Intisari

STABILITAS ANTIOKSIDAN MIKROEMULSI ASAM LEMAK *Ulva lactuca* YANG DIFORTIFIKASI PADA MINUMAN JELI SELAMA PENYIMPANAN DINGIN

Penelitian ini bertujuan untuk mengetahui stabilitas antioksidan minuman jeli yang difortifikasi dengan mikroemulsi asam lemak *U. lactuca* selama penyimpanan. Tahap penelitian ini yaitu ekstraksi asam lemak *U. lactuca*, pembuatan mikroemulsi asam lemak *U. lactuca*, penambahan mikroemulsi asam lemak *U. lactuca* dalam minuman jeli dan penyimpanan selama 4 minggu pada suhu 10℃. Parameter pengujian yang dilakukan meliputi kandungan asam lemak, aktivitas antioksidan, angka *Thiobarbituric Acid* (TBA), dan karakteristik minuman jeli yang meliputi sineresis, pH, serta *Texture Profile Analysis* (TPA) yang terdiri dari *hardness, cohesiveness, gumminess, springiness*, dan *chewiness*. Penelitian menggunakan Rancangan Acak Lengkap (RAL) factorial, yaitu factor mikroemulsi dan kemasan yang dilapisi alumunium foil. Data dianalisis menggunakan analisis varian (ANOVA) dan dilanjutkan dengan uji DMRT. Hasil penelitian menunjukkan bahwa kombinasi penambahan mikroemulsi asam lemak *U. lactuca* dan kemasan yang dilapisi aluminium foil mempengaruhi stabilitas minuman jeli selama penyimpanan 4 minggu. Mikroemulsi dan aluminium foil berpengaruh nyata terhadap stabilitas aktivitas antioksidan, namun tidak berpengaruh nyata terhadap stabilitas angka *Thiobarbituric Acid* (TBA) dan karakteristik minuman jeli diantaranya sineresis, ph, dan *Texture Profile Analysis* (TPA) yang meliputi *hardness, cohesiveness, gumminess, springiness*, dan *chewiness*. Minuman jeli yang difortifikasi mikroemulsi asam lemak *U. lactuca* dengan dilapisi aluminium foil merupakan perlakuan terbaik karena memiliki ketahanan aktivitas antioksidan tertinggi hingga penyimpanan minggu ke-4, yaitu sebesar 51,41% inhibisi.

Kata kunci : asam lemak, *U. lactuca*, mikroemulsi, minuman jeli, penyimpanan

Abstract

ANTIOXIDANT STABILITY OF *Ulva lactuca* FATTY ACID MICROEMULSION FORTIFIED IN JELLY DRINK DURING STORAGE AT LOW TEMPERATURE

This study aims to determine the antioxidant stability of jelly drink fortified with *U. lactuca* fatty acid microemulsion during storage. The stages of this research were extraction of *U. lactuca* fatty acids, preparation of *U. lactuca* fatty acid microemulsions, addition of *U. lactuca* fatty acid microemulsions in jelly drinks and storage for 4 weeks at 10°C. The parameters of the tests carried out included fatty acid content, antioxidant activity, Thiobarbituric Acid (TBA) score, and characteristics of the jelly drink which included syneresis, pH, and the Texture Profile Analysis (TPA) which consisted of hardness, cohesiveness, gumminess, springiness, and chewiness. The study used a completely randomized design (CRD) factorial, that is the microemulsion and packaging covered with aluminum foil. Data were analyzed using analysis of variance (ANOVA) and continued with the DMRT test. The results showed that the combination of adding *U. lactuca* fatty acid microemulsion and packaging covered with aluminum foil affected the stability of the jelly drink during 4 weeks of storage. Microemulsion and aluminum foil have a significant effect on the stability of antioxidant activity, but have no significant effect on the stability of the Thiobarbituric Acid (TBA) number and the characteristics of the jelly drink including syneresis, pH, and Texture Profile Analysis (TPA) which includes hardness, cohesiveness, gumminess, springiness, and chewiness. Jelly drink fortified with *U. lactuca* fatty acid microemulsion covered with aluminum foil was the best treatment because it had the highest antioxidant activity resistance until the 4th week of storage, which was 51.41% inhibition.

Keywords: fatty acid, *U. lactuca*, microemulsion, jelly drink, storage