

## Documents

Sohaimi, N.N.<sup>a</sup>, Wahab, W.A.<sup>a</sup>, Ahmad, M.N.<sup>b</sup>, Sapak, Z.<sup>c</sup>, Azahar, N.S.<sup>d</sup>, Md Zin, N.H.<sup>a</sup>

**Proximate Composition of Spray-dried Sacha Inchi Milk Powder as Potential Plant-based Milk**  
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<sup>a</sup> Department Biotechnology, Kulliyah of Science, International Islamic University Malaysia, Pahang, Malaysia

<sup>b</sup> Department Chemistry, Kulliyah of Science, International Islamic University Malaysia, Pahang, Malaysia

<sup>c</sup> Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA (UiTM) Jasin, Melaka, Malaysia

<sup>d</sup> Fakulti Sains dan Teknologi Industri, Universiti Malaysia Pahang Sultan Abdullah, Pahang, Malaysia

**Abstract**

The recognition of sachu inchi (SI) as a superfood has shown its potential to be used as a new source of plant-based milk with high nutritional value. In this study, the SI milk powder was produced through the spray drying technique at two different inlet temperatures of 160°C and 180°C. The spray-dried SI milk powder was subjected to nutrient analysis using standard methods. The nutrients analyzed include ash, fat, moisture content, fiber, protein and carbohydrate. The water holding capacity was also measured for the SI milk powder to determine its ability to absorb water. The sensory evaluation was performed using a 5-point hedonic scale to rate panelist preference on the odor, color, and texture of the SI milk powder. Proximate analysis showed that spray-dried milk powder produced at 160°C inlet temperature has the highest value of nutrient content compared to the milk powder produced at 180°C. The nutrient content in milk powder produced at 160°C spray-dry inlet temperature was as follows: ash ( $6.98 \pm 1.90\%$ ), fat ( $5.15 \pm 0.21\%$ ), fiber ( $0.63 \pm 0.13\%$ ), moisture content ( $2.94 \pm 0.25\%$ ), protein ( $11.64 \pm 0.08\%$ ), and carbohydrate ( $70.08 \pm 0.48\%$ ). Meanwhile, nutrient content in milk powder produced at 180°C was: ash ( $4.44 \pm 1.6935\%$ ), fat ( $4.03 \pm 0.012\%$ ), fiber ( $0.56 \pm 0.1294\%$ ), moisture content ( $5.56 \pm 0.08\%$ ), protein ( $9.18 \pm 0.44\%$ ), and carbohydrate ( $78.85 \pm 0.50\%$ ). The water capacity of milk powder produced at the inlet temperature of 160°C was higher ( $93.97 \pm 3.11\%$ ) compared to the milk powder produced at 180°C ( $71.64 \pm 1.23\%$ ) inlet temperature. The sensory evaluation test revealed that all the tested parameters, including odor, color, and texture, showed that the SI milk powder is acceptable as the new potential powdered milk. The study has shown that spray-dried SI milk powder is a good source of macronutrients and is feasible to be consumed as plant-based milk. © 2024 Malaysian Institute of Chemistry. All rights reserved.

**Author Keywords**

plant-based milk; proximate analysis; Sacha inchi; spray drying

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**Correspondence Address**

Md Zin N.H.; Department Biotechnology, Malaysia; email: hasnizamz@iium.edu.my

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