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ADDITIVES FOR OXIDATIVE DURABILITY OF FISH OIL-A REVIEW

Sugaina Sulaiman M.S.*[1] and Dhanya P.R.[2]

[1] *PG & Research Department of Aquaculture and Fishery Microbiology, MES Ponnani College, Ponnani*
[2] *Department of Aquaculture, MES Asmabi College, P. Vemballur, 680671*
*Email: sugainamsulaiman@gmail.com

Fish oil is one of the optimal sources of omega 3 fatty acid. Studies proves that regular consumption of oils enriched from fatty fishes such as mackerel, oil sardine and reduces cardio vascular disease, hyper tension, menopause, inflammatory disease etc. and improves overall health. Oxidative durability is the primary risk factor for fish oil products. The oxidative stability depends upon many factors such as quality of raw fish, composition of fatty acid, impurities in oil, processing, packaging, storage and other related aspects. The oxidative degradation of fish oil results in the formation of undesirable compounds, such as peroxides and aldehyde, which negatively impact sensory attributes and safety. Anti-oxidation is one of the effective methods to reduce or extend the shelf life of fish oil, but chemical anti-oxidation treatment leads to adverse effect to human health. Codex alimentarious allowed adding synthetic additives such as butylated hydroxytoluene (BHT), butylated hydroxyanisole (TBA), *tert*-butylhydroquinone (TBHQ), and propyl gallate (PG), in fish oil. Usage of this additives leads to allergy, headache, asthma, and dermatitis. Natural antioxidants derived from spices offer a promising alternative to synthetic options. The plants from the family, Zingiberaceae, Piperaceae, Lauraceae, Lamiaceae,Myrtaceae, Apiaceae, Alliaceae, and Lamiaceae contain bio active compounds with phenolic potent anti-oxidative properties, which can effectively inhibit lipid oxidation. The various studies proposed that the usage of natural extract from spices add in vegetable oils increases the anti-microbial (anti-bacterial, anti-fungal properties) and anti-oxidant properties. Natural alternatives not only improve the oxidative stability of fish oil but also align with consumer preferences for cleaner, safer, and more health-conscious products.

Keywords: Fish oil, Chemical Anti-oxidants, Natural Anti-oxidants, Oxidative stability