Characterization of Physical and Chemical Properties of Selected Vegetables Under Modified Storage Condition

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Minimizing the postharvest losses will be a sustainable solution to increase the food availability which could meet the requirement for food by growing population. In Sri Lankan context, perishable vegetables are stored throughout the postharvest chain without using proper storage facilities which resulted 30-40 % postharvest losses annually. Thus this study was aimed to extend the postharvest life of selected vegetable using modified storage conditions such as 65% relative humidity (RH) with 20-22°C temperature. Potato (Solanum tuberosum), Beetroot (Beta vulgaris L.), Knol kohl (Brassica oleracea var. gongylodes), Carrot (Daucus carota L.), Beans (Phaseolous vulgaris L.), Lettuce (Lactuca sativa), Mentha leaves (Mentha spicata) and Coriander leaves (Coriandrum sativum) were selected for the study. Temperature (20-22°C) was controlled using air conditioner and relative humidity (65%) was maintained by manually operated humidifier. The ambient condition served as the control. Firmness, brix, pH, percentage weight loss (in percentage) and surface colour were evaluated in five days. In modified storage condition, Potato, Knol khol and Carrot have shown same firmness as initial condition after five days of storage. Potato, Beetroot, Lettuce and Mentha leaves showed continuously increase significant brix value during storage. Beetroot and Beans showed the best performance under modified storage condition with regards to pH value. All vegetables showed the highest weight loss at ambient condition. Carrot turned into dark colour at modified storage, but Mentha leaves and Coriander leaves did not show any colour change. Knol khol is not changing in colour during modified storage condition. After considering all parameters, in 65% RH vegetables can be stored without losing their quality when considering five days' storage.

Keywords: Postharvest loss, Modified atmosphere storage