

Title Physiological characterization of 'Algeri' loquat maturity: external colour as harvest maturity index

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Abstract

In the loquat growing area of Spain, a minimum soluble solids content of 10 °Brix is required as standard of quality to ensure fruit maturity stage that meets consumer expectations. Nowadays, the maturity index used to harvest is the visual observation of the external colour of the fruit, thus growers experience is decisive to decide the optimum harvesting time. In the present work, the relationship between the changes in the colour of the fruit and the physiological changes that take place during loquat maturation has been established for loquat 'Algeri'. Eight maturity stages were fixed based on a visible increase in external colour, ranging from stage I (dark green) to stage VIII (dark orange). Immediately after harvest, physiological stage of the fruit was characterized. The changes in colour observed during maturity were linked to an increase in weight, diameter and soluble solids content, as well as to a decrease in firmness, acidity and soluble tannins. No relevant changes were observed in ethylene and respiration rate during maturation, which reflects the non-climateric behaviour of this cultivar. Soluble solids content of 10°Brix was reached between maturity stage SV and SVI, which correspond with an external colour of IC= +3 to +6 (IC=1000a/Lb). Sensory evaluation of acidity and astringency revealed that only fruit harvested after reaching maturity stage SVI were sensory accepted. Thus, to satisfy consumer preferences 'Algeri' loquat must be harvested with a minimum external colour of IC= +6. Based on this work, we have developed a colour chart for maturity evaluation that matches the surface colour of 'Algeri' loquat, which can be a useful tool to decide the optimum harvesting date.