

PENGARUH KAROTENOID *Arthrospira platensis*. PADA MINYAK IKAN TERHADAP KERUSAKAN FOTOOKSIDASI SELAMA PENYIMPANAN

INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan ekstrak karotenoid *Arthrospira platensis* terhadap stabilitas oksidatif minyak ikan pada perlakuan fotooksidasi 4000 lux selama masa penyimpanan. Pengaruh penambahan ekstrak karotenoid *A.platensis* terhadap kerusakan minyak ikan dapat dilihat dari parameter uji angka peroksida, angka anisidin, angka total oksidasi, aktivitas antioksidan dan kadar karotenoid total. Penelitian ini terdiri dari 2 faktor yaitu: 5 perlakuan faktor antioksidan (konsentrasi ekstrak karotenoid *A.platensis* 200, 400 dan 600 ppm, kontrol tanpa penambahan antioksidan dan BHT 150 ppm) dan 2 perlakuan faktor jenis penyimpanan (penyimpanan gelap dan terang). Rancangan percobaan adalah metode eksperimental rancangan acak lengkap pola faktorial dengan 3 kali ulangan. Penyimpanan minyak ikan dilakukan selama 4 minggu dengan pengamatan setiap 1 minggu sekali. Berdasarkan hasil penelitian, angka peroksida yang diamati berada jauh dari ambang batas atas SNI dan CODEX WHO yaitu lebih besar dari 5 > meq/kg begitu pula dengan angka anisidin dan angka total oksidasi. Perlakuan antioksidan hanya mampu melindungi minyak ikan sampai minggu pertama. Hasil penelitian juga menunjukkan kadar karotenoid dan aktivitas antioksidan yang terus menurun selama masa penyimpanan. Ekstrak karotenoid *A.platensis* 600 ppm menjadi perlakuan terbaik diantara perlakuan antioksidan lainnya. Jenis penyimpanan juga sangat berpengaruh dalam stabilitas oksidatif minyak ikan selama proses fotooksidasi.

Kata kunci : antioksidan, *Arthrospira platensis*, fotooksidasi, karotenoid, minyak ikan.

ABSTRACT

***Arthrospira platensis*. CAROTENOID EFFECT IN FISH OIL AGAINST PHOTOOXIDATIVE STRESS DURING STORAGE**

The objective of this research was to study the effect of *Arthrospira platensis* carotenoid extract on the oxidative stability of fish oil while being in the photooxidation treatment 4000 lux during the storage period. The effect of *A. platensis* carotenoid extract on fish oil damage was assayed from the oxidative and antioxidant parameters such as peroxide value, anisidine value, total oxidation value, antioxidant activity and total carotenoid content. The study consists of 2 factors: 5 antioxidant factor treatments (concentrations of *A. platensis* carotenoid extract 200, 400 and 600 ppm, control without the addition of antioxidants and BHT 150 ppm) and 2 type of storage treatments (dark and light storage). Experimental design was using complete random design as the method with 3 replication. Fish oil storage was stored for 30 days while being observed every week. The results showed, the peroxide value observed was far beyond the upper threshold regulated by SNI and CODEX WHO which was greater than 5 > meq/kg as well as the anisidine and total oxidation value. Antioxidant treatments can only protect fish oil until the first week of storage. The results also showed that carotenoid levels and antioxidant activity continue to decline during the storage period. *Arthrospira platensis* carotenoid extract 600 ppm was the best treatment among other antioxidant treatments. The type of storage was also very influential in the oxidative stability of fish oil during the photooxidation process.

Keywords : antioxidant, *Arthrospira platensis*., carotenoid, fish oil, photooxidation.