EFFECT OF PROPOLIS AND OTHER NATURAL PRODUCTS ON POSTHARVEST DECAY AND QUALITY OF FRUITS

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Executive Summary

The experiment was carried out in the Postharvest Laboratory of Sher-e-Bangla Agricultural University, Dhaka during the period of January 2019 to June 2019 to find out the effect of different postharvest management practices of guava to increase shelf life and quality. Two factors experiment *viz.* Factor A: P_0 (no packaging) and P_1 (perforated polythene) and Factor B: T_0 (no preservatives), T_1 (Propolis 5%), T_2 (Chitosan 1%), T_3 (Gum Arabic 5%), T_4 (Propolis 5% + Gum Arabic 5%), T_5 (Propolis 5% + Chitosan 1%), T_6 (Cinnamon oil 2%), T_7 (Lemongrass oil 2%) and T_8 (Cinnamon oil 2% + Lemongrass oil 2%) were initiated for the experiment. The experiment was laid out in completely randomized design (CRD) with three replications. Various data on physical and chemical properties were collected. In case of the effect of packaging materials, P_1 (perforated polythene) showed best performance and showed the highest shelf life (9.78 days) compared to P_0 (no packaging) (7.89 days). Regarding preservatives, T_1 (Propolis 5%) gave the best results on studied parameters and showed highest shelf life (12 days) compared to other treatments and shortest shelf life was recorded from T_0 (5.5 days). In case of combined effect of packaging materials and preservatives, at 12 DAS the lowest percent weight loss (6.46%) and percent dry matter content (14.63%) were found from P_1T_1 whereas the highest weight loss (10.23%) and dry matter content (21.08%) was found in P_0T_0. Similarly, the highest percent moisture content (85.37%), percent titratable acidity (2.23%), vitamin C content (196.60 mg/100g), percent total soluble solid (7.76%), firmness (4.30 kg/cm^2) and percent total sugar content (9.17%) were also found from the treatment combination of P_1T_1 at 12 DAS whereas P_0T_0 showed the lowest results (78.92%, 0.701%, 144.4mg/100g, 5.16%, 2.10 kg/cm^2, 5.361%, respectively) on the respected parameters. Likewise, the highest shelf life (13.00 days) was also recorded from P_1T_1, whereas the lowest (5.00 days) was from P_0T_0. So, the treatment combination of P_1T_1 can be considered the postharvest treatment for guava.

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