Water loss by floral structures of avocado (*Persea americana* cv. Fuerte) during flowering

AW Whiley, KR Chapman and JB Saranah

Abstract
Transpiration rate (E) and epidermal conductance (gc,) were determined for avocado leaves and floral parts under controlled environmental conditions (28¦C; PAR 60 8mole quanta m-2 s-1; VPD 1.14 kPa). E of hydrated flowers was shown to be approximately 60% that of similarly treated leaves. Around 13% of total transpirational water loss from tree canopies could be attributed to floral organs. The mean gc of leaves and flower panicles was similar at 0.028 and 0.023 mm s-1 respectively. The available canopy surface area for water loss increased by c. 90% during flowering. Xylem water potentials in panicle segments with open flowers were lower than those of mature leaves measured on trees in the field. Maximum transpiration rate of leaves measured in the field was 6.7 8g cm-2 s -1 at 0700 hours, declining to 3.0 8g cm-2 s-1 at 1100 hours, while stomatal conductance (gs) on the same leaves fell from 10.2 mm s-1 at 0700 hours to 2.52 mm s-1 at 1100 hours. Scanning Electron Microscope studies of leaves and floral structures highlighted morphological and anatomical features for water conservation. Mature leaves have an epicuticular wax-like layer on the adaxial surface. Stomates were located only on the abaxial surface, which was also covered wlth wax-like deposits. Stomate density was estimated at 73 000 cm-2 on sun leaves. Stomates were also located on abaaial surfaces of flower sepals and petals. All floral structures were densely pubescent, thereby increasing the effective boundary layer depth.

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