

**FOCUS ON QUALITY - BREEDING THROUGH
SPINNING: WHAT HAPPENED IN 1999?
THE SOUTHEAST
Randy Wells
North Carolina State University
Raleigh, NC**

Abstract

The year 1999 was not a good year for either yields or quality in the southeastern cotton belt. The projected yields are below 500 lbs. per acre and represent the lowest seen in the 1990's. Micronaire was also low with a state average value of 4.2. Virginia had a lower micronaire (4.0) than North Carolina, while South Carolina and Georgia had values of 4.7 and 4.6, respectively. Over six percent of bales from NC had a micronaire of 3.5 or less. Staple length, on the other hand, was the greatest in Virginia and declined progressively from NC to GA. There were several environmental factors that influenced these patterns. The first is the high winds and heavy rains that hit NC and VA 5, 15, and 25 September from hurricanes Dennis, Floyd, and Irene, respectively. In Clayton, NC the rainfall amounts from these respective storms were 5.0, 7.2, and 3.7 inches and this location is west of the hardest hit areas in the state. Using box mapping, the position, weight, and fiber quality of all bolls on plants were measured at Clayton. The number of bolls per unit row length were characteristic of normal plants, with the greatest boll numbers occurring at nodes seven through fourteen. Micronaire values were also normal, with values of 5.3, 5.4, 4.9, and 4.7 for nodal positions 7 and below, 8 through 10, 11 through 13, and 14 and above, respectively. Boll dry weights, on the other hand, were abnormally low (< 4.4 g/boll) for nodal positions 13 and below. This observation indicates that bolls which had opened prior to storm events had lost a considerable amount of fiber due to high winds and rains. Further, the average temperatures during August were 1 to 3 °F above the 30-year average for NC. These higher temperatures, plus adequate moisture during August, provided favorable conditions for the attainment of good staple length. Fiber elongation occurs during the first 3 weeks of boll development and most of elongation would occur during August. After the first 18 d, secondary cell wall deposition occurs and the majority would occur during September. The September temperatures were 1-3 °F below the 30-year state average and combined with the excessive rains would prove to be poor conditions for assimilatory processes. The end result was low micronaire and yield from later maturing bolls.