

## FORMULATION OF A COOKIE USING COMPOSITE FLOUR BASED ON COWPEA, KOLLU, RICE AND WHEAT FLOUR

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Modern consumers demand food that features two main properties: the first one deals with convenience whereas as the second is connected to traditional nutritional aspects of the food expected from its regular ingestion. This study seeks to investigate the potential of Cowpea flour, Kollu flour, rice flour and wheat flour in cookie making which could be used as a meal replacement. Cookies were prepared according to the factorial experimental design. Four flour samples (T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, T<sub>4</sub>) were prepared. Sensory evaluation was carried out for all four (T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, T<sub>4</sub>) samples. The most preferred sample (T<sub>1</sub>) was selected from the sensory evaluation. This contained, 25 g cowpea flour, 15 g kollu flour, 20 g rice flour (Pachchaperumal), 40 g wheat flour, 35 g sugar, 40 g margarine, 10 ml egg and 10 ml milk, 1g salt and 2 g baking powder.

All the tests were carried out for the selected sample from the sensory evaluation. The proximate analysis of the sample (T<sub>1</sub>) revealed that the selected composition has 3.18% of mixture content, 12.05% of protein, 16.81% of total fat, 62.40% of carbohydrate, 3.26% of fibre and an energy content of 449.09 kcal g<sup>-1</sup>. Cookie was rich with minerals such as Mg (711.84± 0.46 ppm), Ca (46.60 ± 0.008 ppm), Na (512.564± 0.06 ppm), Fe (39.169± 0.0098 ppm). According to the fatty acid profile analysis, lauric, myristic, palmitic were present with 98% probability. Oleic, stearic, linoleic acids were identified with 99% probability. Based on the DPPH radical scavenging test for the selected cookie (T<sub>1</sub>) methanol soluble fraction exhibited the lowest ( IC<sub>50</sub> value, i.e., 14.74 ± 0.02 mg /ml while the water soluble fraction IC<sub>50</sub> values,( i.e., 16.93 ± 0.04). Total phenolic content of the extract was 645.30 µg GAE/mg extract. Yeast and mould count of the tested sample were too low than standard level (1.0x10<sup>-1</sup>). Moisture content variation was very less during three months' time period and the results of peroxide value indicated that there was high quality fat contained in the food and the product was not oxidized during three months' time period. The product also showed a minimum shelf life of 12 weeks.

Keywords: Composite flour, Cookie, Antioxidants, Fatty acid, minerals

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