

Abstract

The objective of the study was to evaluate effects of four different drip irrigation levels equivalent to 50, 75, 100, and 125% of crop water requirement (CWR) and three potassium doses of 10.4, 20.8 and 31.2 g plant⁻¹ cycle⁻¹ on production, quality and water use efficiency of tomato (*Lycopersicon esculentum* Mills), variety Débora Plus. Irrigation, potassium doses and its interaction with irrigation levels had significant effects on total, commercial and non commercial production at 5% level. Marketable yields reached a maximum of 64.4 t ha⁻¹ at 20.8 g plant⁻¹ cycle⁻¹ of potassium, produced at 75% CWR. Maximum water use efficiency was 12.4 kg m⁻³ of applied water, also obtained at 75% CWR leading to reduction of 25% CWR hence optimizing water resources through improved efficiency of water applications to the plant.