

Proximate composition, mineral content and functional properties of Sabah tarap (artocarpus odoratissimus) flour

ABSTRACT

Tarap fruit is one of the native and most delicious tropical fruit that can be found extensively in Borneo, particularly in Sabah, Malaysia. In this study, tarap flour was produced and proximate analysis; mineral content (iron, potassium, calcium and sodium) and functional properties (particle size distribution, bulk density, color, water absorption, oil absorption, swelling power, foaming and emulsion capability) of the flour were determined. Results obtained showed that tarap flour consists of 10.29% moisture content; 6.58% protein, 2.84% ash, 2.65% crude fiber, 1.89% fat, and 75.75% carbohydrate. The mean particle size distribution of tarap flour was ranged from 125 μ m to 63 μ m (42%) with bulk densities of 0.51g/ml. The Hunter Lab results were 70.64, 5.62 and 22.02 for L (lightness), a* (redness) and b* (yellowness), respectively. The water and oil absorption capacity of the flour were slightly low, 0.92g/g and 0.54g/g, respectively. Swelling power results (10.0%, 19.4%, 23.1% and 27.7%, respectively) showed that it was directly proportional to the temperature increment (60oC, 70oC, 80oC, and 90oC). Tarap flour showed low gelling power by only formed a stable gel at 18% as the least gelation concentration. The foaming and emulsion capability of tarap flour determined had a low percentage capability (1.67% and 17ml/g, respectively) whereas these properties play significant role in many food systems. The results obtained are important in determining the characteristics of the tarap flour as a new source of food ingredients and this could encourages full utilisation of local fruit in producing food with good properties.