

EFFECT OF BAKING TEMPERATURE ON THE QUALITY AND  
SHELF LIFE OF KURAKKAN (*Eleusine coracana*) FLAKES FOR  
DIABETIC PATIENTS



BY

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## ABSTRACT

Kurakkan (Finger millet) is a cereal used in indigenous medicine and its diabetic food value is well known. This research study was conducted to develop flakes out of Kurakkan, beneficial for diabetic patients. These flakes were produced from kurakkan flour at four different baking temperature and duration. The various temperature and time combinations were used to bake the dough are at 165°C for 22 minutes, 175°C for 20 minutes, 185°C for 18 minutes and 195°C for 16 minutes. Full cream milk powder, table salt and baking powder were used as ingredients with the main ingredient of Kurakkan flour.

The flakes were subjected to nutritional and organoleptic analysis to evaluate the suitability of these flakes for consumption and for long shelf life. The nutritional (moisture, fat, protein, fibre, mineral and total sugar) and organoleptic (colour, flavour, texture, taste and overall acceptability) qualities were analyzed for freshly made kurakkan flakes. The protein, fibre, moisture and fat content of the flakes decreased from 6.25 to 5.55%, 3.31 to 3.06%, 2.06 to 0.96% and 2.90 to 2.77% respectively, while mineral and sugar content increased from 2.85 to 2.90% and 2.32 to 3.14% respectively, with increase in the baking temperature for the freshly made kurakkan flakes. Seven-point hedonic scale ranking method was used to evaluate the organoleptic characters. Dough baked at 175°C for 20 minutes had the highest mean score followed by dough baked at 185°C for 18 minutes. Organoleptic results were analyzed using Turkey's test and minitab windows version with Friedman non parametric method. Based on the quality characters the most preferred best two flakes were selected and subjected to storage study. Three different packaging materials

were used for the storage studies which were parchment paper, oriented polypropylene and laminates. Storage study was carried out in two weeks interval throughout the experimental period of three months. The findings of the study revealed that, the declining trend was observed in protein, fibre, fat, total sugar and mineral during the storage periods and increasing trend was observed in moisture content in all three packaging materials. Low nutrient losses were observed in laminate packaging material compare to oriented polypropylene and parchment paper. From the overall acceptance rating, dough baked at 175°C for 20 minutes with laminate packaged flakes had the highest mean value compare to other samples. Treatment T<sub>2</sub> which was packaged in laminate consisted of 5.76% of protein, 2.82% of fat, 2.31% of total sugar and 3.14% of fibre and 2.67% of mineral at the end of the storage. Therefore, the results revealed that the temperature of 175°C for 20 minutes was suitable for baking the dough to develop kurakkan flakes and lamintes is the best packing material to store these flakes without loss of quality.

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