primary reasons. The first is to have a consistent supply of cotton during the months of October and November. The merchants have in general done a poor job of supplying cotton to us during these months that would meet our needs. The quality of the direct bought cotton is for the most part very good. As compared to our regular merchant, we would have used about eight percent at a discount and would have rejected about three percent based on our standard contracts. Since we use some off-grades in some products, we have a place for these low grades.

The other reason is to receive a better quality fiber. With the above specifications and quality producers, we have

Reprinted from the *Proceedings of the Beltwide Cotton Conference*
Volume 1:455-457 (1998)
National Cotton Council, Memphis TN

achieved that. The specifications that were stated earlier came from discussions George Blomquist of Parkdale, now semi-retired, had with producers and ginners on how to improve the quality of cotton. Again we are not gin experts.

The ginning process in our contract is set up to try to minimize fiber damage. This still is not always set for optimum fiber quality. Fiber quality is more than just grade. Length, strength, and short fiber content are just as important or more so. The Intelligin system from Uster shows promise of controlling what we have been attempting to for the past few years. It allows one to process the fiber according to its characteristics instead of a worst or best case scenario or trying to gin in the middle.

With the Uster Intelligin system this year, we have had a chance to analyze fiber that has been ginned optimally. This was done by controlling the heat, precleaning and moisture content and the number and types of lint cleaners. A random selection of these bales were analyzed and spun into yarn (Table 1). The cotton from the Servico Gin in Courtland, AL compared favorably with California cotton in both physical tests and in the spun year. Except for strength, the cotton from Servico was as good as the California cotton.

As you can see by the table comparing Servico to the Birmingham Classing Office, the cotton from Servico had a much better fiber package. the reason we compared Servico to Birmingham is that this is cotton from the same region of the country. We compared Servico to Visalia because visalia is normally considered having the best fiber in the county. Servico compared very favorably with Visalia on paper. Results of comparisons of Servico cottons and California cottons in our trial plant are shown in Table 2.

Another system Uster has could also help eliminate contamination. Their Optiscan unit detects contamination and removes it from the fiber stream. We have one of these systems at Parkdale.

Conclusions

The goal of our specifications is to improve fiber quality. They may not be perfect or even suitable for every gin or end user of the fiber. It is Parkdale's attempt at communicating to the ginning industry what we want from them. With our direct purchasing, we have accomplished part of this.

If your customer wants a nice white cotton with no trash, then you must strive to give them what they want even if it means destroying some of the fiber qualities. We would like a better fiber package all around and not just good grades. We are willing to sacrifice some leaf content and grades to obtain a better fiber package.

You must learn who your customers are, what they want, and exceed their expectation with the product you deliver to them

Table 1. Comparison of fiber quality from Servico Gin, Birmingham Classing Office averages, and Visalia Classing Office averages.

Fiber Properties	Servico	Birmingham	Visalia
Length (in)	1.15	1.106	1.134
Uniformity (ratio)	82.7	81.2	82.2
Short Fiber Content (percent)	8.0	11.5	9.2
Strength (grams/tex)	30.0	29.0	31.7
SLM and Better (percent)	80.0	71.4	97.8
Leaf 4 and Better (percent)	86.0	95.0	99.5
Leaf 5 (percent)	12.0	5.0	0.5
Parkdale HVI SFC (percent)	7.6	—	7.1/8.8**

**Two different merchants

Table 2. Spinning performance of test cottons from direct marketed from Servico compared to traditionally marketed California bales.

	Servico	California
Count	24.2	24.2
UT3		
Uster eveness		
1 yd	14.6	14.8
3 yd	4.2	4.4
10 yd	3.4	3.6
50 yd	2.4	2.5
Thin places		
-30	2852	2993
-40	359	402
-50	16	20
Thick places		
+35	698	757
+50	71	80
Neps		
+140	1361	1334
+200	123	130
+280	7	8
Yarn strength		
Tensojet single end break		
gm-force	339.2	372.7
tenacity	13.52	14.85
elongation	4.89	3.94
B-work	471.0	400.3
Classimat III		
total	8	8
majors (top 6)	0	0
thicks	0	0
thins	0	2