FIBER QUALITY & NEW SPINNING TECHNOLOGIES G. Stephen Felker Avondale Mills Monroe, GA

Good morning and thank you for this great opportunity to talk with you for just a few minutes about a most important partnership: Cotton and textiles.

Whether you are growing cotton, or taking that fiber and producing a textile product, you and I are linked in a rough, tough business, in which only the sharpest, smartest and best do well.

Last year, imports of textiles and apparel into this country increased at double-digit rates.

- Textile imports alone jumped 19 percent.
- Yarn imports jumped 24 percent
- Textile and apparel imports from Pakistan were up 37 percent.
- From Thailand, up 22 percent.
- Imports from Brazil were 67 percent ahead.

Whose cotton does these importing textile companies use? Contrary to what many wish to believe, for the most part, it is not yours. These people are your competitors.

So, is there any good news in all this? There is. And it is very good news.

2000 was a record-breaker for U.S. textile exports. The U.S./Mexico trade partnership, though the North American Free Trade Agreement, now accounts for almost 10 percent of total U.S. domestic textile output, about \$6 billion in annual sales.

Overall, U.S. exports of fabric and yarns for 2000 reached a record \$10.5 billion.

- Textile exports to Europe were up 5 percent.
- Those to Asia were up 13 percent.
- To South America up 20 percent.
- And, to the CBI, up 17 percent.

CBI trade represents the potential of over \$8 billion in added annual sales for U.S. mills. The National Cotton Council estimates our cotton consumption will rise by at least 1 million bales to meet that demand. The potential is very real. Very good. Global trade is a reality. Can we compete and succeed? Absolutely! Will there be fall-out along the way? Unfortunately, yes. Only the toughest attitude will prevail.

My company, Avondale Mills, uses upward of a million bales of your cotton a year. Mostly in raw form, some already converted to yarn. Overall, my industry consumes about 10 million bales of your cotton. We are your most consistent customer. We can continue to compete and succeed together but, we must have each other's commitment, grit and determination to do so. We must also make whatever investments are necessary to improve our efficiencies and productivity.

For textile mills, productivity gains relate directly to changing technology. In 1988, there were 76,406 shuttle looms in place in U.S. textile plants. By 1999, there were 72,000 fewer. Why such a dramatic change? Simple. Shuttle machines require 15 $\frac{1}{2}$ minutes to weave the material necessary for a pair of jeans. The first projectile machines took 5 $\frac{1}{2}$ minutes to weave the same amount of fabric. Today's air jet looms take less than 2 $\frac{1}{2}$ minutes. There are even faster machines under development.

Reprinted from the *Proceedings of the Beltwide Cotton Conference* Volume 1:5-7 (2001) National Cotton Council, Memphis TN If you are going to grow cotton, grow cotton that will allow these highspeed textile machines to do what they were built to do maximize productivity, and efficiency. Then, we can maximize our use of your cotton.

It is not me demanding better cotton, it is the technology we have to employ to compete. As machinery speeds have increased, so have the requirements on raw materials. We must have cotton that can meet those requirements.

In that regard, how are we doing?

From your customer's point of view:

- Micronaire is too variable and too course.
- Staple length is decreasing.
- Strength is decreasing.
- Uniformity does not measure up, either.

I do not mean to be offensive, but I must express my personal concern, as well as the concern of most of my colleagues in the cotton textile business.

Something is devaluing the quality of your fiber and it could not happen at a worse time. For the past several years, we have had to compromise on the quality of our raw cotton.

What is causing this deterioration? I know you are working on that answer. I know that weather is always an issue, but allow me to speculate beyond that.

About 12 percent of world cotton now is planted in gene modified varieties. The International Cotton Advisory Council says that genetically modified cotton crops are likely to increase to 50 percent of the world crop in five to seven years. G-M cotton may be addressing pest control and the impact of agriculture on the environment, but do you know with certainty that it is not hurting fiber quality? I am not convinced. Move cautiously here. Be most mindful of your mill customers' fiber quality requirements. You and I cannot afford a mishap when it comes to fiber quality.

Just what are those requirements, from a mill's perspective? They vary depending on the type of spinning equipment in our plants. There are three common types.

Ring technology represents 1/3 of spinning in place. It is used to produce higher end products, apparel and fine yarns counts. Typically, ring spinning uses Memphis, Eastern and S-J-V cotton.

Open end represents about 40% of spinning. It is used in bottom weights, denim and home furnishings. Typically, we use Texas and Memphis/Eastern cotton in open-end spinning.

Air jet accounts for about 24% of spinning. Uses are poly/cotton blends, apparel and home furnishings. Air jet uses Memphis and Eastern cotton. Let's look at quality parameters today developed by a consensus of your U.S. mill customers.

First, micronaire; For ring spinning we need an average of 4.2 to 4.4 with little variability. About the same for air jet spinning. For open-end spinning, we need 3.8 to 4.2 average.

Here is plotted micronaire over the last 12 crop years. This is for Memphis and Easter cotton. The highlighted portions show what mills need. As you can see, micronaire has drifted too course and is highly variable.

Here is the same for Texas. Better but too variable. Next is length.

For both ring spinning and air jet we need a 35 minimum with an average closer to 36. For open end 34 or above on average. Here is that chart.

We have a serious length problem with Memphis and Eastern growths.

Here is Texas. Also deteriorating. Strength requirements of our technology call for 28.5 or better on average.

We are moving in the wrong direction for Eastern and Memphis. Basically the same for Texas.

Now, uniformity requirements:

For ring and air jet, north of 81.5. For open-end, better than 81.

Memphis has been on target until a deterioration this year. Eastern is lagging. Texas falls short of the target.

I have not mentioned another, new spinning technology, the Murata Vortex. It is in some of our mills and its quality requirements are more demanding than those I have just shown you.

I hope I have illustrated the challenges our business face. Together we must meet these challenges early on, head-on. We want to continue our relationship, as your best customer, and you, as our best supplier.

In closing, allow me a comment about a new mill initiative under development to close the gap between what you make and what we need. We are going to evaluate, on a commercial scale, cotton varieties from the major growing regions. We will run them on the various spinning platforms and tell you which varieties best meet our quality needs and which do not.

I will tell you more about this program in my remarks in the panel presentation later this morning. I believe my time is up; I thank you very much for yours.











Figure 4.





Figure 8.

Figure 5.



80.5

80.0

1.95° 1.98° 1.98°







1.98° 1.994

Figure 7.

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