EVALUASI DAN OPTIMASI *BODY BUTTER* DARI *VIRGIN COCONUT OIL* (VCO) DENGAN BAHAN AKTIF EKSTRAK *GREEN TEA* DAN MINYAK LEMON SERTA VARIASI PENAMBAHAN *BEESWAX*

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INTISARI

Body butter dari *Virgin Coconut Oil* (VCO) dengan bahan aktif ekstrak *green tea* dan minyak lemon diformulasikan dengan variasi penambahan *beeswax*. Penelitian ini bertujuan untuk mengevaluasi kestabilan fisik sediaan *body butter* dan mengetahui formulasi optimum terhadap tingkat antioksidan dan perlindungan terhadap UV. VCO sebagai komponen fase minyak dikarakterisasi terhadap parameter kadar air, kadar asam lemak bebas (FFA), dan kadar bilangan peroksida. *Body butter* diformulasikan dengan variasi kandungan *beeswax* 0, 5, 10, 15, dan 20% (b/b). Ekstrak *green tea* minyak lemon ditambahkan dengan konsentrasi yang sama disetiap formulasi. Sediaan *body butter* dievaluasi dengan pengujian ukuran droplet, pemisahan fasa, dan *cycling test.* Pengujian *cycling test* mencangkup parameter organoleptik, pH, viskositas, daya sebar, dan daya serap. Formulasi optimum sediaan *body butter* ditentukan berdasarkan tingkat aktivitas antioksidan menggunakan metode DPPH dan perlindungan terhadap UV menggunakan spektrofotometer UV-Vis.

Hasil karakterisasi kadar air dan FFA VCO memenuhi standar SNI 7381:2008 dan APCC (2009), sedangkan kadar bilangan peroksida untuk F2, F4, F5 melebih standar SNI 7381:2008 dan APCC (2009). *Body butter* yang dihasilkan memiliki nilai pH 8 untuk semua formulasi. Semakin banyak konsentrasi *beeswax*, maka semakin besar viskositas tetapi daya sebar dan ukuran droplet semakin kecil. Daya serap *body butter* lebih dari 100 mg/1 mL air untuk semua formulasi. Sediaan *body butter* tidak mengalami pemisahan fasa setelah satu bulan pertama. Konsentrasi *beeswax* memengaruhi bentuk sediaan, viskositas, dan daya sebar *body butter*. *Beeswax* menjaga kestabilan viskositas dan daya sebar *body butter*. Konsentrasi *beeswax* berpengaruh 65%, sedangkan ekstrak *green tea* dan minyak lemon berpengaruh 35% terhadap tingkat antioksidan dengan formula optimum pada F4. Konsentrasi *beeswax* hanya memengaruhi 21% terhadap nilai SPF dengan formula optimum pada F3.

Kata kunci: antioksidan, *beeswax*, *body butter*, filter UV, VCO.

EVALUATION AND OPTIMIZATION OF BODY BUTTER FROM VIRGIN COCONUT OIL (VCO) WITH ACTIVE INGREDIENTS GREEN TEA EXTRACT AND LEMON OIL ALSO VARIATION IN THE ADDITION OF BEESWAX

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ABSTRACT

Body butter from Virgin Coconut Oil (VCO) with active ingredients green tea extract and lemon oil is formulated with variations in addition of beeswax. This research aims to evaluate physical stability of body butter preparations and determine the optimum formulation for antioxidant and UV protection levels. VCO as a component of the oil phase was characterized in terms of water content, free fatty acid (FFA) and peroxide value. Body butter is formulated with variations in beeswax content of 0, 5, 10, 15, and 20% (w/w). Lemon oil green tea extract is added at the same concentration in each formulation. Body butter preparations were evaluated by testing droplet size, phase separation, and cycling test. The cycling test includes organoleptic parameters, pH, viscosity, spreadability and absorption capacity. The optimum formulation of body butter preparations is determined based on the level of antioxidant activity using the DPPH method and UV protection using a UV-Vis spectrophotometer.

The results of the characterization of water content and FFA VCO meet the SNI 7381:2008 and APCC (2009) standards, while the peroxide levels for F2, F4, F5 exceed the SNI 7381:2008 and APCC (2009) standards. The body butter produced has a pH value of 8 for all formulations. The greater the concentration of beeswax, the greater the viscosity but the spreadability and smaller droplet size. The absorption capacity of body butter is more than 100 mg/1 mL of water for all formulations. Body butter preparations do not experience phase separation after the first month. The concentration of beeswax affects form, viscosity, and spreadability of body butter. Beeswax maintains the stability of the viscosity and spreadability of body butter. The beeswax concentration has an effect of 65%, while green tea extract and lemon oil have a 35% effect on antioxidant levels with the optimum formula at F4. The beeswax concentration only affects 21% of the SPF value with the optimum formula at F3.

Keywords: antioxidant, beeswax, body butter, UV filter, VCO.