

EFFECTS OF IRRIGATION TERMINATION DATE ON COTTON YIELD AND FIBER QUALITY**Heath R. Reeves****Glen L. Ritchie****Texas Tech University/Texas AgriLife Research****Lubbock, TX****Abstract**

One of the biggest problems facing cotton production on the Texas High Plains is fiber immaturity. Correct timing of the final irrigation in cotton may not only enhance crop maturity, but conserve water as well. It is suggested that irrigation termination shortly after physiological cutout may inhibit further vegetative growth, cause abscission of young fruit, and divert additional resources to existing fruit, changing fiber maturity. The objective of this research was to determine if proper irrigation termination will increase crop maturity rate and improve fiber quality without affecting yield. Studies were conducted at the Texas AgriLife Research Center in Halfway and the Texas Tech University Quaker Avenue Research Farm in 2010, and the Texas Tech University New Deal and Quaker Avenue Research Farms in 2011. Field sites with sub surface drip irrigation were used in both years. Three replications across nine zones of sub surface drip irrigation were used at each location, with the exception of the Quaker Farm location in 2011. This location used three irrigation zones with four replications stacked in these zones. The main plot treatments were timing of irrigation termination and the sub plot treatments were cultivar. Irrigation was stepped down by 33.34% for 3 consecutive weeks at nodes above white flower (NAWF) = 5 + 2 weeks, NAWF = 5 + 4 weeks, and at NAWF = 5 + 6 weeks, the irrigation was cut off. In 2011, the uppermost boll and flower were marked at physiological cutout and were observed for boll retention and development. Fiber samples were analyzed at the Texas Tech Fiber and Biopolymer Research Institute for AFIS, HVI, and mini-spinning analyses.