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Development of a pasta product with Sri Lankan “Kirikawadi” cassava cultivar

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Pasta is a cereal based food product consumed worldwide. Conventional pasta products are produced with durum wheat semolina, which is more expensive than normal wheat flour, though it constitutes only 5% of the world wheat production. Therefore, to meet the emerging demand for pasta products it is necessary to innovate novel non-conventional ingredients for pasta production. Cassava flour is a low cost food source in many developing countries and it has the potential to be used in the food industry as a replacement of wheat flour. Thus, this study has focused on the development of a pasta from “Kirikawadi” Cassava (*Manihot esculenta*) cultivar and the evaluation of its properties. Three different ratios (90:10, 80:20 and 70:30) of wheat flour: cassava flour composite pasta dough and wheat flour pasta dough (as control) were prepared with constant levels of water and salt. The dough samples were kneaded, rested, sheeted, and cut into *Tagliatelle* shape. Raw pasta was oven dried at 121°C for 30 min, cooled, packed and stored at room temperature until further analysis. Organoleptic characteristics of pasta including color, appearance, taste, flavor, aroma, and overall acceptability were evaluated by a panel of 30 semi trained panelists using the 9 point hedonic scale. The pasta prepared with 70:30 ratio of wheat and cassava flour was selected as the optimum formula. The selected sample and the control sample were subjected to proximate analysis, color analysis, cyanide determination and cooking quality characterization.

The moisture (%), ash (%), crude protein (%), crude fat (%), crude fiber (%) and carbohydrate content (%) for the optimum formula were 6.77 ± 0.16 , 2.23 ± 0.01 , 8.63 ± 0.11 , 6.90 ± 0.08 , 9.23 ± 0.08 and 66.24 ± 0.13 respectively and for the control sample were 3.31 ± 0.18 , 2.28 ± 0.02 , 10.25 ± 0.24 , 7.90 ± 0.30 , 7.12 ± 0.14 and 69.14 ± 0.24 . The water absorbance index, cooked weight, swelling index and the color values (L^* , a^* and b^*) of pasta increased with the addition of cassava flour, while optimum cooking time was reduced and cyanide content in the selected product was increased slightly. Thereby it can be concluded that “Kirikawadi” Sri Lankan Cassava cultivar can be used as a source for pasta production as a non-conventional ingredient with a low production cost.

Keywords: Cassava, Durum wheat, *Kirikawadi*, pasta, *tagliatelle*

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