MIKROEMULSI KAROTENOID *Arthrospira platensis* SEBAGAI PENGHAMBAT KERUSAKAN FOTOOKSIDATIF PADA *GELATO*

INTISARI

Penelitian ini dilakukan untuk mengetahui pengaruh penambahan mikroemulsi karotenoid *Arthrospira platensis* terhadap kerusakan fotooksidatif pada produk *gelato*. Penelitian dilakukan dengan menguji *gelato* yang ditambahkan mikroemulsi karotenoid sebanyak 2 dan 4 ppm. Sampel *gelato* diberi perlakuan penyimpanan gelap dan terang (fotooksidasi) dengan diberikan paparan cahaya 650 lux pada freezer dengan suhu -20^{o}C selama 4 minggu. Pengamatan pengaruh fotooksidasi terhadap *gelato* dilakukan dengan beberapa uji yang diamati dari minggu ke-0 sampai minggu ke-4 meliputi total karotenoid, aktivitas antioksidan, angka peroksida, angka anisidin, total oksidasi, kadar air, warna, stabilitas emulsi, *first dripping time*, *melting rate*. Data hasil pengujian diolah menggunakan ANOVA dan uji lanjut DMRT. Hasil terbaik dari ditunjukkan pada *gelato* mikroemulsi karotenoid 4 ppm dengan penyimpanan gelap. Hasil tersebut berdasarkan nilai total oksidasi paling rendah sebesar 12.60±0.95 mEq/kg, total karotenoid paling tinggi sebesar 0.56±0.01 µg/mg db, dan aktivitas antioksidan dengan nilai 24.67±2.08 % inhibisi.

Kata kunci : *Arthrospira platensis*, Karotenoid, Mikroemulsi, *Gelato*, Fotooksidasi

Abstract

CAROTENOID MICROEMULSION *Arthrospira platensis* AS AN INHIBITTION OF PHOTOOXIDATIVE DESTRUCTION IN *GELATO*

This research was conducted to determine the effect of adding *Arthrospira platensis* carotenoid microemulsion on the photooxidative damage in *gelato* products. The research was carried out by testing *gelato* that added 2 ppm and 4 ppm of carotenoid microemulsion. *Gelato* samples were given dark and light (photo-oxidation) storage treatments by giving them 650 lux light exposure inside a freezer at -20oC for 4 weeks). Observation of the effect of photooxidation on *gelato* was carried out by several tests including total carotenoids, antioxidant activity, peroxide value, anisidin value, total oxidation, water content, color, emulsion stability, first dripping time, and melting rates which were observed from week 0 to week 4. The data of the test results were processed using ANOVA and posthoc by DMRT. The addition of carotenoids microemulsion at the level of 4 ppm effectively inhibited photooxidation on *gelato* with total oxidation at 12.60 ± 0.95 mEq/kg, total carotenoid value of 0.56 ± 0.01 µg/mg db, and antioxidant activity at of 24.67 ± 2.08 % of inhibition during 4 weeks storage.

Keywords: *Arthrospira platensis*, Carotenoids, Microemulsions, *Gelato*, Photooxidation