634/E2

Evaluation of physico-chemical and sensory properties of coconut residue flour

L L W C Yalegama[1]* and G D J Madubhashinie[2]
[1]*Coconut Processing Research Division, Coconut Research Institute, Lunuwila*
[2]*Department of Food Science & Technology, Wayamba University of Sri Lanka*

A study was conducted to evaluate physico-chemical and grinding characteristics of coconut residue flour. Coconut residue flour is the by product of dry process of virgin coconut oil. The powder is off white in colour and has a good smell. Proximate composition of coconut residue flour was moisture 3.2%, ash 7.3%, protein 22.4%, sugar 20.2%, fat 10.2%. crude fibre 16.3% while that of wheat flour was moisture 7.0%, ash 0.6%, Crude protein 14.5%, Total sugar 2.3%, crude fat 1.23%. The results indicated that coconut flour contains higher protein and crude fibre contents than the wheat flour. Coconut flour has a higher water absorption capacity (6.9 g/g – 7.57 g/g) when compared with that of wheat flour (2.35-2.87g/g). The water absorption capacity did not change with time significantly. Oil absorption capacity of coconut flour is similar to that of wheat flour (1.98-2.36 g/g) and it did not change with time.

The coconut residue was ground using three types of mills into a fine powder to find out the suitable grinding system for coconut residue. The selected mills were local flour mill (LFM), mill fabricated at CRI (CRI M), and hammer mill (HM). The size distribution of the flour was determined and found that the LFM gave larger particle sizes (70.57% retained in 425µm sieve) while CRIM and HM retained 24.54% and 25.30% in 425µm respectively indicating that they produced finer particles. LFM was not efficient for grinding the coconut residue due to its high fibre content. However, CRIM and HM gave better particle size distribution. HM was the best having approximately 75% of the particles distributed in 300-150µm range. The mills used in the study did not produce satisfactory milling properties, hence need further investigations.

The chemical composition did not vary with different particle sizes. However, moisture content of all the fractions was higher than the whole coconut flour due its hygroscopic nature. The other components are within the range of original powder indicating that the composition does not vary with the size of the particles.

*cyalegama@yahoo.co.in Tel: 031-2255300