

Title Postharvest changes in strawberry and grape tomatoes under different storage temperatures
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Abstract

Shelflife and quality characters of Strawberry tomatoes (President's choice, USA) and Santalina Grape tomatoes (Sunset, Mexico) at USDA colour stage 6 were assessed under cold storage and ambient conditions. The fruits were kept for postharvest studies at two storage time intervals (7 and 14 days) and at two levels of storage temperature (10°C and 22°C). The observations revealed that the fruit weight was reduced by more than ten percent in both strawberry and grape tomatoes over a period of 14 days. The initial moisture content was found to be around 90 percent in both strawberry and grape tomatoes; however, the reduction in moisture content was found more in strawberry tomatoes (70.52%) on 14th day of observation. Irrespective of the days of observation, the firmness was found higher in grape tomatoes with an average pressure required for puncture recording at 1.13 to 1.58 kg. The data recorded using Instron universal material testing machine also confirmed the higher degree of firmness in grape tomatoes by registering a value of 0.027 J of energy for the break point while strawberry tomatoes required 0.021 J of energy. The pH of the fruit juice was acidic in nature and it was found lower (3.44 to 4.91) in grape tomatoes but the total soluble solid was observed higher (6.86 to 7.30 °brix). The observations using chromameter (CR 300) indicated that the colour indices, redness (a), yellowness (b) and whiteness (L) were high in grape tomatoes irrespective of the treatments and days of observation. The respiration rates were higher in grape tomatoes inspite of possessing higher fruit firmness and lower moisture content. The detection of aromatic and volatile compounds using electronic nose (fast GC) revealed the presence of C7 and C9 compounds in strawberry tomatoes and, C10 and C12 compounds in grape tomatoes. It can be inferred from the Shldy that grape tomatoes posses better shelflife (up to 14 days, if stored at 10°C) and fruit quality than strawberry tomatoes. The fruits showed the symptoms of shrivel and decay after 14 days of storage, irrespective of the treatments.