Pemanfaatan Ekstrak Kulit Buah Kopi Arabika sebagai Antioksidan dalam Scrub Berbasis Tandan Kosong Kelapa Sawit = Utilization of Arabica Coffee Fruit Peel Extract as an Antioxidant in Oil Palm Empty Fruit Bunch Based Scrub

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Abstrak

Produk kecantikan yang tengah beredar di pasar Indonesia adalah yang berbasis bahan alam yang mengandung antioksidan tinggi. Ada banyak limbah pengolahan hasil bumi yang belum dimanfaatkan dengan optimal. Salah satunya adalah kulit buah kopi arabika yang dapat berpotensi sebagai antioksidan dalam krim body scrub. Selulosa tandan kosong kelapa sawit dan beras ketan putih juga ditambahkan ke dalam krim body scrub. Penelitian ini terbagi menjadi tiga tahap, yaitu pembuatan selulosa, ekstraksi kulit buah kopi arabika, dan pembuatan krim body scrub. Tahap pembuatan selulosa dilakukan dengan mengekstraksi tandan kosong kelapa sawit melalui proses delignifikasi dengan NaOH 12%, bleaching H2O2 10%, pengeringan di dalam oven pada suhu 105 , dan pengayakan menggunakan mesh 40 dan 60. Tahap kedua adalah ekstraksi kulit buah kopi arabika. Metode ekstraksi yang digunakan adalah metode maserasi dengan perendaman selama 4 x 24 jam menggunakan pelarut etanol 70%. Ekstrak yang diperoleh digunakan untuk menganalisis kandungan beta karoten dan antioksidan di dalam kulit buah kopi arabika. Tahap terakhir yaitu pembuatan krim body scrub dengan mencampurkan fase minyak dan fase air. Setelah kedua fase tercampur, selulosa tandan kosong kelapa sawit, tepung beras ketan putih, dan berbagai konsentrasi ekstrak kulit buah kopi arabika ditambahkan kemudian dilakukan uji stabilitas dipercepat dengan metode uji mekanik (sentrifugasi). Pengujian dilakukan terhadap krim body scrub meliputi uji homogenitas, uji tipe emulsi, uji pH, organoleptik, uji iritasi, uji viskositas, uji angka lempeng total, uji antioksidan, uji ukuran droplet, indeks creaming dan scanning electron microscope. Hasil penelitian menunjukkan ekstrak kulit kopi arabika tergolong antioksidan yang sangat kuat dengan nilai IC50 sebesar 8,136 µg/ml. Dari penelitian juga diperoleh kandungan aktivitas antioksidan dari formula krim scrub tanpa ekstrak kulit kopi arabika yang tergolong antioksidan lemah dan formula dengan ekstrak 4, 6, 8% yang tergolong antioksidan kuat dengan nilai IC50 berturut-turut sebesar 154,042; 82,281; 67,255; dan 55,191µg/ml. Selain itu, melalui pengujian uji stabilitas dipercepat, uji indeks creaming, dan uji ukuran droplet semua formula krim body scrub dapat dikatakan cukup stabil.

.....Beauty products currently circulating in the Indonesian market are those based on natural ingredients that contain high antioxidants. There are many agricultural product processing wastes that have not been used optimally. One of them is the peel of the arabica coffee fruit which has the potential as an antioxidant in body scrub creams. Cellulose of oil palm empty fruit bunches and white glutinous rice are also added to the body scrub cream. This research was divided into three stages, namely making cellulose, extracting arabica coffee fruit peel, and making body scrub cream. The process of making cellulose is carried out by extracting empty palm fruit bunches through a delignification process with 12% NaOH, bleaching 10% H2O2, drying in the oven at 105, and sieving using mesh 40 and 60. The second step is extracting the peel of arabica coffee fruit. The extraction method used is the maceration method by soaking for 4 x 24 hours using 70% ethanol solvent. The extract obtained was used to analyze the content of beta carotene and

antioxidants in the arabica coffee fruit peel. The last stage is making a body scrub cream by mixing the oil phase and the water phase. After the two phases were mixed, the cellulose of empty palm fruit bunches, white glutinous rice flour, and various concentrations of arabica coffee fruit peel extract were added, then an accelerated stability test was carried out using the mechanical test method (centrifugation). Tests were carried out on body scrub creams including homogeneity test, emulsion type test, pH test, organoleptic test, irritation test, viscosity test, total plate number test, antioxidant test, droplet size test, creaming index and scanning electron microscope. The results showed that Arabica coffee peel extract was classified as a very strong antioxidant with an IC50 value of 8,136 µg/ml. The study also obtained the antioxidant activity content of the scrub cream formula without Arabica coffee peel extract which was classified as a weak antioxidant and the formula with 4; 6; and 8% extract which was classified as a strong antioxidant with IC50 values of 154.042; 82.281; 67.55; and 55.191µg/ml respectively. In addition, through accelerated stability testing, creaming index test, and droplet size test, all body scrub cream formulas can be said to be quite stable.