

Physico-Chemical and Sensory Properties of Cassava Flour Biscuits Supplemented With Mango Flour

SE Nilugin^{1*} S Mahendran²

ABSTRACT. Biscuits are ready-to-eat and convenient food product containing digestive and dietary principles of vital importance. A study was undertaken to develop biscuits with good nutritional quality from cassava flour (CF) and mango flour (MF) and to evaluate the quality characteristics of biscuits produced. Cassava roots were processed into flour using standard method. Moderately ripe mangoes were washed, peeled, sliced, dried in a heat pump dehumidifier dryer at the temperature of 40°C for 3 hours and ground to produce MF. The MF was used at different levels of 10, 15, 20 and 25% to substitute the CF for biscuit formulations. The developed biscuits were subjected to physico-chemical, microbiological and sensory quality evaluation. Physico-chemical analyses revealed that there were no significant differences ($p < 0.05$) in relation to moisture content in all biscuit samples made with different percentage of MF. The average moisture content of the biscuits was 6.93%. The protein, fibre, fat, ash and vitamin C content increased with increase in the proportion of MF level, with the 20% MF level having the values of 8.11%, 2.33%, 15.90%, 2.71% and 23.50 mg/100 g, respectively. The highest protein and fibre content were found in biscuit sample supplemented with 25% of MF; this biscuit sample was not significantly different from the sample supplemented with 20% MF. The soluble carbohydrate contents were highest for all biscuit samples in terms of all the physico-chemical parameters. Biscuits supplemented with 25% MF had the highest vitamin C content (24.61 mg/100 g) and this sample was not significantly different from the biscuit supplemented with 20% MF. The pH values of the biscuit samples decreased significantly ($p < 0.05$) with the increase in MF supplementation but they were > 6.0 being considered non acidic food product. Microbiological analysis indicated that there was no total plate count observed in the tested samples. Sensory evaluation showed that supplementation of CF biscuits with MF up to 20% did not significantly ($p < 0.05$) affect the colour, texture, crispiness and taste except aroma when compared with the control sample. The supplementation of CF with MF had been successful for the formulation of biscuits with better physico-chemical and organoleptic qualities within the universal standards for biscuits.

Key words: Biscuits, Cassava Flour, Mango Flour, Quality Characteristics, Supplementation.

* To whom correspondence should be addressed : nilu_gin@yahoo.com

1 Department of Agricultural Chemistry, Faculty of Agriculture, Eastern University, Sri Lanka

2 Department of Agricultural Chemistry, Faculty of Agriculture, Eastern University, Sri Lanka