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Development of quick cooking jak seeds *(Artocarpus heterophyllus* L.*)* for fast food industry

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Jak fruit, a very famous fruit in rural areas in Sri Lanka, grows everywhere in the country. The jak tree bears fruits seasonally which have a high nutritional value. Now-a-days, most of the people are busy with their day-to-day life style and like to use value-added food items that can be prepared quickly and easily. The traditional method of cooking of jak seeds is a cumbersome and time-consuming task. Therefore, there is a necessity to develop quick cooking jak seeds that can be used in the fast food industry. Five kilograms of cleaned jak seeds were kept for 10 days under shade for drying and aging. At the same time, another 5 kg of seeds were obtained as fresh seeds. All seeds were kept in a laboratory oven at 230 °C for 15 min (hot air drying) for easy removal of the seed coat. The jak seeds were soaked in cold water for 6 h and further soaked in 0.5% sodium bicarbonate for another 6 h. Thus, soaked jak seeds were kept in the freezer at -18 °C for 8 h. After thawing, all the jak seeds were dried in a dryer for 4 h at 70 °C and the dried samples were packed using double-laminated packaging materials. The most acceptable two treatment combinations for jak seed preparation were selected after determining the sensory properties of the prepared jak seeds on a 5-point hedonic scale using 15 semi-trained panelists. The finalized two treatment combinations were evaluated for sensory properties with a control using Kruskal-Wallis non-parametric one way ANOVA test and the sensory attributes were taste, texture, hardness, smell and overall acceptability. The selected best formulation was tested for microbiological properties, changes in pH and the moisture content to determine the shelf-life. Moreover, the developed product was tested for proximate composition to determine the nutrient composition. The best treatment combination was fresh jak seeds soaked in 0.5% sodium bicarbonate and packed in double-laminated packaging material after double-freezing. The average cooking time of the developed quick cooking jak seed was 1 min and 20 sec. The contents of moisture, fat, protein, ash, and crude fiber of the developed product were 4.65%, 0.39%, 5.87%, 1.25% and 1.33%, respectively. The shelf-life of the developed product was more than 2 months considering the sensory, microbiological and physicochemical properties.

Keywords: Jak seed, microbiological properties, rapid-cooking, sensory properties, shelf-life

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