IN-SEASON COTTON GROWTH OF FOUR CULTIVARS UNDER DIFFERENT IRRIGATION REGIMES

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Abstract

Cotton irrigation across the Texas High Plains is becoming a more and more sensitive issue with the continuing decline of the Ogallala Aquifer. With this decline, area growers are more concerned about the cotton varieties ability to grow and yield under deficit amounts of irrigation. The purpose of the study was to monitor in-season cotton growth and development under different irrigation regimes. The study consisted of four varieties, FM 9170, PHY 375 and 499, DP 1044, and three irrigation regimes including zero irrigation after first square, 0.12 inches, and 0.22 inches per day. Included in the study were eighteen neutron probe sites and nine Pure Sense TDR probes. Throughout the growing season weekly measurements were taken monitoring plant height, total nodes, and nodes above white flower. At the time of harvest one meter samples were taken and then box-mapped, while recording total number of bolls and boll distribution. Fiber quality was determined by the Texas Tech University Fiber and Biopolymer Research Institute from grab sample taken during harvest.