

Evaluation of Defatted Coconut Testa Flour Formulation for Selected Sri Lankan Traditional Foods

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Coconut testa is the major by-product of Virgin coconut oil and DC processing. The dried brown testa was gone through the cold press extraction process to collect the defatted residue and it ground into fine flour. This research aimed to evaluate the best testa flour formulation for two Sri Lankan traditional food items, *roti* and *pittu* and to determine their nutritional properties. Food items were made incorporating 10%, 20%, and 30% of testa flour (TF), and their sensory properties were evaluated using 25 untrained panelists through a five-point hedonic scale. Proximate qualities of selected *roti* samples, functional properties of selected flour blend were compared with control treatment (100% wheat flour). The moisture content (4.04 ± 0.12 %) and free fatty acid content (1.33 ± 0.018) of testa flour were the initial quality TF. All sensory attributes (taste, texture, appearance, smell, overall acceptance) were affected significantly ($p < 0.05$) for testa flour incorporation into the wheat flour-based *roti*. There was no significant difference ($P > 0.05$) between 10% and 20% TF incorporation for all sensory attributes. Testa flour incorporation (10% and 20%) were affected significantly ($p < 0.05$) for the taste and texture of *pittu*. The testa flour can be successfully incorporated into refined wheat flour to make *roti* and *pittu* up to a level of 20% to enhance nutritional qualities with acceptable sensory attributes. Proximate composition of selected (20%) testa flour incorporated *roti* and control *roti* (wheat flour 100%) not showed significant difference ($p > 0.05$) in moisture (Oven dry method), fat (Soxhlet), carbohydrate and ash content between testa flour *roti* and wheat flour *roti*. Incorporation of 20% of testa flour affected significantly ($p < 0.05$) for the fiber (Weende) and protein content (kjeldhl), of two treatments. The 20% TF incorporation has increased the fiber level of *roti* $1.81 \pm$ to $7.04 \pm$ with the quality of proteins from $12.43 \pm$ to $16.06 \pm$ compared to the control.

Keywords: Testa flour, Wheat flour, Sri Lankan traditional foods, Dietary fiber, Gluten