COTTON FRUITING DURATION OF FOUR CULTIVARS AND TWO IRRIGATION REGIMES

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Abstract

Research was conducted in Georgia, North Carolina, and Tennessee belt during 2009 and 2010 to investigate cotton cultivar response to two differing irrigation regimes. Deltapine (Monsanto Co.) DP 444 BG/RR, DP 555 BG/RR, Phytogen (Dow AgroSciences) PHY 375 WRF, and PHY 565 WRF were grown under either optimal irrigation levels or reduced irrigation levels during the early flowering period. When plots reached physiological cutout (NAWF = 5) optimal irrigation was restored or maintained for all plots until an open boll was present. As expected higher irrigation rates resulted in taller plants, increased node numbers, and later maturity. However, the most interesting aspect of this research was differences in cotton yield based on environment each year. During 2009 temperatures were moderate with lower than average heat unit accumulation and higher than average precipitation. In 2010 heat unit accumulation was well above average and precipitation was much lower than average. In 2009, the reduced irrigation regime displayed higher yields for all varieties compared to the optimum water regime. During 2010 the opposite was found where the higher irrigation regime yielded more than the reduced irrigation regime.