

ABSTRAK

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UJI DAYA TERIMA DAN KANDUNGAN ZAT BESI (Fe) PADA *BROWNIES* PANGGANG DENGAN SUBSTITUSI TEPUNG OAT DAN TEPUNG EDAMAME SEBAGAI ALTERNATIF KUDAPAN SUMBER ZAT BESI UNTUK REMAJA PUTRI ANEMIA

1x + 118 halaman + 26 tabel + 11 lampiran

Anemia merupakan salah satu isu yang umum di kalangan remaja putri, timbul dari peningkatan kebutuhan zat besi selama masa pubertas dan hilangnya darah saat menstruasi. Intervensi pencegahan anemia dapat mencakup pengembangan produk pangan ringan yang diperkaya dengan zat besi. Studi ini menerapkan metodologi eksperimental menggunakan Rancangan Acak Lengkap (RAL) dengan empat variasi formulasi: PF0 (50:0:0), PF1 (50:20:30), PF2 (50:25:25), dan PF3 (50:30:20). Evaluasi penerimaan konsumen dilakukan melalui uji hedonik pada 25 panelis semi terlatih, yang menilai atribut seperti warna, aroma, rasa, dan tekstur. Analisis statistik data dilaksanakan menggunakan uji *Kruskal-Wallis*, diikuti oleh uji *Mann-Whitney* (tingkat signifikansi $\alpha = 0,05$). Kuantifikasi kandungan zat besi dilakukan melalui metode *Atomic Absorption Spectrophotometry* (AAS).

Hasil uji hedonik menunjukkan PF3 memperoleh skor tertinggi (17,56), diikuti PF1 (16,64), PF2 (16,56), dan PF0 (15,64). Perbedaan signifikan terdapat pada indikator rasa ($p = 0,029$) dan tekstur ($p = 0,041$), sedangkan warna dan aroma tidak berbeda nyata. Uji *Mann-Whitney* mengonfirmasi perbedaan nyata pada rasa dan tekstur antar beberapa formulasi. Kadar Fe meningkat dari PF0 sebesar 7,57 mg/100 g menjadi PF3 sebesar 7,61 mg/100 g. Formulasi PF3 direkomendasikan sebagai formulasi optimal dengan tingkat daya terima dan kandungan zat besi terbaik. Namun peningkatan kadar Fe yang diperoleh masih relatif kecil sehingga diperlukan pengembangan formulasi lebih lanjut.

Kata kunci: anemia, *brownies* panggang, daya terima, tepung oat, tepung edamame, zat besi, remaja putri.

ABSTRACT

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ACCEPTANCE TEST AND IRON (Fe) CONTENT ANALYSIS OF BAKED BROWNIES MADE WITH OAT FLOUR AND EDAMAME FLOUR AS SUBSTITUTES: AN ALTERNATIVE IRON-RICH SNACK FOR ADOLESCENT GIRLS WITH ANEMIA

1x + 118 pages + 26 tables + 11 appendices

Anemia is a common issue among adolescent girls, resulting from increased iron requirements during puberty and blood loss during menstruation. Interventions to prevent anemia may include the development of iron-fortified snack foods. This study employed an experimental methodology using a Completely Randomized Design (CRD) with four formulation variations: PF0 (50:0:0), PF1 (50:20:30), PF2 (50:25:25), and PF3 (50:30:20). Consumer acceptance was evaluated through a hedonic test involving 25 semi-trained panelists, who assessed attributes such as color, aroma, taste, and texture. Statistical analysis of the data was performed using the Kruskal-Wallis test, followed by the Mann-Whitney test (significance level $\alpha = 0.05$). Iron content was quantified using Atomic Absorption Spectrophotometry (AAS).

The results of the hedonic test showed that PF3 received the highest score (17.56), followed by PF1 (16.64), PF2 (16.56), and PF0 (15.64). Significant differences were found in the taste ($p = 0.029$) and texture ($p = 0.041$) indicators, while color and aroma did not differ significantly. The Mann-Whitney test confirmed significant differences in taste and texture among the various formulations. Iron (Fe) content increased from 7.57 mg/100 g in PF0 to 7.61 mg/100 g in PF3. Formulation PF3 is recommended as the optimal formulation with the best acceptability and iron content. However, the increase in iron content obtained is still relatively small, so further formulation development is needed.

Keywords: anemia, baked brownies, acceptability, oat flour, edamame flour, iron, adolescent girls