Abstract:

Grape (Vitis vinifera) like other fruits is subject to rapid physiological deterioration on account of high respiration and transpiration. Experiment was conducted to study the effects of post-harvest treatments with antioxidants in combination with AOX-inhibitors on total soluble solids, titrable acidity, shelf-life, cumulative physiological loss in weight, berry shatter, drying of primary and secondary rachis and pedicels of 'Thompson Seedless' grapes stored at 4°C temperature. Higher shelf-life was recorded in both the treatment combinations of ascorbic acid 1000 ppm with AOX-inhibitors SHAM 1.0 mM (62.67 days) and n-PG 1.0 mM (55.67 days) and in sodium benzoate 500 ppm with SHAM 1.0 mM (54.00 days) and it was only 42.00 days in control. Grapes treated with antioxidants and n-PG (1.0 mM) recorded lower cumulative physiological loss in weight. In all the treatments increased shelf-life reflected the reduction in weight loss. Per cent of berry shatter was significantly reduced in ascorbic acid 1000 ppm combination with both AOX-inhibitors and sodium benzoate 500 ppm with SHAM 1.0 mM (2.08). The drying of primary and secondary rachis and pedicel was influenced by period of storage. The treatments, which prolonged shelf-life also slowed down the drying of rachis. Both AOX-inhibitors with ascorbic acid 1000 ppm and SHAM 1.0 mM with sodium benzoate 500 ppm proved to be effective in delaying the drying of primary rachis, secondary rachis and pedicel.