EFFECTS OF 1998 DROUGHT ON LINT DEVELOPMENT IN SEVEN GENOTYPES AT COLLEGE STATION, TEXAS

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Abstract

In 1998, College Station, Texas endured one of the hottest and driest summers ever recorded. During the growing season we had thirty consecutive days at or above one hundred degrees Fahrenheit and only eight tenths inches of additional rainfall was reported. It is under these conditions when plant breeders look for adaptive cultivars to withstand such extreme environmental conditions. Our objective was to determine the effect of the extreme heat on fiber and boll characteristics. Strains TAM94L-25, TAM94M-14, TAM91C-95Ls, TAM94WD-17, along with cultivars Tamcot CAMD-E, Suregrow 125, and Acala Maxxa were grown with and without supplemental irrigation in a split block design with four replications. Within-boll yield components (seed/boll, motes/boll, seed index, boll size, percent motes, lint percent) and HVI fiber analysis were evaluated under these production schemes. Five first position mature open bolls from each plot were harvested from the middle and upper fruiting zones along with six whole plant samples of each cultivar. Seeds and motes were counted for each of the five bolls from the middle and upper fruiting zones. All samples were ginned on a roller gin and the lint forwarded to the International Textile Center in Lubbock for HVI fiber analysis. Irrigation had no effect on boll or fiber characteristics. Seeds/boll, motes/boll, seed index, boll size, percent motes, lint percent, micronaire, length, uniformity, strength, and elongation were affected by genotype and boll position.

Reprinted from the *Proceedings of the Beltwide Cotton Conference*
Volume 1:462-462 (1999)
National Cotton Council, Memphis TN