Development and evaluation of quality of Biscuit made up with Gram flour, Wheat flour and *Centella asiatica*

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ABSTRACT

The study was carried out to improve the utilization of gram flour and *Centella asiatica* through the development of value added products such as gram flour, wheat flour and *Centella asiatica* composite biscuits. Gram flour and wheat flour were supplied from the market as a processed flour. *Centella asiatica* were obtain from the home garden and it was wash well to remove impurities. Then it was dried under the sun light for several days, grind as a powder and sieved well to produce *Centella asiatica* powder. Then the *Centella asiactica* powder were packed in air tight polythene bag and stored under the refrigerated conditions until further use. The wheat flour, gram flour and *Centella asiatica* composite biscuit was prepared according to the standard procedure at the faculty of technology Eastern University Sri Lanka.

There were six treatments of biscuits prepared with different combinations of wheat flour, gram flour and *Centella asiatica* powder. T1 – wheat flour 100g, T2 – wheat flour 80g, gram flour 10g, *Centella asiatica* powder 10g, T3 – wheat flour 70g, gram flour 20g, *Centella asiatica* powder 10g, T4 – wheat flour 60g, gram flour 30g, *Centella asiatica* powder 10g, T5 – wheat flour 50g, gram flour 40g, *Centella asiatica* powder 10g, T6 – wheat flour 40g, gram flour 50g, Centella asiatica powder 10g. physical (diameter, thickness and spread ratio), chemical (moisture, ash, fat and protein contents) and sensory evaluation were done for each treatment of the biscuits.

The physical parameters of biscuits such as diameter and thickness were decreased gradually from 46.78 – 44.71mm and 11.20 – 8.6mm and spread ratio was increased gradually for each treatment from 6.96 – 10.57 respectively. The moisture, ash, fat and protein content increased from 1.44 – 2.47, 2.14 – 4.22, 9.30 – 13.18 and 6.96 – 10.57 respectively. Sensory evaluation was done by using 25 members of panel. That data was described by graphically. According to the sensory data, taste, color, texture, aroma, and overall acceptability were checked. Most people liked the color of treatment 4 (T4) the most, 19%. The color of those treatments was better than other samples. Treatment 4 (T4) and treatment 3 (T3) had the highest responses to the aroma among all the treatments, at about 20% and 18%, respectively. Most of the people liked the taste of T4 treatment; it was 19%. Not only that, but T1 treatment received an 18% response for taste. Texture is another important factor, which

includes sensory analysis. Treatment 4 (T4) texture was the best and received the most responses out of all the samples. It was 21%. According to the sensory data evaluation, T1 (treatment 1) also had 20% of responses among other treatments. Finally, overall acceptability was analyzed and got the 20% highest responses for treatment 4 (T4). Treatment 1 (T1) and treatment 3 (T3) got 18% and 17% responses, respectively. All the evaluations were conducted on the fresh samples only.

Based on the quality characteristics of wheat flour, gram flour and *Centella asiatica* composite biscuit the 30g of gram flour (T4) contained biscuit has the good score in organoleptic points of view and acceptable nutritional quality compared to other combinations.

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