

Development and analysis of alternative candlenut-based omega-oil nutritional supplements

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Abstract

The prevalence of stunting cases in Indonesia in the recent decade have created a demand for a localized affordable alternative of omega-3, DHA, and omega-6 sources as nutritional supplements [1,2]. In this study, cold-pressed candlenut oil, which contains more than 25% omega-3 and 40% omega-6, is paired with algae oil to fulfill the omega oil and DHA dietary requirement [3,4]. A formulation of 84.5% candlenut oil and 13.2% algae oil have been proven to yield adequate nutritional quality as a food supplement, fulfilling up to 80% of nutritional daily intake requirements of omega oil and DHA for children under 3 years old, with just 1 g of formulated oil. Acute oral toxicity tests had also been conducted on 11 mice, resulting in non-toxic results, with blend LD₅₀ of >5000 mg/kg body weight. The developed formulation also showed comparable sensory acceptance scores to commercially available fish-based omega oil, with competitive economic feasibility.

References

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