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Formulation of a curry powder enriched with bioactive compounds and micronutrients

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The composition of control (traditional) curry powder is coriander seeds (56.27%), fennel seeds (13%), cumin seeds (24%), cinnamon (0.03%), curry leaves (0.4%), garlic (0.7%), fried mung beans (1.3%), fried white rice (1.3%), pepper (2%), fenugreek seeds (1%). For enrichment process, dried powders of *Sesbania grandiflora* (Agathi/ Kathurumurunga) flower, *Sargassum polycystum* (a brown seaweed), *Musa sp.* (banana) pseudo stem, *Pleurotus ostreatus* (American Oyster mushroom), *and Nigella sativa* (black cumin) seeds were incorporated into the control curry powder mixture and formulated the new curry powder mixture. The composition of newly developed curry powder was determined conducting sensory evaluation sessions according to the Taguchi's L8 design. Control and value-added curry powders were analyzed for their proximate composition (moisture, protein, fat, carbohydrate, ash and crude fiber), antioxidant activity, total phenolic content (TPC), fatty acid profile, and mineral profile following the standard procedures of AOAC. Moisture, crude fiber, protein, ash, total phenolic contents and antioxidant capacity were significantly ($p<0.05$) increased in the new product. Carbohydrates and total fat contents were significantly decreased in new product. Ca, K, Na, Zn, Cu, Pb, and As contents were significantly ($p<0.05$) increased in the new product than in control. New product contained 17.19% of polyunsaturated fatty acids, and 64.15% of monounsaturated fatty acids. Linoleic acid, palmitoleic acid, 1-octadiene-3-ol, 3,7-dimethyl esters were increased while oleic acid content was decreased in new product than compared with control. Furthermore, Cis-11,14-eicosadienoic acid methyl ester polyunsaturated fatty acids and beta sitosterol had newly appeared in the new product. Curry powder is a popular flavor enhancer and it has a good potential to enrich with bioactive compounds and micronutrients due to its regular consumption in constant amounts. Incorporation of certain well-known raw materials into the curry powder may help to increase the amount of bioactive compounds that positively react to enhance the functional properties of the product. In conclusion, adding dried powders of the above mentioned plant materials to curry powder has enhanced its functional properties.

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