

## INTISARI

Pengaruh Suhu dan Lama Penyimpanan  
Terhadap Kualitas Mikroemulsi Asam Lemak *Ulva Lactuca*  
yang Ditambah Antioksidan Asam Askorbat

Penelitian ini bertujuan mengetahui pengaruh suhu dan lama penyimpanan terhadap kualitas mikroemulsi asam lemak *Ulva lactuca* yang ditambah antioksidan asam askorbat. *U. lactuca* diambil di Pantai Trenggole, Yogyakarta. Penelitian terdiri dari ekstraksi asam lemak *U. lactuca*, pembuatan mikroemulsi, formulasi antioksidan asam askorbat dan pengujian kualitas. Ekstraksi asam lemak dilakukan menggunakan pelarut heksana dan etanol dengan rasio 1: 19 (v/v) pada suhu 70 °C selama 3 jam. Pembuatan mikroemulsi menggunakan 3 jenis surfaktan yang berbeda, yaitu Tween 80, Tween 20, dan Span 80 dengan rasio 87: 7,5: 5,5 (v/v) serta kadar air 80% dan konsentrasi asam lemak *U. lactuca* sebesar 200 ppm. Penelitian ini terdiri dari 3 perlakuan konsentrasi asam askorbat konsentrasi 0, 100, dan 200 ppm dengan dua ulangan. Mikroemulsi disimpan pada tiga suhu berbeda yaitu 10°C, 30°C, dan 50°C. Pengujian indeks turbiditas, angka peroksida, nilai TBA, dan aktivitas antioksidan dilakukan setiap 4 hari sekali sampai 20 hari. Hasil penelitian menunjukkan perlakuan suhu dan lama penyimpanan berpengaruh nyata ( $p < 0,05$ ) terhadap indeks turbiditas, aktivitas antioksidan angka peroksida, dan TBA. Nilai turbiditas telah rusak pada hari ke-20 dengan nilai  $> 1\%$ , sedangkan angka peroksida dan nilai TBA masih dalam standar produk pangan. Penggunaan asam askorbat sebagai antioksidan dengan konsentrasi 200 ppm lebih efektif dalam menghambat laju kerusakan mikroemulsi asam lemak *U. lactuca*.

Kata kunci : PUFA, mikroemulsi, *sea letuce*, vitamin C, kualitas

## Abstract

### *Effect of Temperature and Storage Time on Quality of Ulva lactuca Fatty Acid Microemulsion with Antioxidant Ascorbic Acid*

*This study aims to determine the effect of temperature and storage time on the quality of Ulva lactuca fatty acid in microemulsion with Antioksidan Ascorbic Acid. U. lactuca macroalgae samples were taken from coastal areas in Trenggole, Yogyakarta. The stages in this study were extraction of Ulva lactuca fatty acid, production of U. lactuca fatty acid microemulsion, formulation antioxidant Ascorbic Acid and quality. Extraction of fatty acid was carried out using hexane and ethanol solvents with the ratio of 1: 19 (v/v) at 70 degrees for 3 hours. Production of microemulsion was done by using 3 different types of surfactants Tween 80, Tween 20, and Span 80 with the ratio of 87,0: 7,5: 5,5 (v/v) with 80 per cent of water content and 200 ppm of U. lactuca fatty acid concentration. The study was consist of three treatments, 0 ppm, 100 ppm, and 200 ppm with two replication. Microemulsions with antioxidant Ascorbic Acid were stored at 10, 30, and 50 degrees. Quality examination of turbidity index, peroxide, TBA value and antioxidant activity which carried out on four days to 20 days. The results showed the treatment of three variation temperatures and storage time had a significant effect on turbidity, antioxidant activity, peroxide and TBA value up to the 20th day of storage. The turbidity value has been damaged on the 20th day with a value of > 1%, while the peroxide and TBA value are still in the standard of food products. The use of ascorbic acid as an antioxidant with a concentration of 200 ppm was proven to be more effective in inhibiting the rate of damage to the microemulsion of U. lactuca fatty acids.*

*Keywords: PUFA, microemulsion, sea lettuce, vitamin C, quality*