Pemanfaatan Produk Samping Kakao sebagai Teh Herbal Fungsional melalui Penambahan Jahe dan Stevia

Annisa'U Choirun, S.T.P., M.T.

Grina Syawallia Putri
Program Studi Teknologi Rekayasa Pangan
Jurusan Teknologi Pertanian

ABSTRAK

Kulit biji kakao merupakan produk samping pengolahan kakao yang dihasilkan sekitar 21,47% dari total biji kering, namun belum dimanfaatkan secara optimal sebagai bahan pangan fungsional di Indonesia. Penelitian ini bertujuan untuk mengevaluasi pengaruh variasi proporsi kulit biji kakao dan jahe terhadap karakteristik fisik, kimia, dan sensoris teh herbal kulit biji kakao dengan konsentrasi bubuk stevia yang dipertahankan tetap. Penelitian menggunakan Rancangan Acak Lengkap (RAL) non-faktorial dengan empat perlakuan dan enam ulangan, yaitu T0 (100% kulit biji kakao), T1 (75% kulit biji kakao : 12,5% jahe : 12,5% bubuk stevia), T2 (65% kulit biji kakao : 22,5% jahe : 12,5% bubuk stevia), dan T3 (55% kulit biji kakao : 32,5% jahe : 12,5% bubuk stevia). Parameter yang diamati meliputi karakteristik fisik (nilai warna L*, a*, dan b*), kimia (kadar air, kadar abu, serat kasar, dan aktivitas antioksidan), serta sensoris (uji hedonik dan mutu hedonik). Data dianalisis menggunakan ANOVA dan uji lanjut DMRT, kemudian perlakuan terbaik ditentukan dengan metode *Multiple Attribute*. Hasil penelitian menunjukkan bahwa penurunan proporsi kulit biji kakao meningkatkan nilai kecerahan (L*) dari 43,50 menjadi 57,07 dan nilai kekuningan (b*) dari 34,86 menjadi 44,32, namun menurunkan nilai kemerahan (a*) dari 13,96 menjadi 7,17. Kadar air (5,06–7,21%) dan serat kasar (68,85–71,65%) meningkat seiring berkurangnya proporsi kulit biji kakao, sedangkan kadar abu (7,64–6,08%) dan aktivitas antioksidan (37,81–22,84%) menurun. Seluruh formulasi memenuhi standar SNI 3836:2013 untuk kadar air dan kadar abu (maks. 8,0%), sementara kadar serat kasar melebihi batas SNI sebesar 16,5% karena tingginya kandungan lignoselulosa kulit biji kakao dan serat tidak larut jahe. Uji hedonik menunjukkan bahwa T0 memperoleh nilai kesukaan aroma tertinggi (4,24), sedangkan T1 memiliki nilai kesukaan rasa tertinggi (3,72), nilai kesukaan warna tertinggi (3,72), serta penerimaan keseluruhan (3,56) yang tidak berbeda nyata dengan T0. Berdasarkan metode Multiple Attribute Zeleny, perlakuan terbaik adalah T1 karena memiliki keseimbangan optimal antara aktivitas antioksidan (29,88%), mutu fisikokimia yang memenuhi standar SNI 3836:2013, dan karakteristik sensoris dalam kategori suka (3,56–4,12).

Kata kunci : aktivitas antioksidan, jahe, kulit biji kakao, stevia, teh herbal

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(*The Use of Cocoa By-products as Functional Herbal Tea through the Addition of Ginger and Stevia*)

Annisa'U Choirun, S.T.P., M.T.

Grina Syawallia Putri
Food Engineering Technology Study Program
Department of Agriculture Technology

ABSTRACT

Cocoa bean husks represent a processing residue that accounts for roughly 21.47% of dried bean mass, yet their application as functional food components in Indonesia continues to be underutilized. This research investigated how different ratios of cocoa bean husk to ginger influence the physicochemical attributes and sensory profiles of herbal tea formulations, while maintaining a fixed stevia powder content. The study employed a non-factorial Completely Randomized Design (CRD) with four treatments and six replications: T0 (100% cocoa bean husk), T1 (75% cocoa bean husk : 12.5% ginger : 12.5% stevia powder), T2 (65% cocoa bean husk : 22.5% ginger : 12.5% stevia powder), and T3 (55% cocoa bean husk : 32.5% ginger : 12.5% stevia powder). The assessment encompassed physical properties (color parameters L, a, b), chemical composition (moisture, ash, crude fiber, and antioxidant capacity), and sensory evaluation through hedonic testing. Data were analyzed using one-way ANOVA followed by DMRT post hoc tests, with the best treatment determined using the Multiple Attribute method. The results showed that a reduction in cocoa bean husk proportion increased lightness (L*) from 43.50 to 57.07 and yellowness (b*) from 34.86 to 44.32, while decreasing redness (a*) from 13.96 to 7.17. Moisture content (5.06–7.21%) and crude fiber (68.85–71.65%) increased as cocoa bean husk proportion decreased, whereas ash content (7.64–6.08%) and antioxidant activity (37.81–22.84%) declined. Every formulation complied with SNI 3836:2013 requirements for moisture and ash (≤8.0%), though crude fiber concentrations surpassed the 16.5% maximum due to the lignocellulosic composition of cocoa husks and the insoluble dietary fiber contributed by ginger. Hedonic evaluation revealed that T0 achieved the highest aroma preference score (4.24), while T1 obtained the highest taste preference score (3.72), the highest color preference score (3.72), and an overall acceptance score (3.56) that was not significantly different from T0. Based on the Multiple Attribute method, T1 was identified as the best treatment, demonstrating an optimal balance between antioxidant activity (29.88%), physicochemical quality compliant with SNI 3836:2013 standards, and sensory characteristics within the liked category (3.56–3.72).*

***Keywords**:, antioxidant activity, cocoa bean husk, ginger, herbal tea, stevia*