

**Title** Uncommon disorders and decay in near-isogenic lines of melon and reference cultivars  
**Author** Juan Antonio Martínez, Mohammad-Madi Jowkar, Javier Mauricio Obando-Ulloa, Plácido Varó, Eduard Moreno, Antonio José Monforte and Juan Pablo Fernández-Trujillo  
**Citation** Horticultura Brasileira, 27(4), 2009.  
**Keywords** Cucumis melo; Decay; Fruit quality; Physiological disorders; Postharvest; Preharvest

### Abstract

Postharvest disorders and rots can produce important economic losses in fruits stored for long time for exportation. The genetic and physiological basis of some disorders in melon (*Cucumis melo* L.) are unknown and particularly the possible relation with climacteric behavior. A collection of melon near-isogenic lines (NILs) (SC3-5 and seven more showing climacteric and two non-climacteric ripening pattern) were analyzed to study genetic and physiological aspects of fruit disorders and rots. Two non-climacteric (Nicolás; Inodorus Group; and Shongwan Charmi PI161375, Conomon Group) and two climacteric cultivars (Fado, Reticulatus Group; Védrantais, Cantaloupensis Group) were used as reference. The field was divided in eight blocks containing one three-plant replication for each NIL, two for the parental cultivar Piel de Sapo and one or two for the reference cultivars. Replications evaluated were more than six in the cultivars studied. Plant problems included aphids, powdery mildew, and leaf wind injury. Preharvest fruit disorders included whole fruit cracking in cultivar Védrantais and NIL 5M2, and styler-end cracking in cultivar Fado. Climacteric NILs with yellow skin were particularly affected by over-ripening, styler-end cracking, and sunburn during cultivation. At harvest, two NILs showed slight placental tissue necrosis which was inherited from SC and were also detected after storage. Other uncommon disorders seen at harvest or 30 days after storage at 8°C included warted skin (scarring), flesh discoloration (light brown or translucent areas), hollow flesh disorder, and deep furrow netting inherited from SC. Less common rots included grey mould, bacterial soft rot, *Penicillium* rot, cottony leak and internal *Cladosporium* rot. Styler-end hardness below 20 N·mm<sup>-1</sup> was associated with cracking and softening. The incidence of the disorders and rots was too low to confirm that the genetic component played a role in their development.