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 on 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