

Title The combination of pre- and post harvest deficit irrigation improves loquat earliness and performance at packing house

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Abstract

Loquat commercialization and price depend on fruit size and earliness. Fruit earliness can be improved by post-harvest regulated deficit irrigation (RDI). An optimization of post-harvest RDI strategies by the limitation of the dry period has led to greater harvesting advancement and profitability. However, water savings were reduced. Aiming to further improve fruit earliness and quality and to increase water savings, we have combined pre- and post-harvest DI. Here, we present results of four treatments differing in the moment in which pre harvest DI was implemented. Treatments were T1: controls trees no irrigated during a 6 weeks period after harvest; T2: trees no watered from rapid fruit growth phase to harvest (9 weeks DI) in addition to post-harvest DI; T3: trees in which pre-harvest DI was implemented at colour break (6 weeks DI); and T4: trees suffering DI during rapid fruit growth, but re-irrigated at colour break. Full-irrigated trees were grown a nearby plot for comparison. Water savings differed among treatments. T1 saved 17% with respect to full-irrigated trees, and advanced harvesting 16 days. Implementing a dry period prior to harvest resulted in an additional water savings (11-23% added), in an even earlier harvest date (7-10 days before), and in a higher amount of precocious yield (15-24% more). Fruit size was diminished by T2 and slightly by T3, but not at all by T4. The negative effect on fruit size was translated to harvest pack out. A major advantage of T3 and T4 treatments was the better performance of their fruit during manipulation.