

Effects of low temperature storage of Mastura (J37) jackfruit bulbs on the physical quality of jackfruit frozen confection

ABSTRACT

Mastura (J37) jackfruit variety planted in Pahang (Malaysia) is less preferred by the consumers due to its low sweetness and high-water content properties. This has caused major backlog in the plantation as reported by Pahang State Farmers Association (PASFA). In this study, among the proposed solutions given was to build a frozen confection processing line to further process the flesh. The jackfruit used were vacuum-packed and stored under refrigerated and frozen conditions. The overrun, melting resistance, and hardness of jackfruit frozen confection produced from jackfruit stored in both low temperature conditions showed comparable results. The overrun of 50 to 55 % were obtained for frozen samples at different weeks. Jackfruit frozen confections had lower overrun compared to the controlled sample as air incorporation was prevented by the elements contained in jackfruit. The control frozen confection sample without addition of jackfruit puree resulted in an average melting mass of 24.6 g and melting resistance of 59 % which was the strongest melting resistance in comparison to other jackfruit frozen confections. The inconsistent hardness of jackfruit frozen confections suggests that the content of total soluble solid increased throughout week 1 to week 3 for refrigeration storage and week 1 to week 6 for deep-freeze storage had no trending effect on the hardness of frozen confection. The output obtained from this work provides data for the downstream processing of Mastura (J37) jackfruit. These data are helpful as they contribute towards the understanding of further processing of this particular jackfruit variety into end products, in order to solve the issue faced by PASFA. The solution helps decrease waste generated from the surplus and value add the variety.

Keyword: Jackfruit; Minimally process fruit; Frozen confection; Dairy manufacturing; Food security