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Development of biscuits using wheat-rice flour blends

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Even though rice is the staple food in Sri Lanka, usage of rice flour into bakery industry is rare. Therefore, studies were undertaken to develop biscuits by incorporating rice flour since biscuits, cookies and crackers represent the largest category of snack items among the baked food in Sri Lanka.

While processing of paddy, a sizeable quantity of broken rice is produced which is an economic loss to the processors. It could be used for food purposes and the baked products offer a good avenue for its utilization.

Hence the objective of the study were, determine the critical limit of incorporation of rice flour into wheat flour in preparation of good quality biscuits and find out the best recipe from developed products.

For this, wheat flour was fortified with rice flour in varying proportions (w/w, 0, 10, 20, 30 and 40%) to develop a series of blends for biscuit preparation according to a standard recipe.
A sensory evaluation by a panel of 10 judges was conducted on 5-point hedonic scale in order to determine the critical limit of substitution of rice flour for wheat flour in good quality biscuit. Results of the sensory evaluation indicated that wheat flour could be substituted with rice flour up to 40% level, as a source of dietary fibre, without affecting the overall quality.

Analysis for proximate composition was conducted to estimate moisture (%), ash (%), fat (%), protein (%) and crude fibre (%). Moisture content of biscuits increased with increasing percentage of rice flour showing a significant difference between 40% rice substitution with control and 10% rice substitution. No significant difference in ash content was shown with increasing rice incorporation. Fat content is higher in 40% rice sample and significantly different from other biscuit samples. Protein content of biscuits showed positive relationship with increasing level of substitution of rice. Fibre content was significantly higher in 30% and 40% level of rice substitution.

Biscuit showed a good keeping quality over a period of three months.

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