

Intisari

PENGARUH FOTOOKSIDASI SELAMA PENYIMPANAN TERHADAP KARAKTERISTIK MINUMAN JELI YANG DIFORTIFIKASI NANOKAPSUL KAROTENOID *Arthrospira platensis*

Penelitian ini bertujuan untuk mengetahui pengaruh fotooksidasi selama penyimpanan terhadap karakteristik minuman jeli yang difortifikasi nanokapsul karotenoid *Arthrospira platensis*. Tahapan penelitian dimulai dengan pembuatan minuman jeli yang difortifikasi 0,1% nanokapsul karotenoid *A. platensis*. Kemudian minuman jeli dilakukan penyimpanan dengan fotooksidasi (gelap dan terang) pada *refrigerator* dengan suhu $8\pm 4^{\circ}\text{C}$ selama 4 minggu. Data dianalisis menggunakan ANOVA dan diuji lanjut DMRT. Parameter yang diamati meliputi angka peroksida, angka anisidin, total oksidasi, karotenoid total, aktivitas antioksidan, kadar air, dan warna dari minggu ke-0 sampai minggu ke-4. Hasil penelitian menunjukkan bahwa paparan cahaya memberikan hasil yang signifikan terhadap kualitas minuman jeli. Minuman jeli yang difortifikasi nanokapsul karotenoid *A. platensis* dengan penyimpanan gelap memberikan hasil yang terbaik karena memiliki nilai total oksidasi paling rendah sebesar $26,22\pm 0,56$ mEq/kg, total karotenoid paling tinggi sebesar $8,83\pm 0,11$ $\mu\text{g}/\text{mg}$ db, dan aktivitas antioksidan paling tinggi sebesar $17,18\pm 0,30$ % inhibisi selama 4 minggu penyimpanan.

Kata kunci: fortifikasi, fotooksidasi, minuman jeli, nanokapsul karotenoid *Arthrospira platensis*, penyimpanan

Abstract

THE EFFECT OF PHOTOOXIDATION DURING STORAGE ON CHARACTERISTICS OF JELLY DRINKS FORTIFIED BY NANOCAPSULES CAROTENOID OF *Arthrospira platensis*

This research aims to determine the effect of photooxidation during storage on characteristics of jelly drinks fortified with *Arthrospira platensis* carotenoid nanocapsules. The research stages began by making jelly drinks with fortified by 0,1% nanocapsules carotenoid of *A. platensis*. Then the jelly drinks was storage by photooxidation (dark and bright) in a refrigerator at $8\pm 4^{\circ}\text{C}$ for 4 weeks. Data were analyze using ANOVA and posthoc by DMRT. The parameters observed included peroxide value, anisidine value, total oxidation, total carotenoids, antioxidant activity, water content, and color from week-0 to week-4. The results showed that light exposure gave significant result on the quality of jelly drinks. Jelly drinks fortified with *A. platensis* carotenoid nanocapsules with dark storage gave the best results because it had the lowest total oxidation at $26,22\pm 0,56$ mEq/kg, the highest total carotenoids level at $8,83\pm 0,11$ $\mu\text{g}/\text{mg}$ db, and the highest antioxidant activity at $17,18\pm 0,30$ % of inhibition during 4 weeks storage.

Keywords: fortification, jelly drinks, nanocapsules carotenoid of *Arthrospira platensis*, photooxidation, storage