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The Internal browning development during cold storage of Mauritius pineapple (*Ananas comosus*) grown in Sri Lanka

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Internal Browning (IB) is a physiological disorder that occurs under the cold storage of pineapple and it is a major constraint in export of pineapple under refrigerated sea freight. The objectives of this study were to investigate the development of IB under the cold storage of Mauritius pineapple grown in the major pineapple growing areas (Kurunegala and Gampaha districts) of Sri Lanka and to investigate the chemical changes that occur due to this disorder. The development of Internal Browning (IB) in Mauritius pineapple for 1, 14, 21 and 28 days of cold storage under 15 °C and 80-85 % RH was investigated. Pineapple fruits of 5% ripe maturity stage were harvested and stored in a cold room. Some fruits were stored at room temperature (28 °C) as control. Fruits were removed from the cold room at weekly intervals for four weeks and analyzed after keeping 72 hours at room temperature (28 °C). The IB intensity was determined using a visual scale (0-5; 0=no IB, 5=100% IB). The fruit ascorbic acid, Total Soluble Solids (TSS), pH, percentage weight loss and titratable acidity were determined.

Fruits stored at 15 °C followed by 72 hours exposure to room temperature were affected with IB development. These fruits had no external symptoms. Up to the 21st day of cold storage fruits right after the removal from cold room had no IB development. With the exposure to room temperature up to 72 hours the IB development was occurred in them. There was no IB development in the fruits kept at room temperature (28 °C) as control samples. Fruits affected with IB were significantly low ($p<0.05$) in ascorbic acid, TSS than the unaffected fruits. However, the percentage weight loss was significantly high ($p<0.05$) in control fruits than the cold stored fruits. The relationship between IB intensity (X) and ascorbic acid content (Y) and TSS (Y) can be expressed by the equations $Y = 22.6 - 4.8 X$ and $Y = 6.9 - 0.4 X$. There was no significant difference between IB developed and non developed fruits for pH and titratable acidity.

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