

INTISARI

PENGARUH MIKROEMULSI FIKOSIANIN *Arthrospira platensis* DALAM MINYAK IKAN TERHADAP FOTOOKSIDASI SELAMA PENYIMPANAN

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Minyak ikan merupakan salah satu jenis minyak hewani yang diperoleh dari jaringan tubuh ikan dengan kandungan vitamin A, D, dan asam lemak esensial omega-3. Kandungan *Polyunsaturated Fatty Acid* (PUFA) yang tinggi menyebabkan minyak ikan mudah teroksidasi oleh paparan cahaya (fotooksidasi). Penelitian ini bertujuan untuk mengetahui pengaruh penambahan mikroemulsi fikosianin *Arthrospira platensis* terhadap stabilitas oksidatif minyak ikan pada perlakuan fotooksidasi 4000 lux selama penyimpanan. Rancangan percobaan yang digunakan yaitu rancangan acak lengkap faktorial dengan 3 ulangan. Penelitian ini terdiri dari 2 faktor yaitu faktor antioksidan dan faktor jenis penyimpanan. Faktor antioksidan terdiri dari 5 perlakuan yaitu perlakuan kontrol tanpa penambahan antioksidan, BHT 150 ppm, dan mikroemulsi fikosianin 50, 100, serta 150 ppm. Faktor cahaya terdiri dari penyimpanan gelap dan terang. Penyimpanan dilakukan selama 4 minggu dengan pengujian sampel pada minggu ke-0, 1, 2, 3 dan 4. Berdasarkan hasil penelitian, angka peroksida, angka anisidin, dan total oksidasi minyak ikan melebihi ambang batas SNI dan mengalami peningkatan selama penyimpanan. Perlakuan penambahan antioksidan fikosianin hanya mampu melindungi minyak ikan hingga minggu pertama penyimpanan. Hasil penelitian juga menunjukkan terjadinya penurunan kadar fikosianin dan aktivitas antioksidan. Penambahan ekstrak fikosianin 50 ppm dalam sistem mikroemulsi minyak ikan memberikan hasil terbaik diantara perlakuan antioksidan lainnya. Jenis penyimpanan pada kondisi gelap dan terang juga berpengaruh terhadap stabilitas oksidatif minyak ikan selama fotooksidasi.

Kata kunci : fikosianin, *Arthrospira platensis*, mikroemulsi, minyak ikan, fotooksidasi

ABSTRACT

Arthrospira platensis PHYCOCYANIN MICROEMULSION EFFECT IN FISH OIL AGAINST PHOTOOXIDATION DURING STORAGE

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Fish oil is extracted from fish body tissue that contains vitamin A, D, and omega-3 which are essential fatty acids. The high of *Polyunsaturated Fatty Acid* (PUFA) in fish oil causes it get easily oxidized induced by light (photooxidation). The aim of this research was to study the effect of *Arthrospira platensis* phycocyanin microemulsion on the oxidative stability of fish oil while being in the 4000 lux photooxidation treatment during storage. The experimental design was using a complete random design (CRD) factorial with 3 replications. This research consists of 2 factors: antioxidant and storage treatments. The antioxidant factor consisted of 5 treatments (control without the addition of antioxidants, BHT 150 ppm, 50, 100, and 150 ppm phycocyanin microemulsion) and 2 types of storage treatments (dark and light storage). Fish oil was stored for 4 weeks while being observed at 1st, 2nd, 3rd, 4th week. The results showed that the peroxide value, anisidine value and total oxidation of fish oil exceeded the SNI threshold and increased during storage. The addition of antioxidant phycocyanin can only protect fish oil until the first week of storage. The results also showed phycocyanin levels and antioxidant activity decline during the storage period. The addition of 50 ppm phycocyanin extract in fish oil microemulsion system gave the best results among other antioxidant treatments. The type of storage was also influential the oxidative stability of fish oil during photooxidation.

Keyword : phycocyanin, *Arthrospira platensis*, microemulsion, fish oil, photooxidation