

**TEXAS COASTAL PLAINS COTTON, MOTES  
AND FIBER QUALITY. I:  
EFFECTS OF IRRIGATION.**

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fiber mote percentages in irrigated cotton were consistently lower than in rainfed cotton. Early termination of irrigation correlated with high long-fiber mote frequencies in top crop bolls. The variability of cotton fiber properties depended on the amount and pattern of water inputs (rainfall and irrigation).

**Abstract**

Environmental fluctuations during the growing season alter cotton fiber growth and development. Fiber and seed development can be perturbed or terminated any time during fiber development resulting in low weight seeds (60-115mg) or motes (<60mg). Motes have been categorized by fiber length. Short-fiber motes have fiber that is less than one-half the length of fiber from normal weight seeds. Long-fiber motes have fiber that can be removed by ginning.

Deltapine 50 seeds were sown (1993-1995) in experimental plots located at Texas A&M University, Corpus Christi, TX. Irrigated plots were drip watered 7 times in 1993 (104mm); 28 times in 1994 (272mm) and 12 times in 1995 (246mm). Boll tagging began the second week of flowering and continued at 7day intervals for 5 weeks. Fiber samples from first position bolls were analyzed using the Zellweger Uster Advanced Fiber Information System (AFIS).

The rainfall pattern for the prebloom and blooming periods in 1993 was May, 170mm; June 215mm; July no rain. The 1994 rainfall pattern was May, 39mm; June 81mm; July 18mm. The 1995 rainfall pattern was May 105mm; June 57mm; July 16mm. Fiber length for 1993 rainfed cotton did not change as the season progressed. In 1994 and 1995 fiber length decreased in later set rainfed bolls. Fiber length was the same for irrigated and rainfed cotton in 1993. Fiber length in 1994 and 1995 was shorter in rainfed cotton. In 1993 immature fiber fraction (IFF) values for rainfed and irrigated cotton were similar. Rainfed IFF values (1994, 1995) for the second week of flowering were similar to values from irrigated cotton but in subsequent weeks IFF values fluctuated. Micronafis is AFIS calculated micronaire. Micronafis values were low in rainfed and irrigated bolls set during the second week of flowering. Different irrigation schedules changed micronafis values for top crop bolls. The percentage of long-fiber motes in rainfed cotton increased as the season progressed. Long-