

Photo-oxidation Stability of Patin (*Pangasius hypophthalmus*) and Red Palm Mixed Oil

Dewi Fortuna Ayu^{1*}, Ariyano Pinem¹, Akhyar Ali¹, and Andarini Diharmi²

¹Department of Agricultural Technology, Riau University, Pekanbaru, 28293, Indonesia

²Departement of Fisheries Product Technology, Riau University, Pekanbaru, 28293, Indonesia

Fortuna_ayu2004@yahoo.com, ariyanopinem@gmail.com, akhyar_ali@rocketmail.com,
rini_abrar@yahoo.com

*Corresponding Author

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Abstract: Patin (*Pangasius hypophthalmus*) oil (PO) which was derived from wastes of patin fish smoked processing in Pulau Gadang Village, Kampar Regency has a potential to be developed as a source of edible oil. Patin oil has a high content of unsaturated fatty acid which can cause the oil easily oxidized to become rancid. Addition of red palm oil (RPO) which has a composition of saturated fatty acids in high level and rich in carotene and tocopherol components can be used to improve photo-oxidation stability of PO during storage. This research aims to assess the influence of RPO addition against photo-oxidation stability of PO and RPO mixed oil. Research was done by mixing PO and RPO in ratio of 20:80, 50:50, 80:20, and 100% PO as control. Mixed oil was put into transparent bottle and then exposed to light at an intensity of 10,000 lux and 30 ± 2 ° C in a storage box for 14 d. Peroxide value (PV), TBA value, carotene content, and rancimat test of mixed oil were evaluated during storage. The results showed that an increase of PV during storage followed zero order kinetics model, their increase rates were higher at higher PO ratio which had k values of 0.15, 0.15, 0.20, and 0.20 mequiv/kg d, respectively. The highest k value of TBA value was 100% PO. The content of carotene decreased during storage, where the sharpest decline occurred at a mixed oil ratio of 80:20. The result of rancimat test showed that an increase of RPO addition was able to improve the photo-oxidation stability of PO, PO dan RPO mixed oil can be developed into ingredient of functional food.

Keywords: Patin oil, red palm oil, photo-oxidation