

## DEVELOPMENT OF EXTRUDED FLAKES USING FINGER MILLET, SOYBEAN AND RICE

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Finger millet (*Eleusine coracana*), rich in minerals (iron and calcium), fiber and vitamins, is an important nutricereal commonly used in South Asia. Therefore, this study was undertaken to develop and evaluate the novel extruded flakes using finger millet, soybean and rice. Four treatments were prepared with grit using varying proportions of finger millet, soybean and rice. Twin screw extruder was used for extrusion cooking at a temperature of 155 °C and a screw speed of 300 r/min. Extruded product was conveyed to the cutting unit and then transferred to the driers. The proximate analysis of the developed products were carried out to determine the total calories in 100 g of product, moisture, crude fat, crude fiber, crude protein, ash and starch. The best treatment was determined with the help of a sensory panel using a five point hedonic scale and ranking test. Repeated data were analyzed using SAS. Non parametric data were analyzed using Friedman test in Minitab. Sensory evaluation results revealed that, treatment 2 (finger millet 50%, rice 20%, soybean 30%) had the best quality extruded product. There were significant differences ( $p < 0.05$ ) in taste, colour and overall acceptability among treatments but, texture and smell did not differ ( $p > 0.05$ ). The extruded product had 6.94% fat, 21.40% protein, 1.61% fiber, 6.76% moisture, 3.28% ash, 66.78% starch and 368.35 total calories per 100 g. Though treatment 1 (finger millet 70%, soybean 30%) had a higher level of minerals and fiber, due to higher level of finger millet, it was not accepted due to poor sensory properties. Hence, the novel product having 50% finger millet, 20% rice and 30% soybean was selected as the best and had the highest sensory properties. Therefore, finger millet could be effectively utilized for the production of extruded flakes.

**Keywords:** Extrusion, Finger millet, Flakes, Rice, Soybean