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Evaluation of different processing methods to develop a non-dairy milk using Cowpea (*Vigna unguiculata*) and Sesame (*Sesamum indicum*)

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Non-dairy milk is an evolving food category among consumers who are looking for vegan products as a solution for lactose intolerance and those allergic to milk proteins. The use of plant-based milk alternatives is a growing trend that can serve as an inexpensive alternative to fulfill the protein requirement. Hence, the present study was carried out to identify the best processing method and to develop a non-dairy milk using cowpea (*Vigna unguiculata*) and sesame (*Sesamum indicum*) blends. Three preliminary processing methods such as drying, roasting, and germination are used to prepare the treatments with cowpea and sesame blends to determine the best processing method and the formulation of the blend. The selected plant-based milk was analyzed for sensory, proximate, and physicochemical properties. Fresh milk was used as the reference sample. Based on the sensory evaluation, the roasting method was selected as the best processing method amongst three processing methods, while the best formulation ratio of cowpea and sesame to extract milk was identified as 7: 3. The prominent leguminous flavour was masked by a base treatment. The moisture, crude protein, fat, and ash content of the selected plant milk product were 92.06 %, 1.25 %, 2.63 %, and 0.68 %, respectively. The pH was measured on the 1st, 2nd, 4th, 6th, 7th, 11th, 13th, 14th and 21st days and varied between $7.13 - 7.10$. The values for physicochemical properties of the developed plant milk were less than those of fresh milk. In conclusion, the developed plant-based milk product can be stored at a refrigerated temperature (4 °C) for 13 days.

Keywords: Non-dairy, Roasting, Plant-based milk, Vegan, Legumes.