

**Sincik M, Candogan BN, Demirtaş C, Büyükcangaz H, Yazgan S, Goksoy AT (2008) Deficit irrigation of soya bean [*Glycine max* (L.) Merr.] in a sub-humid climate. J. Agron. and Crop Sci. 194:200-205.**

#### Abstract

An experiment was conducted to investigate the influence of different levels of water deficit on yield and crop water requirement of soya beans in a subhumid environment (Southern Marmara region, Bursa, Turkey) in 2005 and 2006. One full-irrigated treatment (T<sub>1</sub>), one non-irrigated treatment (T<sub>5</sub>) and three different deficit irrigation (T<sub>2</sub> = 25 % water deficit, T<sub>3</sub> = 50 % water deficit, T<sub>4</sub> = 75 % water deficit) treatments were applied to ‘Nova’ soya bean planted on a clay soil. Non-irrigated and all deficit irrigation treatments significantly reduced biomass and seed yield and yield components. The full-irrigated (T<sub>1</sub>) treatment had the highest yield (3760 kg ha<sup>-1</sup>), while the non-irrigated (T<sub>5</sub>) treatment had the lowest yield (2069 kg ha<sup>-1</sup>), a 45.0 % seed yield reduction. T<sub>2</sub>, T<sub>3</sub> and T<sub>4</sub> deficit irrigation treatments produced 11.7–27.4 % less seed yield than the T<sub>1</sub> treatment. Harvest index showed less and irregular variation among irrigation treatments. Both leaf area per plant and leaf area index were significantly reduced at all growth stages as amount of irrigation water was decreased. Evapotranspiration increased with increased amounts of irrigation water supplied. Our results indicate that higher amounts of irrigation resulted in higher seed yield, whereas water use efficiency and irrigation water use efficiency values decreased when irrigation amount increased.