

Abstract

Five muscadine (*Vitis rotundifolia* Michx.) cultivars were evaluated for postharvest quality traits. 'Sugargate' had higher soluble solids and pH while 'Granny Val' had the lowest soluble solids. The ranges in pH and titratable acidity were narrow and ranged from 3.07 to 3.46 and 0.52 to 0.79. Phenolics content ranged from 0.33 for 'Sugargate' to 0.54 for 'Ison'. Considerable variability was also found in sugars. 'Sugargate' had 8.5, 7.0 and 3.3% while 'Granny Val' had 5.1, 3.3 and 0.95% fructose, glucose, and sucrose, respectively. Firmness, measured as compression force, showed 'Granny Val.' to be less firm than the other cultivars. 'Sugargate' had skin (exocarp) tougher than all cultivars, except 'Nesbitt'.

Pre-storage treatments with CO₂, K₂O₅S₂, and SO₂ reduced decay of 'Granny Val' and 'Blackbeauty' muscadine cultivars. Firmness of Granny Val was reduced by K₂O₅S₂ and weight loss was reduced by CO₂. The SO₂ and CO₂ treatments and harvesting in cluster affected Hunter color of 'Granny Val'. However, no color differences were detected by taste panelist.

Cuticle wax plates on the exocarp of shrunken fruit of 'Granny Val' were disrupted. Exocarp cells of sound fruit were larger than those of wrinkle fruit. Exocarp thickness of both muscadine cultivars were at least 15 cell layers. Exocarp thickness for 'Red Seedless' was approximately 5 cell layers and 6 to 7 cell layers for 'Thompson seedless'.

Fruit decay was reduced when rabbiteye blueberries (*Vaccinium ashei* Reade) were pre-cooled with either water(12 °C) or water plus added sorbate and citric acid. An oil-based fruit coating (Tandem) increased blueberry decay and reduced panel ratings for appearance. Tandem and the sorbate plus citric acid treatments reduced weight loss of 'Tifblue' fruit. The CO₂ and SO₂ treatments reduced weight loss of 'Brightwell' fruit.