The present study was conducted to determine the effects of different irrigation levels ($I_{100}$: full irrigation; $I_{85}$: 15% deficit; $I_{70}$: 30% deficit; $I_{55}$: 45% deficit and $I_{40}$: 60% deficit) on yield and yield components, sugar and protein content of fresh sweet corn during the years of 2011 and 2012. Experiments were carried out in a randomized complete-block design with three replications.

The lowest and the highest amounts of irrigation water were applied in $I_{40}$ (240-406 mm) and $I_{100}$ (348-504 mm) treatments in both years. Water deficit affected maize fresh ear yields, yield components, quality and water use efficiencies. The lowest fresh ear yields (11515.7 and 10952.3 kg ha$^{-1}$) were determined in $I_{40}$ treatments in both years. The highest fresh ear yields (14857.7 and 14712.7 kg ha$^{-1}$) were obtained from $I_{100}$ treatments in 2011 and 2012 years, respectively.

Maize fresh ear yields were significantly affected by water deficits. Low irrigation levels decreased the ear yields. However, it was clearly observed that $I_{70}$ treatment could be a water-saving treatment without a significant decrease in yield. In addition, the highest protein content and sugar amount was also observed in $I_{70}$ treatment. $I_{70}$ treatment seems to have lowest impact on yield and higher quality for sweet corn.

**Key words:** Sweet corn, drip irrigation, yield and quality, ear characteristics