

Title: Soil water balance and wetted areas quantifications from drip irrigation in tropical fruit trees.

Author: MsC. Geisy Hernández Cuello.

Abstract.

The irrigation management of guava and papaya crop was defined in two agricultural scenarios. Water delivery for the crop was carried out with a localized irrigation system, using the drip irrigation technique in both cases. In the first area five treatments were carried out consisting in restoring the water when the soil water tension arrived to the two critical values 25 cb and 40 cb using one and two laterals per plants with each tension value. The wetting area (ah), soil water balance, and the crop coefficients (kc) were determined. Main results about wetting area determinations in papaya crop show that in the one lateral design wetted area represent 19.44% of the plantation area (amp) and in two lateral designs wetted area represent 30.55 % of the plantation area. In guava crop the results show that wetted area represent 12 % of the plantation area. It was also determined for both crops that it wasn't necessary to irrigate, beyond 40 cm of depth. The soil water balance quantifications allowed to define the soil water availability, water fluxes beyond the root zone and evapotranspiration and crop coefficient determinations. It was defined crop coefficient curves for each crop under conditions of maximum soil water availability. It was also defined crop coefficients decennial value for irrigation management under productions conditions.