

Soil water extraction by roots and evapotranspiration crop coefficients for coffee

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Abstract: Basic information for a rational soil-water management of the coffee crop is still insufficient, mainly under irrigated conditions. Of great importance for the estimation of water requirements of coffee crops are their root distribution and evapotranspiration crop coefficients. This study compares soil water extraction by roots of coffee plants variety “Catuaí Vermelho” (IAC-44), grown in Piracicaba, SP, Brazil, 3 to 5 years old, with direct measurements of root dry matter, showing a good agreement between both approaches, and confirming that most of the root system is distributed in the top soil layer (0-0.3m) and that less than 10% of the root system reaches depths greater than 1.0m. Calculated evapotranspiration crop coefficients are in agreement with those found in the literature, with an average of 1.1, independently of shoot dry matter, plant height and leaf area index.

Key words: perennial crop, soil water storage, water balance