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Nutritional studies on rice bran incorporated cereal

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Rice bran is a highly nutritious by – product of the rice processing industry. In Sri Lanka it is utilized only as an animal feed. The present study reports the utilization of rice bran to produce a consumer acceptable breakfast cereal and the nutritional properties of the product.

Three cereals were prepared by mixing rice flour (milled by 2 mm diameter die) with 5%, 10% and 15% stabilized rice bran from Madathawalu. The rice bran was stabilized by steaming in a pressure cooker immediately after milling. The mixture was extruded with a 2 mm die at 140 °C using a twin screw extruder. The cereal prepared was dried at 60 °C for 2 hours and sealed in double layered polythene. The sensory evaluation of the product mixed with slightly warmed milk containing sugar was carried out by 12 trained panellists at ITI using seven point hedonic scale for colour, odour, flavour, appearance. The resulting scores were analysed using the Friedman non-parametric statistical test in the SAS package. The results of sensory evaluation suggest that 10% rice bran incorporated cereal was the best product and the proximate analysis of the product (moisture, protein, fat, ash, fibre and carbohydrates) was also carried out.

It was observed that the percentages of moisture, protein, fat, ash, fibre contents of the particular product (dry weight g/g) were 9.3 ± 0.3 , 10.9 ± 0.5 , 4.2 ± 0.3 , 1.2 ± 0.02 , 0.8 ± 0.1 and 82.5 ± 0.9 , respectively while those of rice were 14.3 ± 0.3 , 8.1 ± 0.5 , 0.96 ± 0.13 , 0.7 ± 0.1 , 0.55 ± 0.04 and 89.4 ± 0.6 and of rice bran was 8.53 ± 0.03 , 16.8 ± 0.4 , 18.1 ± 0.4 , 5.71 ± 0.97 , 5.6 ± 0.5 and 53.1 ± 2.5 , respectively.

The present study reveals that a consumer acceptable cereal that is more nutritious than rice could be obtained by incorporating 10% rice bran with rice.

Further, the ash (7 -12%) and crude fibre (8 -12%) content in Madathawalu were lower while moisture (8-12%), protein (12 -16%) and fat (16 -22%) were within the range reported elsewhere.

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