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Development of jackfruit (*Artocarpus heterophyllus*) based noodles incorporated with kohila (*Lasia spinosa*)

R.S.Rajapaksha[1]* and T.A.K.A.Thennakoon[1]

[1] Department of Food Science and Technology, Faculty of Applied Sciences, Sabaragamuwa University, Sri Lanka

Abstract

Jackfruit is gluten-free and rich in starch, proteins, vitamins, minerals, and many classes of phytochemicals. Commercial noodles were found to have a very small amount of fiber. A diet low in fiber may contribute to a number of gastrointestinal and cardiovascular problems. Objective of this research was to make a gluten-free, fiber rich noodles using jackfruit bulb flour incorporated with *kohila* (*Lasia spinosa*) rhizome flour. Three different flour composites were prepared by blending jackfruit and *kohila* flour (C1-95:5%, C2-90:10% and C3-85:15% w/w) and 100% (w/w) jackfruit flour was considered as control (C0). Water and oil absorption capacities, bulk and tapped densities, and swelling capacity were determined as functional properties of different flour samples while colorimetric values, textural properties, cooking properties of all noodles samples and proximate composition, and microbial counts of control and best sample were determined. Water and oil absorption capacities of *kohila* (304.00±0.02% and 210.33±1.52%) were higher than jackfruit flour (277.20±0.00% and 158.66±0.57%). Noodles prepared using treatment C1 (95:5% jackfruit to *kohila*) obtained the highest consumer preference from five point hedonic test. Color values were not significantly changed among different noodle samples ($p>0.05$). Due to 5% incorporation of *kohila* flour, the fiber content was increased from 13.25±0.12% to 14.76±0.19%. Moisture, protein, fat, ash and carbohydrate content of best sample (C1) were 7.51±0.04%, 9.3±0.06%, 0.59±0.01%, 3.52±0.01% and 63.59±0.65%, respectively. Hardness of cooked, best sample (C1) was 39.67±1.53 g. Cooking loss of noodles made with 100:0, 95:5, 90:10 and 85:15 flour blend were 2.51±0.02%, 5.53±0.01%, 7.82±0.08%, and 8.53±0.10%, respectively. When increasing the particle size of treatment C1 from 0.4 mm to 0.5 mm, cooking loss was increased from 5.53±0.01% to 20.5±0.50%. It can be concluded that composite flour using jackfruit and *kohila* can be effectively used to make gluten free, fiber rich consumer acceptable noodles.

Keywords: Composite flour, Gluten free, Jackfruit, *Kohila,* Noodles

*Corresponding Author: ruwanirajapaksha96@gmail.com