

Development of Pasta using Jack Fruit (*Artocarpus heterophyllus*) Seed and Bulb Flours and Quality Evaluation

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Jackfruit (*Artocarpus heterophyllus*) is a well-known perennial tree and one of the major suppliers of edible foodstuff in Sri Lanka. However, utilization of jack fruits has less attention due to seasonality, pre-preparatory activities, and availability in urban and semi-urban areas. Hence, the development of value-added products is one of the potential alternatives to increase the shelf life, consumption, and utilization of jack fruits during the season and to reduce the postharvest losses. Development of jack fruit pasta was experimented by adding jack fruit seed (JFS), jack fruit bulb (JFB) (*Madullu*) flour and cassava flour (CF) yielded after drying, grinding, and sieving (particle size <200 μ m). Experiment were conducted with four composite flour formulations of JFS, JFB, CF, corn starch and semolina as treatments, T1:30:30:10:10:20, T2:35:35:7.5:7.5:15, T3:40:40:5:5:10, and T4:35:35:0:0:30 respectively. The best flour mixture was selected based on the sensory evaluation using the Hedonic scale (7-points, 1-extremely dislike, 7-extremely like) with 36 panelists and data analyzed by the Friedman test. Based on the mean scores (colour 6.1, flavour 6.9, texture 5.1, aroma 5.3, and overall acceptability 6.3), T3 was selected as the best formulation. T3 pasta possessed the highest contents of crude protein (13.26 \pm 0.18%), crude fiber (4.91 \pm 0.61%), ash content (3.35 \pm 0.04%) than the other treatments. However, there was no significant difference ($p>0.05$) among the treatments for hardness, moisture, and water activity. The cooking characteristics of pasta (T3), water absorption (1.2 \pm 2.4 g/g⁻¹), cooking time (8.5 \pm 0.3 min), swelling index (2.5 \pm 4.2%) were higher than the other treatments while cooking loss (15.5 \pm 1.3%) less than the T1, T2, and T4. The lightness value of pasta was decreasing by increasing JFS and JFB flour. Developed pasta using composite flour of T3 has significantly higher nutrient content and more than 3 months shelf life at ambient temperature (26 \pm 2 °C). The developed pasta has fulfilled the minimum product standards. In conclusion, the developed jack fruit flour pasta (T3) possessed a high potential for commercial-scale production as a convenient food for the consumers in urban areas with busy lifestyles.

Keywords: Jack fruit seed, Flour, Pasta, Cassava, Convenient food