Title Screening of advance breeding lines/cultivars for shelf-life and biochemical changes during storage of ash gourd (*Benincasa hispida*)

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Abstract

Mature fruits of 19 advance lines of ash gourd (*Benincasa hispida*) were used to study the changes in bio-chemical parameters during storage. Fresh and stored (75 days at ambient temperature) fruits were analyzed for protein (mg/100 g pulp), fat (mg/100 g pulp), total sugar (%), dry matter content (g/100 g pulp), pectin (g/100 g pulp), vitamin C (mg/100 g pulp), calcium (mg/100 g pulp), and crude fibre (g/100 g pulp). Fruit spoilage was recorded at every 20 days on a 0-4 scale. Fruits did not deteriorate up to 80 days of storage, and some black spots on the fruit surface developed after 80 days. Genotypes IVAG-502, IVAG-50, IVAG-88 and IVAG-71 did not deteriorate up to 100 days, while no spoilage was observed in Hybrid-600 up to 120 days. In fresh fruits, maximum protein (690 mg) was recorded in genotype IVAG-90, followed by IVAG-54-1 (666 mg), while genotype PAG-3 had minimum (243.9 mg). In stored fruits, the protein content ranged between 238 mg (PAG-3) to 612 mg (IVAG 54-1). The fat content ranged between 99 to 106 mg in fresh fruits compared with 95 to 104 mg in stored fruits. The total sugar in fresh fruit was recorded between 0.80% (IVAG-88) and 3.89% (IVAG-3), while it was recorded in the range of 1.77 to 4.72% in stored fruits. The maximum dry matter was recorded in BH-21 (4.85 g) and minimum in IVAG-223 (4.00 g) in fresh fruit. This study showed that biochemical parameters like sugar content, crude fibre, calcium, and dry matter content increased, while vitamin C and pectin content decreased during fruit storage.