

The plant age influences eggplant fruit growth, metabolic activity, texture and shelf-life

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Abstract

Vegetable quality shows extensive variation along a single production cycle depending on the harvest season. So far, these effects have been mostly attributed to variations in preharvest climatic conditions, resource availability and cultural practices. Whether or not some of these differences are also influenced by variations in the plant age is unknown. The aim of this work was to evaluate if the plant age modulates eggplant fruit composition at harvest and postharvest performance. Eggplants were synchronically produced in plants having different age (4- or 9-month old). At the same dates fruit was picked and assessed for quality at three developmental stages: *Baby* (9 cm long), *Small-Commercially Mature* (*Small-CM*, 17 cm long) and *Large-Commercially Mature* (*Large-CM*, 19 cm long). Eggplants from 4- and 9-month old plants harvested at *Small-CM*, were stored at 10 °C for 0, 7, 14 and 21 d and evaluated for postharvest performance. Eggplants picked in 4-month plants grew faster, reaching commercial maturity earlier than those developing in older plants. In addition, fruit growing in 4-month plants were softer and had higher respiration rate and sugar content. Instead, the plant age did not affect seed number, size or fruit antioxidant content. Finally, fruit from 4-month plants were less susceptible to postharvest dehydration and softening and stored better. Taken together results show that the plant age significantly affects eggplant fruit growth, metabolic activity, texture and shelf-life.