Abstract No: 360 (Poster) *Food, Nutrition and Livestock*

Compositional analysis of tropical almond (*Terminalia catappa* L.) and development of a non-dairy milk product

S. Madarasinghe and P. Arampath*

Department of Food Science and Technology, Faculty of Agriculture, University of Peradeniya, Sri Lanka
**pcarampath@gmail.com*

Tropical almond (*Terminalia catappa* L.), locally known as *kottamba*, is a multipurpose species and *kottamba* kernels have nutritional properties which confer health benefits. This study was conducted to determine the nutritional composition of *kottamba* kernels and to develop a non-dairy milk from *kottamba* kernels. Presently, the consumer demand for plant-based milk products is increasing as a healthier alternative to dairy products, especially among lactose-intolerant consumers.

Physical properties of the fruit, proximate composition and mineral contents in *kottamba* kernels were determined. *Kottamba* kernel milk was extracted by blending kernels that were soaked overnight and blanched (water: kernels ratio 2:1) and the resulting liquid fraction was separated for analysis. However, this soaking step caused some negative impacts on the physical, sensory and nutritional properties of the kernel milk. Pasteurised and sterilised *kottamba* milk products were developed and subjected to sensory analysis and a storage study.

The moisture content of kernels was 5.35 ± 0.29%. The proximate composition (in % dry basis) of *kottamba* kernels was crude fat 50.09 ± 0.15, crude protein 32.30 ± 1.10, carbohydrate 5.13 ± 0.84, crude fibre 1.81 ± 0.21 and ash 5.31 ± 0.24. Mineral contents (μg/g) in the kernel were P 2200 ± 1.22, Mg 400 ± 2.01, Ca 320 ± 1.67, Cu 81 ± 1.36, Fe 58 ± 1.33 and Na 13.61 ± 1.82. Bottled *kottamba* kernel milk with 3% sugar was preferred over 6% and 9% sugar according to the sensory analysis based on a ranking test ($P < 0.05$). The shelf life of pasteurised and sterilised bottled *kottamba* kernel milk was 2 and 4 weeks respectively. Fat (7.78%), protein (6.46%), carbohydrates (8.03%) and minerals (P, Mg and Fe) in *kottamba* kernel milk were significantly higher than in dairy milk ($P < 0.05$). Xanthan and guar gums at a 1:1 ratio was the best combination of stabilisers with the lowest creaming index value in the commercial beverage due to their synergistic effect. In conclusion, *kottamba* kernels are rich in nutritional value and possess a high potential for production of non-dairy milk at a commercial scale.