



Section B

201/B

**Nutritional analysis and shelf life evaluation of cassava flour biscuits
supplemented with mango flour**

S E Nilugin* and T Mahendran

Department of Agricultural Chemistry, Eastern University, Chenkalady.

Research was conducted to develop cassava flour biscuits supplemented with mango flour and to assess the quality of biscuits during storage. Cassava roots were processed into flour using a standard method. Moderately ripe mangoes were washed, peeled off, sliced and dried in a heat pump dehumidified dryer at the temperature of 40°C for 3 hours and ground to produce mango flour. The mango flour was used at different levels, namely 10, 15, 20 and 25 %, to substitute the cassava flour in the preparation of the biscuit formula. Biscuits developed accordingly were packed in sealed laminated packaging material lined with an aluminum foil and stored under ambient conditions of average temperature at 30±1°C and relative humidity (RH) of 75-80% for evaluation of the shelf life.

Biscuits were subject to nutritional, microbial, sensory and shelf life evaluations at two week intervals for the entire storage period of 12 weeks. Among the treatment, the biscuits supplemented with 20 % mango flour (T₄) had the highest value of protein, fat, ash and soluble carbohydrate of 8.11, 15.90, 2.71 and 64.0 % respectively, and the fibre content was found to be 2.33 % at the end of 12 weeks of storage. However, the moisture content of these biscuits (T₄) increased from 4.02 to 4.21 % which is within the acceptable range for long term storage. The findings of microbial studies showed that there was no growth of microorganisms in the biscuits. The results of organoleptic assessment revealed that there were significant differences between the treatments in terms of sensory attributes. Cassava biscuits supplemented with 20 % mango flour showed the best overall acceptability compared to the other combinations and the control. From the results of quality assessments, the cassava flour biscuits supplemented with 20 % mango flour was found to be superior and could be stored at ambient conditions of 30±1°C and 75-80% RH for a minimum period of 12 weeks without any significant changes in the quality attributes. The supplementation of cassava flour with mango flour could be successfully used for the formulation of biscuits of good quality and with characteristics within the standards for biscuits.