

## PDF - DEVELOPMENT OF PRODUCTS FROM SORREL - researchcub.info ABSTRACT

The objectives of the study were to develop products from sorrel calyces, leaves and seeds, evaluate the products for nutrients, phytochemicals, antinutrients, food toxicant, physicochemical, microflora, sensory, storage properties and compare the products produced with existing products. Dry red sorrel calyces, leaves and seeds were used for the study. Pilot study was carried out to standardize recipe used for the formulation of the products. The products developed were jelly, cordial juice, food condiment, food seasoning and oil. Sorrel jelly and cordial juice were produced from sorrel calyx using standardized recipe and procedure by International Jellies and Preserved Association. Sorrel food condiments were produced from fermented sorrel seeds and sorrel oil was produced from sorrel seed. Sorrel food seasoning was produced from sorrel leaf.

The nutrients, phytochemicals, antinutrients, food toxicant and sensory properties of the products were determined using AOAC methods. The sorrel seed oil was evaluated for physico-chemical properties using standard procedures. Similar products (grape jelly, black currant cordial juice, roycos food condiment, rosemary seasoning and groundnut seed oil) by flavour, colour and texture used by consumers served as control for evaluation of the products developed. The products were kept at room temperature  $28 \pm 2^\circ\text{C}$  to determine the keeping qualities for sixteen (16) months. Sorrel jelly had significantly higher ( $p < 0.05$ ) crude protein, crude fat, ash, calcium (Ca), iron (Fe), phosphorus (P), sodium (Na), copper (Cu) and  $\beta$ -carotene. Sorrel jelly contained crude protein (5.51%), Fe (15.43mg), P (30.57mg), Cu (54.00g), ascorbate (18.10mg) and  $\beta$ -carotene (22.50g). Sorrel cordial juice had significantly higher ( $p < 0.05$ ) crude protein, ash, Ca, Fe, P, Zn, Cu, ascorbate and  $\beta$ -carotene. The cordial juice from sorrel calyx had significant amount of crude protein (18.43%), carbohydrate (68.77%), Fe (50.66mg), P (48.40mg), Cu (56.66g), and ascorbate (36.10mg). Sorrel seasoning had significantly higher ( $p < 0.05$ ) fat, ash, crude fibre, Ca, P, Na, Zn, Cu and  $\beta$ -carotene.

The seasoning from sorrel leaf had significant quantity of crude protein (11.82%), carbohydrate (67.12%), Ca (414.00mg), P (841.66mg), ascorbate (39.53mg) and  $\beta$ -carotene (38.20g). Sorrel food condiment had higher ( $p < 0.05$ ) protein, fat, crude fibre, P, Zn, Cu, ascorbic acid and  $\beta$ -carotene. The sorrel condiment was rich in crude protein (30.67%), carbohydrate (60.78%), Fe (16.70mg), P (787.34mg), ascorbate (40.27mg) and  $\beta$ -carotene (38.40g). The oil had higher ( $p < 0.05$ ) relative density ( $0.916^\circ\text{C}$ ), refractive index ( $1.475^\circ\text{C}$ ), saponification value (189.00mgKOH/g), iodine value (103.00mg) and  $\beta$ -carotene (14.20g, respectively). Sorrel products developed contained significant quantities of flavonoids. There were generally traces of cyanide and phytate except in the seasoning.

Tannins were low (0.38-2.40mg) in all products except sorrel juice and roycos food condiment.

The sorrel products were preferred to the standard products except sorrel oil. The products

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