

DEVELOPMENT OF CEREAL/LEGUME DRINKS AND PORRIDGE MIXTURES USING LOCALLY AVAILABLE RAW MATERIALS

M.S. MALLAWA, D. RAJAPAKSHA*, AND G.G. S. GAMLATH

*Department of Food Science and Technology, Faculty of Agriculture, University of Peradeniya,
Industrial Technology Institute, Colombo 07, Sri Lanka

This study was conducted to prepare a range of cereal/legume drinks and porridge mixtures by using locally available raw materials (rice, mung bean and finger millet). Preliminary study was conducted to find the best method to prepare malt from finger millet (*Elusine coracana*) and to pregelatinize cereals and legumes. Three drinks each using finger millet and mung bean were prepared adding milk powder and sugar. Four porridge mixtures were developed by varying proportions of mung bean and rice. The drinks and porridge mixtures developed were subjected to organoleptic evaluation by a trained sensory panel. The scores of the panel were statistically analyzed using Friedman's non-parametric test. Only the products selected from the sensory evaluation were analyzed to determine their proximate composition (crude protein%, crude fat%, crude fiber% and total ash%).

The best method to malt the finger millet found to be soaking for 24 hours, germination for 48 hours, primary kilning for 3 hours at 60°C for three hours followed secondary kilning by roasting. Compared with the other methods used to pregelatinized rice and mung bean, roasting was the best. The two most acceptable drinks developed each from malted finger millet and roasted mung bean showed quality attributes (colour, flavor, aroma, consistency and overall acceptability) comparable to a similar product available at the market. However, the malted finger millet based drink received a significantly higher preference ($P < 0.05$) for colour and aroma over the market product. Among the different instant porridge mixtures tested, the only mixture containing 75% mung bean and 25% rice was ranked within the moderately acceptable range with a median score of 7.5 in the 9 point Hedonic scale.

The proximate compositions of the drinks developed were within the ranges of 18-22% crude protein, .9 -9% crude fat, 3.5- 3.6% total ash and 1-2% crude fiber in dry weight basis. Crude protein, fat, ash and fiber contents of porridge varied in the ranges of 14-15%, 1-6%, 3.3-3.6% and 2-3%, respectively.

This study shows that locally available raw materials can be used with a low cost preparation technique to develop instant drinks and porridge mixtures having acceptable sensory properties with significant nutritional values. These products could be produced in commercial scale by modern processing methods such as extrusion technology.