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### A study on selected nutrients, antioxidant activity and sensory qualities of the aqueous flower extract of *Beli* (*Aegle marmelos*)

T.C Sujeewanie<sup>1</sup>, T.S Suresh<sup>1</sup> and S. Hewaratne<sup>2</sup>

<sup>1</sup>Department of Biochemistry, Faculty of Medical Sciences, University of Sri Jayewardenepura, Nugegoda

<sup>2</sup>Animal House, Faculty of Medical Sciences, University of Sri Jayewardenepura, Nugegoda

The present study was carried out to investigate selected nutrients, antioxidant effect and sensory qualities of the aqueous flower extract of *Aegle marmelos* (*Beli mal* drink). Antioxidant activity of the above extract was measured *in vitro* and *in vivo*. Inhibition of 1,1-diphenyl-2-picrylhydrazyl (DPPH) was determined in the *in vitro* study. Thiobarbituric acid reactive substances (TBARS) assay was employed to determine the *in vivo* activity of this extract in Wistar rats, 6 months of age. Liver toxicity was determined by analyzing the concentrations of Aspartate and Alanine aminotransferases (AST and ALT). A pilot study was carried out on sensory qualities of the traditional and commercially available preparations of *Aegle marmelos* flower.

There were 5.6±0.43 g of digestible carbohydrates, 8±0.37 g of soluble dietary fibre, 8.1±0.39 g of ash and no protein per 100 g of the freeze dried aqueous flower extract. The total polyphenol content was 34.32±2.2 g/100 g. Fructose, saponins and flavonoids were also present. The freeze dried extract exhibited DPPH scavenging activity with EC<sub>50</sub> value of 55.0±2.2 µg/ml and the EC<sub>50</sub> value of L-ascorbic acid was 7.8±0.3 µg/ml. The serum TBARS value of the test group of Wistar rats given the aqueous extract for 4 weeks, was decreased by 36.02±5.8 %, when compared with the control group fed with distilled water. The TBARS value of the test group fed with the flower extract was significantly lower than that of control group (p=0.0001). There were no significant differences in the AST and ALT levels of the 2 groups at the end of 4 weeks, (p= 0.474 and p=0.127 respectively). Sensory evaluation was done by giving the traditional and commercial preparations, to 10 volunteers on two consecutive days. There was a significant increase in the mean overall score of the traditional preparation (p=0.004), when compared with the commercial preparation. Majority of participants (60 % - 80 %) reported a cooling effect through out 30 minutes after drinking the traditional preparation, whereas only 50 % commented the cooling effect that lasted only for 10 mins after drinking the commercial preparation. Fifty percent of volunteers reported that a feeling of relaxation of muscle existed even at 30 mins after drinking the traditional preparation and it was absent with the commercially available preparation. Considering the above facts, *Beli mal* drink has the potential to be developed as a nutraceutical beverage.

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