PHYSICOCHEMICAL PROPERTIES OF THE TERAP FRUIT (*ARTOCARPUS ODORATISSIMUS* BLANCO)

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ABSTRACT

The genus *Artocarpus* belongs to the family of Moraceae with *Artocarpus altilis* (Breadfruit), *Artocarpus integer* (Chempedak) and *Artocarpus heterophyllus* (Jackfruit) being the common species in this genus. *Artocarpus odoratissimus* also known as Terap in Sarawak or Marang in English is found to be indigenous to the Borneo Island. This fruit is presently also being introduced to other Southeast Asian countries such as Philippines and Thailand. Terap is well-known for its sweet tasty flesh which is eaten raw and the seeds are normally steamed and used in some local dishes. The fruits are highly valued as a potential food source for local communities. However, their nutritional attributes and phytochemical properties are not fully explored particularly in Sarawak, Malaysia. Thus, the present study aims to evaluate the nutritional compositions and phytochemical properties of the *A. odoratissimus* fruit from Sarawak. Proximate analysis results obtained showed that the flesh had 75.90±0.75% moisture, 82.70±0.36% carbohydrate, 14.59±1.49% protein, 3.87±0.42% ash and 0.03±0.01% crude fiber. Terap fruit also possessed good mineral compositions with the trend of K > Ca > Na > Mg > P > Cu. Potassium was the major mineral component of the fruit ranging between 1237.16-1654.17 mg/100g. Terap is the sweetest fruit among all other *Artocarpus* species as fructose was found to be the most abundant sugar in the flesh (26.7±0.70 g/100 g) followed by glucose (25.38±0.45 g/100 g) and least amount being sucrose (4.38±0.21 g/100 g). Terap flesh was found to be an excellent source of vitamin B complex, with thiamine content (11.07±0.31 mg/100 g) being the highest. For the phytochemical attributes in Terap flesh, total phenolic content was 2.11-2.70 mg GAE/g, total flavonoid was 0.75-1.44 mg QUE/g and total antioxidant activity was 187.25-189.48 mg/mL. The present study supports the ethno-botanical uses of Terap by the local communities and the study sheds initial evidence on the potential for this fruit to be further explored and developed by nutraceutical and pharmaceutical industries, leading to enhancing the downstream application and product development of this indigenous fruit crop.

Keywords: Antioxidant, *Artocarpus odoratissimus*, indigenous, terap, marang