EFFECT OF SELECTED LOCALLY AVAILABLE STABILIZERS ON QUALITY ATTRIBUTES OF ICE CREAM

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In this study, low-cost locally available stabilizers were evaluated as a potential ingredient for developing ice cream and the associated quality attributes were measured. Ice cream was prepared using a standard recipe in which the commercial stabilizer was replaced by locally available stabilizers (2.5-5%). As locally available stabilizers, starches extracted from purple yam (*Dioscorea alata*), sweet potato (*Ipomoea batatas*), jackfruit seed (*Artocarpus heterophyllus*) and cassava (*Manihot esculenta*) were used. Commercially available vanilla-flavoured ice cream was used as the control. A sensory evaluation was conducted with 30 untrained panellists to select the best ice cream in terms of organoleptic quality. Analyses were conducted to measure melting rate, total solids, pH, overrun, solid nonfat and density in fresh ice cream samples. In addition, pH, melting rate, overrun, density and total soluble solids were analysed at two weeks intervals during the storage (-18°C) for two months. Among the treatments, the sweet potato starch-stabilized ice cream showed the best organoleptic qualities. The sweet potato and purple yam stabilized ice creams had significantly lower ($p<0.05$) melting rates and total solids compared to the control. The pH was significantly different ($p<0.05$) among the treatments where purple yam stabilized ice cream had the highest pH of 7.5. The highest overrun (59.9±0.02%, $p<0.05$) was observed in the jackfruit starch stabilized ice cream among the treatments whereas it was significantly lower ($p<0.05$) in sweet potato (33.3±0.003%) and purple yam (33.3±0.001%) stabilized ice creams. In all treatments, pH, overrun, density, and total soluble solids significantly decreased during storage, while the melting rate did not change significantly ($p>0.05$). Based on all the quality attributes studied, sweet potatoes and purple yam are the most suitable starches for inclusion in ice cream as stabilizers.

***Keywords*:** Ice cream, Quality attributes, Stabilizers, Starch