Identification of Potential Treatments to Overcome the Browning of Dehydrated Guava

***Kumara, B.A.M.S., Wijewardane, R.M.N.A. and Samarasinghe, Y.M.P.**
National Institute of Postharvest Management, Sri Lanka
*Corresponding email: kbamsmahesh@gmail.com

Guava cultivations are spreading rapidly among Sri Lankan farmers, especially in dry zone. Surplus production is observed in certain months of the year. Dehydration can be used as an effective method to preserve the surplus. On dehydration, browning of guava cultivar "Apple guava" impairs the quality of the final product. Hence, this experiment was carried out to find out the most effective browning inhibitor. Four treatments were used, prior to dehydration, namely, Citric acid (CA), Ascorbic acid (AA), Sodium metabisulfite (SMS) and Blanching for 2 minute in 60 °C (BL). Out of twenty different combinations of the above treatments, five treatment combinations were selected for further evaluations. Selected treatment combinations were: CA 0.3 % with BL, CA 0.5 % with BL, AA 0.5 % with BL, SMS 0.5 % with BL and only BL. The L*, a* and b* values, signifying colour parameters, were recorded and colour differences with the fresh slices were calculated. Values were compared among treatments, the control being the dehydrated sample without treatment and with fresh samples as well. The L*, a* and b* values were significantly different ($P < 0.05$) among treatments. Highest L* was observed in fresh sample (85.74 ± 1.3) whereas lowest was in the control sample (67.91 ± 4.1). Significant difference ($P < 0.05$) was observed in L* value difference (LD) with respect to fresh samples among the treatments. The lowest LD was observed in CA 0.3 % with BL (3.18 ± 0.7) followed by BL treatment only (4.37 ± 2.7) whereas highest was observed in control sample (18.23 ± 2.7). Lowest a* value was observed in fresh samples whereas highest was in AA 0.5 % with BL. Lowest difference in a* value was in BL treatment followed by CA 0.3 % with BL. Lowest b* value was observed in fresh samples whereas highest in SMS 0.5 % treated sample with BL. Lowest difference in b* value was in BL treatment. Results revealed that out of the treatments under study, BL only and CA 0.3 % with BL were most effective solutions to overcome the browning of dehydrated guava.

Keywords: Browning, Colour, Guava, Postharvest