Utilization of Embul Banana (*Musa* spp.) Variety for Preparation of Flour as a Food Ingredient

P.N.T. De Zoysa[1], H.P.S. Senarath[1]* and R.M.N.A. Wijewardhana[2]

[1]*Department of Food Science and Technology, Faculty of Livestock, Fisheries, and Nutrition, Wayamba University of Sri Lanka, Makandura, Gonawila (NWP) 60170, Sri Lanka*
[2]*National Institute of Post-Harvest Management, Anuradhapura 50350, Sri Lanka*
**samanthi123@hotmail.com*

Embul banana (*Musa* spp.*)* is the most cultivated banana variety in Sri Lanka and the post-harvest loss is nearly 40% per annum. Therefore, this study was conducted to develop flour using embul banana while optimizing the keeping quality. Banana flour is a gluten-free alternative to wheat in bakery products. Preliminary studies were done to identify the optimum maturity level of banana for flour production. Embul banana flour was prepared using unripe mature banana with a mixture of citric acid and sodium metabisulphite (SMS) to optimize the keeping quality of banana flour. The recovery percentage of flour was determined according to peel and flesh weight. The antimicrobial property of flour was tested using the total plate count and yeast and mold count. The proximate composition flour formulations were tested. The results revealed that the recovery percentages of flour with peel and flesh were 15.20% and 21.68%, respectively. Yeast and mold growth was significantly (p<0.05) controlled by adding SMS (0.2%). The selected formulation of flour contained, carbohydrates (82.21%), crude fiber (5.77%), crude protein (2.50%), crude fat (0.74%), moisture (6.60%), and ash (2.21%). The color change of banana flour during storage was minimized using anti-browning agents. Water activity and moisture content of flour were slightly changed (0.45–0.59 and 4.67–7.23%, respectively) during the storage period. The particle size of flour (106–150 µm), pH (5.3–5.4), water holding capacity (167–170%) and oil holding capacity (72–75%) were measured in the selected banana flour. Mature unripe embul banana can be utilized in flour production as a gluten-free alternative and a potential ingredient in the food industry.

Keywords: Anti-microbial property, Embul banana flour, Gluten free, Keeping quality