

VALORISATION, NUTRITIONAL AND PHYTOCHEMICAL ANALYSIS OF CORN SILK POWDER

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ABSTRACT

Agricultural food waste happens on a large scale in par with the agricultural produce that is being utilized, triggering environmental, economic and nutritional perils. Agricultural food waste primarily embraces skins, rinds, stalks, shoots, seeds, husks, coats, and residues of vegetables and fruits or their plants. These wastes which host treasure of nutrients are habitually thrown off in lands causing environmental hazards, at times used as fodder and occasionally to make manure. In this line, this research was carried out to provide an insight to how corn silk, an agro-food waste can be utilized as a value enhancer in muffins, a commonly consumed bakery product. Corn silk was powdered and functional properties were assessed. The corn silk powder was substituted in the proportion of 25%, 50% and 75% in wheat flour and muffins were formulated. The formulated variations of value-added muffins were subjected to sensory evaluation and the highly accepted variation of muffins (50% incorporation of corn silk powder) was further subjected to analysis of nutrients and phytochemicals. The results of functional properties showed that corn silk powder along with gluten rich ingredients will be suitable for bakery food formulation. The results of nutritional analysis showed the presence of higher proportion of protein (7.6g), fibre (6.4g), ash (1.6g), calcium (200mg), potassium (317mg), copper (1.2mg) and iron (0.88mg) in the 50% incorporation of corn silk powder muffins. The presence of phytochemicals viz. polyphenols, flavonoids, tannins and saponins was also noted proving that corn silk powder addition to any food product will be viable for consumption as well as nutritionally adequate.

KEYWORDS Antioxidants, Corn Silk, Muffins, Phytochemicals