

Development of Fortified Rice Breakfast Cereals Adopting Drum Drying Technology

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Developing countries feature a high cost of fortified nutritious balanced foods which is always beyond the reach of most low income families. Such families often depend on inefficiently processed traditional un-supplemented cereal foods. Therefore, experiments were conducted to formulate a combined breakfast blend based on rice and soybean adopting drum drying technology to improve nutrient density of the balanced food and nutrient intake, which resulted in the prevention of malnutrition problems. Rice - Soybean ratio was maintained from 70-60% to 30-40%, respectively. Banana, pumpkin and milk powder were used as cover-ups to overcome the beany flavour in the product. The blends were prepared as drum dried products and subjected to nutritional, sensory and microbial studies. Nutritional analyzes were done for protein, fat, total soluble carbohydrate, total sugars, fiber, ash and moisture content. Sensory characteristics were assessed for colour, aroma, taste and overall acceptability by using ranking test. Based on the nutritional and organoleptic characteristics, drum dried mixture consisting of 60% rice, 30% soybean and 10% banana was selected as best combination among the other tested treatments. The best product had protein, fat, total soluble carbohydrate, total sugars, fiber, ash and moisture content of 17.4, 6.32, 65.9, 3.36, 0.87, 2.94 and 3.12% respectively at 5% significant level. The findings of microbial studies showed that no total plate counts were observed in the developed drum dried mixture. Results from this study suggest that native cereals such as rice and soybean could be used as ingredients for fortified breakfast mixture to fulfill the balance nutrition of low income families.

Key words: Drum drying, Nutritional, Rice, Sensory, Soybean