

Intisari

PENGARUH SUHU DAN KEMASAN TERHADAP KARAKTERISTIK MINUMAN JELI YANG DIFORTIFIKASI NANOKAPSUL KAROTENOID *Arthrospira platensis* SELAMA PENYIMPANAN

Penelitian ini bertujuan untuk mengetahui pengaruh suhu dan kemasan terhadap karakteristik minuman jeli yang difortifikasi nanokapsul karotenoid *A. platensis* selama penyimpanan. Tahapan penelitian dimulai dengan pembuatan minuman jeli nanokapsul karotenoid dari *A. platensis*, minuman jeli ditambah nanokapsul karotenoid dengan konsentrasi 0,1%. Kemudian minuman jeli disimpan pada 4 kondisi berbeda, yaitu suhu 30°C, suhu 30°C kemasan alumunium foil, suhu 10°C, dan suhu 10°C kemasan alumunium foil. Minuman jeli disimpan selama 4 minggu pada masing-masing kondisi penyimpanan. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) dua faktor, yaitu suhu dan kemasan. Data dianalisis menggunakan ANOVA dan diuji lanjut DMRT. Parameter yang diamati meliputi kadar karotenoid total, aktivitas antioksidan, nilai pH, nilai sineresis dan nilai proksimat. Pengujian kadar karotenoid total, aktivitas antioksidan, nilai pH, dan nilai sineresis dilakukan setiap minggu. Nilai proksimat meliputi uji kadar air, kadar abu, kadar protein, kadar lemak, dan kadar serat pangan dilakukan pada minggu ke-0 dan minggu ke-4. Hasil penelitian menunjukkan bahwa suhu rendah dan kemasan alumunium foil memberikan pengaruh signifikan pada kadar karotenoid total, aktivitas antioksidan, dan sineresis. Suhu dan kemasan tidak berpengaruh terhadap nilai pH dan nilai proksimat. Kondisi penyimpanan terbaik adalah penyimpanan pada suhu 10°C dengan kemasan alumunium foil karena mempunyai kadar karotenoid total $15,23 \pm 0,16$ µg/mg db dan aktivitas antikosidan paling tinggi sebesar $46,05 \pm 0,98$ % inhibisi, serta sineresis paling kecil sebesar $1,52 \pm 0,01$ mg/menit selama 4 minggu penyimpanan.

Kata kunci : kemasan, minuman jeli, nanokapsul karotenoid *A. platensis*,
penyimpanan, suhu

Abstract

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

This study aims to determine the effect of temperature and packaging on characteristic of jelly drinks fortified with carotenoid nanocapsules *A. platensis* during storage. The research stages began by making jelly drinks of carotenoid nanocapsules from *A. platensis*, jelly drinks added with carotenoid nanocapsules with 0.1% of concentration. Then the jelly drink was stored in 4 different conditions, namely storage at 30°C, storage at 30°C with aluminum foil packaging, storage at 10°C, and storage at 10°C with aluminum foil packaging. The jelly drinks were stored for 4 weeks under each storage condition. This study used a completely randomized design (CRD) with two factors, the temperature and packaging. Data were analyzed using ANOVA and posthoc by DMRT. The parameters observed included total carotenoid levels, antioxidant activity, pH value, syneresis value and proximate value. Total carotenoid levels, antioxidant activity, pH value, and syneresis value were tested every week. Proximate values include tests of moisture content, ash content, protein content, fat content and dietary fiber content carried out at week 0 and week 4. The results showed that low temperature and aluminum foil packaging had a significant effect on total carotenoid levels, antioxidant activity, and syneresis. Temperature and packaging do not significantly affect pH and proximate values. The best storage condition is storage at 10°C with aluminum foil packaging because it is able to provide the highest total carotenoid levels at $15,23 \pm 0,16$ $\mu\text{g}/\text{mg}$ db and the highest antioxidant activity at $46,05 \pm 0,98$ % of inhibition, as well as the most lowest syneresis at $1,52 \pm 0,01$ mg/minute during 4 weeks storage.

Keywords : jelly drinks, nanocapsuled carotenoid of *A. platensis*, packaging, storage, temperature