ABSTRAK

KUALITAS VCO (*VIRGIN COCONUT OIL)* MENGGUNAKAN METODE ENZIMATIS DENGAN VARIASI ENZIM DARI EKSTRAK BUAH NANAS DAN PEPAYA

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Virgin Coconut Oil (VCO) merupakan minyak kelapa murni yang bernilai ekonomi tinggi, namun metode produksi tradisional secara pemanasan cenderung menurunkan mutu akibat ketengikan dan perubahan warna. Metode enzimatis menggunakan enzim proteolitik dari ekstrak nanas dan pepaya menjadi alternatif yang menjanjikan untuk menghasilkan VCO dengan rendemen tinggi dan kualitas fisikokimia yang baik. Penelitian ini bertujuan untuk mengetahui dan menganalisis kualitas VCO yang dihasilkan melalui metode enzimatis dengan variasi kombinasi enzim dari ekstrak buah nanas dan pepaya. Penelitian menggunakan Rancangan Acak Lengkap (RAL) dengan empat perlakuan, yaitu kontrol (tanpa enzim), A (10%), B (20%), dan C (25%), masing-masing diulang tiga kali. Parameter yang diuji meliputi rendemen, kadar air, dan kadar asam lemak bebas (ALB) yang dianalisis menggunakan ANOVA satu arah dilanjutkan dengan uji Tukey HSD. Hasil penelitian menunjukkan rendemen VCO berkisar 10,67%–33,33%, dengan rendemen tertinggi pada perlakuan B (33,33%) dan berbeda nyata dibandingkan kontrol ($p<0,05$), namun tidak berbeda nyata antarperlakuan A, B, dan C. Kadar air seluruh perlakuan berkisar 0,0218%–0,0403% dan tidak dipengaruhi secara nyata oleh konsentrasi enzim ($p>0,05$), sementara kadar ALB berkisar 0,0227%–0,0503% dan dipengaruhi secara nyata oleh penambahan enzim dibandingkan kontrol, meskipun antarperlakuan A, B, dan C tidak berbeda nyata. Seluruh nilai kadar air dan ALB masih memenuhi standar SNI 7381:2008. Berdasarkan hasil tersebut, disarankan penggunaan enzim dari ekstrak nanas dan pepaya dengan konsentrasi 10% sebagai pilihan utama karena lebih efisien, namun menghasilkan kualitas VCO yang setara dengan konsentrasi lebih tinggi. Penelitian selanjutnya disarankan menguji parameter tambahan seperti bilangan peroksida, bilangan iod, dan uji organoleptik.

Kata kunci: VCO, Metode Enzimatis, Rendemen, Kadar air, ALB

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ABSTRACT

THE QUALITY OF VCO (VIRGIN COCONUT OIL) USES AN ENZYMATIC METHOD WITH ENZYME VARIATIONS FROM PINEAPPLE AND PAPAYA FRUIT EXTRACTS

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Virgin Coconut Oil (VCO) is a pure coconut oil with high economic value, but traditional production methods by boiling tend to reduce quality due to tarnishness and color changes. The enzymatic method using proteolytic enzymes from pineapple and papaya extracts is a promising alternative to produce VCO with high yield and good physicochemical quality. This study aims to find out and analyze the quality of VCO produced through enzymatic methods with variations of enzyme combinations from pineapple and papaya fruit extracts. The study used a Complete Random Design (CRD) with four treatments, consist of control (without enzymes), A (10%), B (20%), and C (25%), three replication. The parameters tested included yield, water content, and free fatty acid (FFA) levels which were analyzed using one-way ANOVA followed by the Tukey HSD test. The results showed that the VCO yield ranged from 10.67%–33.33%, with the highest yield in treatment B (33.33%) and significantly different from the control ($p<0.05$), but there was no significant difference between treatments A, B, and C. The moisture content of the whole treatment ranged from 0.0218%–0.0403% and was not significantly affected by the enzyme concentration ($p>0.05$), while the FFA level ranged from 0.0227%–0.0503% and was significantly affected by the addition of enzymes compared to the control, although between treatments A, B, and C are not significantly different. All moisture content and FFA values still meet the SNI 7381:2008 standard. Based on these results, it is recommended to use enzymes from pineapple and papaya extracts with a concentration of 10% as the main choice because it is more efficient, but produces VCO quality equivalent to higher concentrations. Further research is suggested to test additional parameters such as peroxide numbers, iodine numbers, and organoleptic assays.

Keywords: VCO, Enzymatic Method, Yield, Water content, FFA

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