

## **SPECK TREK**

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### **Abstract**

**SPECK TREK** is the prediction of undyed "white specks" from the field to fabric. This objective is being addressed by quantifying the effects of growth environment fluctuations upon the frequencies and distributions of immature fibers in the crop and assessing the fate of those immature fibers during harvest, ginning, and processing through to finished, dyed fabric. This report features the agronomic and physiological aspects of **SPECK TREK**. Dryland cotton (DP50) plants were grown in Nueces Co., TX in 1993 through 1995. In a typical growing season, no significant rainfall occurs after the third week of flowering. Bolls from plants having only first position bolls or only first and second positions bolls were selected. All bolls from a given plant were pooled in an entire-plant fiber sample and analyzed, using the Advance Fiber Information System (AFIS). As the proportion per plant of immature fibers (IFF) increased, the proportion of low-weight seeds and long-fiber motes increased. Early season bolls contained fewer long-fiber motes than late season bolls. Similar correlations between the frequency of low-weight seeds and/or motes and increased IFF were seen when mote occurrence and AFIS fiber quality parameters, including IFF, were mapped by fruiting site on PD3 plants grown in Florence Co., South Carolina. Both fruiting site and the use of in-row microirrigation significantly altered mote frequency and, therefore, IFF and other fiber maturity characteristics.