

**Title** Postharvest behaviour and quality characteristics of mango (*Mangifera indica* L.) fruit grown under water deficit conditions

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### **Abstract**

Preharvest cultural practices affect the postharvest quality and behaviour of many fruits. In this study we compared the postharvest behaviour and quality of mango (*Mangifera indica* L. cv. 'Tommy Atkins') fruit from irrigated and non-irrigated trees. The trees were subjected to water stress (non-irrigated) up to 42 days after bloom (DAB) and control trees were irrigated throughout the year. The fruit were harvested at 168 DAB (mature stage). Ripening was conducted under ambient conditions of temperature and relative humidity. Fruit weight decreased with time and the loss was more pronounced in fruit from non-irrigated trees. Starch content and total titratable acidity decreased with increase in storage time. Total soluble solids (TSS) content increased during ripening and fruit from irrigated trees had higher TSS content. Respiration exhibited a true climacteric curve with ethylene production being detected at 11 days after fruit harvest. Fruit from irrigated trees reached climacteric peak almost five days earlier than those from non-irrigated trees.  $\beta$ -carotene content increased steadily with increase in time, decreasing at 9 days in storage. Although firmness and anthocyanin content decreased with time in fruit from both treatments, fruit from non-irrigated trees maintained higher values. Fruit from non-irrigated trees had a longer shelf life than those from irrigated trees due to a delayed climacteric peak and higher degree of firmness. These results indicate that irrigation influences fruit firmness, colour development and the postharvest shelf-life of mango fruit.