Water Use of Full-, Deficit-Irrigated and Dryland Cotton on the Northern Texas High Plains. (A03-howell161404-Poster)

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Abstract:

Cotton (Gossypium hirsutum L.) is beginning to be produced on the Northern Texas High Plains as a lower water-requiring crop that produces an acceptable profit. Cotton is a warm season, perennial species produced like an annual yet it requires a delicate balance of water and water deficit controls to most effectively produce high yields in this thermally-limited environment. This study measured the water use of cotton in near-fully irrigated, deficiently irrigated, and dryland regimes in a Northern Texas High Plains environment, which has a shortened cotton producing season, using precision weighing lysimeters in 2000 and 2001. The irrigated regimes were irrigated with a lateral-move sprinkler system. The water use data were used to develop crop coefficient data and compared with the FAO-56 method for estimating crop water use. Cotton yield, water use, and water use efficiency were found to be as good in this region as other more noted cotton regions. FAO-56 evapotranspiration prediction procedures performed better for the more fully irrigated treatments in this environment.

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Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 1:00-3:00 pm
Poster Board Number: 538

Keywords:
water use, lysimeter, cotton, irrigation