



EFEKTIVITAS MIKROEMULSI ASAM ASKORBAT DALAM MENGHAMBAT KERUSAKAN MINYAK IKAN SELAMA PENYIMPANAN SUHU

KAMAR

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EFEKTIVITAS MIKROEMULSI ASAM ASKORBAT DALAM MENGHAMBAT KERUSAKAN MINYAK IKAN SELAMA PENYIMPANAN SUHU KAMAR

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INTISARI

Penelitian ini bertujuan untuk mengetahui efektivitas mikroemulsi asam askorbat dalam menghambat kerusakan minyak ikan yang disimpan dalam suhu kamar. Pengaruh penambahan asam askorbat dalam mikroemulsi terhadap kerusakan minyak ikan dapat dilihat dari parameter uji viskositas, turbiditas, aktivitas antioksidan, angka peroksida, angka anisidin, dan angka total oksidasi. Penelitian ini terdiri dari 7 perlakuan yaitu konsentrasi asam askorbat 0 ppm, 50 ppm, 100 ppm, 150 ppm, 200 ppm, kontrol + (konsentrasi 200 ppm tanpa terpapar sinar matahari), kontrol – (konsentrasi 0 ppm tanpa terpapar sinar matahari) dengan tiga ulangan. Preparasi sampel dilakukan dengan mencampurkan minyak ikan dengan antioksidan asam askorbat yang dilarutkan dalam akuabides kemudian dibuat mikroemulsi. Sistem mikroemulsi terdiri dari minyak ikan 69 % dengan perbandingan air dan surfaktan 1 : 4 sebanyak 39 %. Surfaktan yang digunakan adalah Tween 20, Span 20, dan Span 80. Masing-masing mikroemulsi tersebut dimasukkan ke dalam botol vial dan disimpan dalam suhu kamar ± 30 °C, kemudian diamati tiap 10 hari selama 60 hari. Berdasarkan hasil penelitian, nilai angka peroksida selama penyimpanan 60 hari masih berada dalam kisaran ambang batas CODEX WHO yaitu sebesar ≤ 5 mek/kg, sedangkan angka anisidin dan angka totoks sudah di luar ambang batas CODEX WHO. Hasil penelitian menunjukkan bahwa mikroemulsi asam askorbat efektif menghambat kerusakan sampel minyak ikan sampai hari ke-20 (parameter kerusakan dalam kisaran ambang batas standar CODEX WHO) sedangkan perlakuan BHA selama 35 hari dan TBHQ selama 20 hari.

Kata kunci: Antioksidan, asam askorbat, BHA, mikroemulsi, oksidasi, TBHQ.



THE EFFECTIVENESS OF ASCORBIC ACID MICROEMULSION TO INHIBIT FISH OIL OXIDATION DURING ROOM TEMPERATURE STORAGE

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ABSTRACT

The purpose of this study was to determine the effectiveness of ascorbic acid microemulsion to inhibit fish oil oxidation during storage at room temperature. The effect of ascorbic acid addition in microemulsion was assayed from parameter such as viscosity, turbidity, antioxidant activity, peroxide value, anisidine value, and totox value. This study was consist of seven treatments, 0 ppm, 50 ppm, 100 ppm, 150 ppm, 200 ppm, control + (consentration 200 ppm without contact of sunlight), control - (consentration 0 ppm without contact of sunlight) with three replication. The samples were prepared by mixing fish oil with ascorbic acid antioxidant that dissolved in aquabidest in microemulsion system. The microemulsion system consisted of 69 % fish oil and 39 % water and surfactans (with comparison 1:4). Surfactans that used in this study were Tween 20, Span 20, and Span 80. The microemulsion were filled in vial bottle and kept at room temperature ± 30 °C then observed every 10 days for 60 days. The results showed that peroxide value during 60 days storage still appropriate with standard CODEX WHO that equals to ≤ 5 mek/kg, but parameter of anisidine value and totox value was inappropriate with standard CODEX WHO. The results showed that ascorbic acid microemulsion was effective to inhibit fish oil oxidation until 20th day. The BHA treatment effective to inhibit fish oil oxidation for 35th day and TBHQ effective to inhibit fish oil oxidation for 20th day.

Keywords: Antioxidant, ascorbic acid, BHA, microemulsion, oxidation, TBHQ.