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Akhsan Linuwih, Dr. Agr. Sc Sri Wijanarti, S. T. P., M.Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

PENGEMBANGAN FORMULASI *SNACK BAR* SUMBER KALORI DARI *BROKEN CASHEW* (*Anacardium occidentale* L.)

Oleh

Akhsan Linuwih

22/503720/SV/21534

Diajukan kepada Departemen Teknologi Hayati dan Veteriner,
Sekolah Vokasi, Universitas Gadjah Mada, pada tanggal 9 Juli 2026
untuk memenuhi sebagian persyaratan untuk memperoleh gelar
Sarjana Terapan Teknik

ABSTRAK

Penelitian ini bertujuan mengembangkan formulasi *snack bar* sumber kalori berbasis *broken cashew* (*Anacardium occidentale* L.) sebagai upaya valorisasi hasil samping (*by-product*) agroindustri kacang mete. *Broken cashew* merupakan hasil samping proses sortasi industri mete yang bernilai ekonomi rendah, meskipun mengandung lipid 40–57%, protein nabati 20–25%, serta mineral dan senyawa bioaktif yang menjadikannya potensial sebagai bahan baku pangan fungsional. Penelitian menggunakan Rancangan Acak Lengkap (RAL) dengan lima formulasi (F1–F5) berdasarkan variasi rasio tepung *broken cashew* : tepung kedelai secara berturut-turut sebanyak 50:30, 55:25, 60:20, 65:15, dan 70:10, dengan bahan pendukung berupa oat, madu, putih telur, margarin, dan sirup gula yang dibuat konstan. Parameter yang dianalisis meliputi karakteristik fisik (*hardness* dan warna), kimia (kadar lemak, kadar air, kadar abu, dan nilai kalori), serta sensoris (rasa, aroma, dan tekstur) melalui uji hedonik dengan 30 panelis. Hasil menunjukkan bahwa variasi rasio kedua tepung berpengaruh nyata ($p<0,05$) terhadap seluruh parameter. Nilai *hardness* berkisar antara 13,00–39,50 N, meningkat seiring proporsi kedelai akibat agregasi protein dan serat. Nilai *Browning Index* (BI) berkisar antara 109,00–146,00, meningkat seiring proporsi kedelai akibat intensifikasi reaksi Maillard. Kadar lemak berkisar antara 32,50–35,20%, meningkat seiring proporsi *broken cashew* akibat kandungan asam oleat dan linoleat yang tinggi, sementara kadar air (9,30–10,30%) turut meningkat seiring proporsi *broken cashew* akibat efek penghambatan evaporasi oleh lemak selama pemanggangan. Kadar abu berkisar antara 1,92–2,20%, dipengaruhi oleh kandungan mineral kedelai. Nilai kalori aktual (*bomb calorimeter*) berkisar 565,61–602,82 kkal/100 g, melampaui klaim "Sumber Energi" BPOM RI (≥215 kkal/100 g). Berdasarkan analisis *Simple Additive Weighting* (SAW), formula F5 (tepung *broken cashew* 70 g : tepung kedelai 10 g) terpilih sebagai formula terbaik (SAW = 0,9559) dengan penerimaan sensoris tertinggi pada rasa dan aroma. Penelitian ini membuktikan potensi *broken cashew* sebagai bahan baku *snack bar* sumber kalori yang mendukung peningkatan nilai tambah hasil samping (*by-product*) dan ekonomi sirkular industri mete.

Kata kunci: *broken cashew, snack bar, sumber kalori, valorisasi hasil samping (by-product).*

Pembimbing Utama : Dr. Agr. Sc Sri Wijanarti, S. T. P., M.Sc.

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DEVELOPMENT OF A *SNACK BAR* FORMULATION SOURCE OF CALORIES FROM BROKEN CASHEW (Anacardium occidentale L.)

by

Akhsan Linuwih

22/503720/SV/21534

Submitted to the Department of Bioresources Technology and Veterinary Vocational School, Universitas Gadjah Mada,9 July 2026
In partial fulfillment of the requirements for the Degree of Bachelor of Applied Science in Engineering

ABSTRACT

This study aims to develop the formulation of a calorie-source snack bar based on broken cashew (Anacardium occidentale L.) as an effort to valorize a by-product of the cashew nut agro-industry. Broken cashew is a by-product of the cashew industry sorting process with low economic value, although it contains 40–57% lipid, 20–25% vegetable protein, and minerals and bioactive compounds that make it potential as a functional food raw material. The study used a Completely Randomized Design (CRD) with five formulations (F1–F5) based on variations in the ratio of broken cashew flour to soybean flour, respectively 50:30, 55:25, 60:20, 65:15, and 70:10, with supporting ingredients in the form of oats, honey, egg white, margarine, and sugar syrup kept constant. The parameters analyzed included physical characteristics (hardness and color), chemical characteristics (fat content, moisture content, ash content, and calorie value), and sensory characteristics (taste, aroma, and texture) through a hedonic test with 30 panelists. The results showed that variations in the ratio of the two flours had a significant effect ($p<0.05$) on all parameters. The hardness value ranged from 13.00–39.50 N, increasing with the proportion of soybean flour due to protein and fiber aggregation. The Browning Index (BI) ranged from 109.00–146.00, increasing with the proportion of soybean flour due to the intensification of the Maillard reaction. The fat content ranged from 32.50–35.20%, increasing with the proportion of broken cashew due to its high oleic and linoleic acid content, while the moisture content (9.30–10.30%) also increased with the proportion of broken cashew due to the fat-mediated inhibition of evaporation during baking. The ash content ranged from 1.92–2.20%, influenced by the mineral content of soybeans. The actual calorific value (bomb calorimeter) ranged from 565.61–602.82 kcal/100 g, exceeding the "Energy Source" claim of the Indonesian Food and Drug Authority (BPOM RI) (≥215 kcal/100 g). Based on the Simple Additive Weighting (SAW) analysis, formula F5 (70 g broken cashew flour : 10 g soybean flour) was selected as the best formula (SAW = 0.9559), with the highest sensory acceptance in taste and aroma. This study demonstrates the potential of broken cashew as a raw material for calorie-source snack bars that supports value addition of agro-industrial by-products and a circular economy within the cashew industry.

Keywords: *broken cashew, snack bar, calorie source, by-product valorization.*

Supervisor : Dr. Agr. Sc Sri Wijanarti, S. T. P., M.Sc.