404/D

Soluble, insoluble and total dietary fiber content of selected banana varieties (*musa* species) from Sri Lanka

R Sutharsana, S A S Jayawardana, A A W Ratnayaka, D M W D Divisekera, J K R R Samarasekera* and J Gooneratne
Industrial Technology Institute (ITI), 363, Bauddhaloka Mawatha, Colombo 07

Dietary fiber plays an important role in human health and nutrition. The soluble fraction of the dietary fiber has cholesterol lowering properties while the insoluble fraction plays a role in bowel movement. Banana is commonly consumed by Sri Lankans.The main objective of this study is to quantify the soluble, insoluble and total dietary fiber of four selected banana varieties namely, *Kolikuttu, Nadee ambul, Seeni parakum* and *Seeni*. The samples were collected from the Department of Agriculture, Giradurukotte. Moisture content of all banana varieties was determined following AOAC (2000) method. Insoluble (IDF), soluble (SDF) and total (TDF) dietary fiber contents of de-sugared sample were measured by modified Faulks and Timms method. This method involves the enzymatic hydrolysis of starch with termamyl and amyloglucosidase and gravimetric separation of Insoluble and soluble dietary fiber. Monomer sugar content was quantified from ethanol: water solution (80:20, v/v) fraction by phenol-sulphuric acid spectroscopy method using glucose as standard.

The moisture content of *Nadee ambul, Kolikottu, Seeni parkum* and *seeni* was recorded as 71.34%, 69.67%, 63.69% and 65.90% and monomer sugar content was as 5.33(±0.93)%, 8.70(±0.85)%, 4.59(±0.22)% and 3.37(±0.09)%, respectively.There was no significant difference ($p>0.05$) between *Nadee ambul seeni* and *seeni parakum* in monomer sugar content but significant difference ($p<0.05$) was observed for *Kolikottu*. *Seeni* is rich in TDF at 6.82(±0.77)% on wet basis and 20.01(±2.27)% on dry basis while other varieties, *Nadee ambul, kolikottu* and *seeni parakum* are at 3.94(±1.26)%, 3.55(±0.74)% and 3.61(±0.37)% on wet basis and 13.76(±4.43)%, 11.71(±2.45)% and 9.93(±0.10)% on dry basis respectively. IDF content of *Nadee ambul, Kolikottu, Seeni parkum* and *seeni* was as 2.67(±0.91)%, 2.41(±0.86)%, 2.73(±0.07)% and 4.58(±0.87)% on wet basis and 9.32(±3.19)%, 7.96(±2.85)%, 7.53(±0.21)% and 13.43(±2.55)% on dry basis respectively and SDF content was as 1.27(±0.35)%, 1.14(±0.12)%, 0.87(±0.04)% and 2.24(±0.09)% on wet basis and 4.44(±1.23)%, 3.75(±0.39)%, 2.40(±0.11)% and 6.58(±0.27)% on dry basis, respectively. There was a significant difference ($p<0.05$) between *seeni* and other studied varieties in TDF and no significant difference ($p>0.05$) between *Nadee Amvul, Kolikottu* and *seeni parakum.* It was evident that *seeni* was rich in both SDF and IDF when compared to other varieties and *Kolikottu* was rich in monomer sugars. As a high amount of dietary fiber has a positive correlation with prebiotic effect, further studies will be carried out.

Keywords:Dietary fiber, monomer sugar, banana and *Musa* species

Acknowledgement: Indian- Sri Lankan Inter governmental Science and Technology Cooperation Programme

radhika@iti.lk Tel: 0714433815