The University of Georgia
Cooperative Extension Service
College of Agricultural and Environmental Sciences

Georgia Cotton

September 8, 2004 http://www.griffin.peachnet.edu/caes/cotton

CROP SITUATION, FRIDAY, SEPTEMBER 3. (***Brown***) As of Friday, September 3, Hurricane Frances is bearing down on the southeastern coast of Florida, and the remnants of this huge storm are predicted to move through Georgia early next week. Though Frances has weakened over the last 24 hours, it is expected to drop considerable rain on our state. Heavy rainfall coupled with winds in excess of 30 mph means trouble for Georgia cotton. As of the first week in September probably as much as 20 to 30 percent of the crop is ready to defoliate, but most growers are watching Frances. Because of high temperatures and humidity in mid-July and the abundance of rainfall early in the season, this crop is at least two weeks ahead of last year's. Most of the April-planted cotton is ready.

A few acres have been harvested and ginned. We are eagerly awaiting classing reports to see how this crop will fare quality-wise.

CROP SITUATION, TUESDAY, SEPTEMBER 7. (***Brown***) Frances indeed visited Georgia and is still dropping rain on much of the state. Cotton is left in an ugly mess. Damage estimates are being compiled, but without question, we have suffered significant losses in yield and quality. Cotton is on the ground. Some fields are a tangled mess. As stated on Friday, perhaps at least 30 percent of the crop was ready to defoliate and harvest, so the wind (20 to 50 mph) and rain (3 to 12 inches) brought havoc on substantial acreage. One county agent estimated local losses at 50 lb/A; another indicated some individual early-planted fields may have dropped as much as 80 percent of potential yield.

LATE SEASON DISEASE AND NEMATODE CONSIDERATIONS (Kemerait) Many cotton growers in the state are nearing the end of their season and making preparations for harvest. The recent rains brought with tropical storm Frances will increase the severity of boll rot, especially for bolls that are just beginning to open. The rain will carry fungal and bacterial pathogens into the newly exposed lint, leading to rot and damage. Unfortunately, there is nothing that the grower can do to manage this rot.

Nematodes have remained an important concern for many growers this season. Trouble-shooting calls have become very common as the crop approaches maturity. Damage associated with southern root-knot, reniform, and Columbia lance nematodes may not be too obvious in many fields during the growing season. However, as the season comes to an end, plants damaged by the nematodes will very likely "cutout" much earlier than other healthier plants. The early cut-out may be confused with Stemphylium leaf spot, or other problems. Damage by nematodes often leads to foliage with dramatic inter-veinal chlorosis. Also, galls may be observed on the fine secondary roots of cotton affected by the southern root-knot nematode. To confirm the presence of parasitic nematodes, a soil sample from the symptomatic areas and a sample from the good areas of the field should be submitted for analysis at the nematode lab.

Areolate (false) mildew has been reported by many agents around the state. The fungus Ramularia gossyppii causes this disease of minor importance. Symptoms usually appear late in the season on lower leaves in the canopy. Small necrotic spots form on the leaves and flushes of white spores appear on the under side of the leaf. Currently, growers do not need to use any treatments to manage this disease, as economic losses are minimal.

In order to prepare for the 2005 cotton season, growers should note areas in their fields with significant damage from nematodes. These fields may need to be rotated to non-host crops, or at least treated with nematicides. Also, growers should consider submitting "predictive" soil samples between now and late November to quantify nematode problems in their fields.

DEFOLIATION CONSIDERATIONS (*Jost*) With the excessive rainfall received courtesy of Frances, defoliation will most likely be much more of a challenge. Prior to the arrival of these late season deluges much of the crop was in great shape defoliation-wise with majority of the canopy having older mature leaves that could easily be removed. Now there is more than enough moisture to promote leaf production or spur further development of regrowth that may have already been present. The best options for removing this type of juvenile foliage are products that contain the active ingredient thidiazuron such as, Dropp, Freefall, Klean-Pik, and Ginstar. It will most likely require more than 1lb/10A of Dropp, Freefall or Klean-Pik to remove current juvenile foliage and prevent later development of regrowth. A new liquid formulation of thidiazuron, Dropp SC, is also available. 1 pt of Dropp SC is equivalent to 1 lb of Dropp 50WP.

A complete listing of **Harvest-Aid recommendations** is now available on the UGA Cotton Web page.

THE MATHEMATICS OF FIBER QUALITY: LENGTH AND UNIFORMITY. ***(Shurley)*** As we continue to probe the fiber quality issues and concerns about Georgia cotton, it is worth noting and it is encouraging to learn that (1) not all mills have a problem with our cotton and (2) Georgia cotton is not all bad– there is some (mostly?) very good Georgia cotton. So we need to be concerned and we need to make improvements where possible (and we will) but both perception and reality have to be dealt with.

The data that Georgia producers receive from the USDA Cotton Classing Office in Macon is called "HVI data". HVI stands for "High Volume Instrument". Looking at the Georgia data historically, the most persistent problems in Georgia cotton compared to other states are (1) a higher proportion of the crop with Staple less than 34, (2) a lesser proportion of the crop with Staple of 35 or longer, (3) lower fiber length Uniformity, and (4) a lesser proportion of the crop with Color 31 and higher proportion of Color 32 and 42.

Staple is not the average length of the fibers in the sample. It is the average length of the longest 50% of the fibers. This is called the Upper Half Mean length (UHM). For example, if the sample tested had 100 fibers, the Staple would be the average length of the longest 50. Staple is expressed in 32nds of an inch. The base or standard is 34/32nds.

Fiber length Uniformity is the Average Length of all the fibers tested divided by the UHM or Staple. This is expressed as a percentage. The base or standard is 80 to 82. For example, if the Average Length was 27.5 and Staple was 34 then Uniformity would be 80.9. If all fibers in the sample were the same length, Uniformity would be 100%.

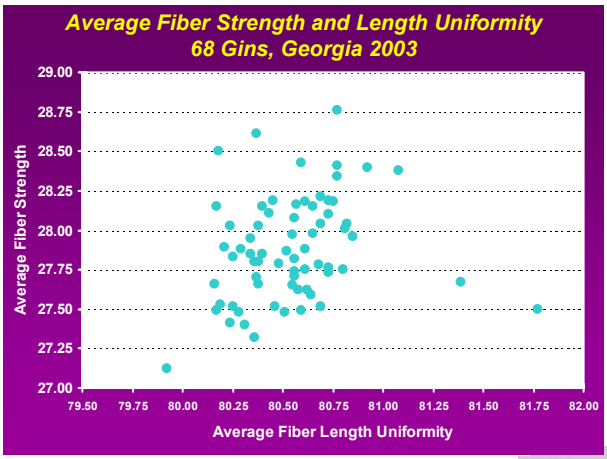
$$UI = 27.5 / 34.0 = .809 = 80.9\%$$

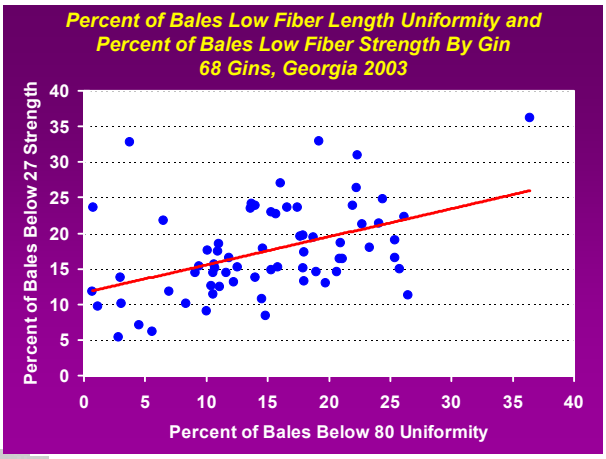
HVI does not provide the Average Length of the fibers. HVI gives only the Staple and Uniformity. The Average Length can be calculated as the Staple times the Uniformity/100. For example:

$$\text{Average Length} = 34.0 \times .809 = 27.5$$

One of the complaints about Georgia cotton from mills has been that it has a higher than normal Short Fiber Content (SFC). SFC is defined as cotton less than ½" (16/32nds) in length. HVI data does not provide this reading but mills often use Uniformity as an indicator of Short Fiber Content. This isn't perfect but it makes sense– the lower the Uniformity, the shorter the average length is relative to the longest 50% of fibers (UHM or Staple), and thus the more likely it is that the sample contains a higher number of short fibers. What may seem like a relatively small difference in Uniformity can mean a significant difference in Average Length and could mean a significant difference in SFC. For example:

33 Staple x 79% Uniformity = 26.1 Average Length
34 Staple x 80% Uniformity = 27.2 Average Length
34 Staple x 82% Uniformity = 27.9 Average Length
35 Staple x 82% Uniformity = 28.7 Average Length





Uniformity may be related to Staple in the sense that bales that are lower in Uniformity tend to also be shorter in Staple (Shurley, *Georgia Cotton*, August 2004). Improving Staple may improve Uniformity. Lower Uniformity may also be related to lower fiber Strength as the 2 graphs above indicate. Weaker fibers may be susceptible to breakage and damage during cleaning and ginning. This is supported by other research. Gin data from the 2003 Georgia crop indicate that gins (groups of producers) with the least percentage of bales low in Uniformity tended to also have the least percentage of bales with low Strength. There were exceptions, but Uniformity tended to increase as fiber Strength increased.

Strength can be influenced by variety and by defoliation and harvest timeliness. Uniformity can be influenced by variety, Staple, and ginning.

Your local County Extension Agent is a source of more information on these subjects.

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