225/B

Proximate composition and mineral assay of flour obtained from Gahala (*Colocasia esculenta*), Kiriala (*Xanthosomasagittifolium*) and Innala (*Plectranthusrotundifolius*)

H.A.C.O. Hettiarachchi,* K.D.P.P. Gunathilake, A.M.M.U. Adikari, and V.P.N. Prasadi

Department of Food Science and Technology, Faculty of Livestock, Fisheries and Nutrition, Wayamba University of Sri Lanka, Makandura, Gonawila, (NWP), Sri Lanka

Gahala(*Colocasia esculenta*), Kiriala(*Xanthosomasagittifolium*), and Innala (*Plectranthusrotundifolius*) are three underutilized yam varieties in Sri Lanka, which are having a good potential to be utilized for various aspects in food industry. Therefore, research was conducted to analyze proximate composition and selected minerals in flour obtained from these three yam species.Flour samples were prepared from *C. esculenta*, *X. sagittifolium*and *P. rotundifolius,* and the flour yield was determined. Proximate composition was determined using AOAC methods and mineral element composition (Calcium, Iron, Zinc, Cadmium, Lead) was determined using Atomic Absorption spectrophotometry.

The flour yield of three yam varieties was different. Kiriala had the best flour yield (20.7%) and Innala gave the lowest flour yield (11.39%). the flour yield of Gahala was 14.5%. The highest moisture content (80.46±1.41%) was recorded for Gahala when compared with Kiriala (69.77±1.09%) and Innala (77.91±1.06%).The protein content of Innala (9.63±0.95%) was significantly higher than that of Kiriala (5.39±1.13%)and Gahala (3.52±0.23%). The crude fat content of the three yam flours ranged between 0.006±0.003% to 0.570±0.358%. Innala flour had the lowest fat content whereas Kiriala flour had the highest. A considerable amount of crude fiber was present in Kiriala flour (13.75±9.73) while Gahala flour (11.25±3.33) and Innala flour (11.35±69.68) exhibited lower amounts. The ash content of yam flours ranged between 2.08±0.57% to 3.67±0.01%. Calcium was the principal mineral in each type of yam flour. The highest Calcium content was recorded for Gahala flour (0.23±0.01%). Nutritionally important Calcium rich flour can be utilized in food industry as a good source of Calcium. Iron ranged between 0.007±0.00% to 0.009±0.00% and Zinc ranged between 0.002±0.00% to 0.009±0.00% for the three yam flours. Cadmium and Lead were not detected in each of tuber flours, revealing that there are no potential toxicities of heavy metals. Hence these underutilized yam varieties can be effectively utilized in various processing activities of food industry and also to incorporate into other products.

Keywords: Flour, yams, Proximate composition

osh0626@gmail.com TP: 0717953755