WATER USE EFFICIENCY IN BANANAS POME TYPE CROPSUSING EMPIRICAL COEFFICIENT BASED ON LEAF AREA

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The aim of this work was to evaluate the yield and water use efficiency (WUE) of banana 'Prata-Anã' (AAB) and 'BRS Platina' (AAAB) during two cycles of production in a semi-arid climate of Brazil (classified as Aw according Köppen). The plants were irrigated by drip irrigation and were evaluated five levels of irrigation (IR). A simple model to estimating plant transpiration (Coelho Filho et al., 2004) was used for the calculus of IR. The model is based on reference evapotranspiration (ETo) and evolution of plant total leaf area (plants of the "family"): IR = K.AF.ETo. We achieved the five levels of RI by varying the values for the empiric transpiration coefficient (K) (0,20; 0,35; 0,50; 0,65) and a treatment based on crop coefficient (Kc): ETc = ETo.Kc. The greater values of WUE were obtained using the low levels of RI (K = 0.2 and 0.35) but these treatments reduce the plant productivity in the second cycle which were higher on high levels of irrigation (K = 0.50; K = 0.65 and Kc). Analyzing the WUE of these three treatments and varieties, we have concluded that by using K=0.5 is possible to equalize well the relation between yield and WUE. For scenarios of water scarcity is possible achieve high levels of WUE (38 kg mm-1) in the second cycle of production using the low value of K (0.2) with an impact of 15% on the plant yield.