

Panita Kulthaparamee 2014: Effect of Encapsulated Oregano Extracts on Growth Performance, Fish Health and Fillet Quality in Red Tilapia (*Oreochromis niloticus*). Master of Science (Aquaculture), Major Field: Aquaculture, Department of Aquaculture. Thesis Advisor: Associate Professor Orapint Jintasataporn, Ph.D. 60 pages.

The study on effect of encapsulated oregano extracts on growth performance fish health and fillet quality of red tilapia was conducted. The study was assigned in CRD with 4 treatments and 4 replicates. Red tilapia with average weight of  $163.4 \pm 10.7$  g/fish, were stocked in 1,000 L fiber tank at density of 10 fish/tank. In 12 weeks trial, red tilapia were fed 3 times a day with isonitrogenous of 30% CP and diets supplemental encapsulated oregano extracts 4 levels, 0, 0.5, 1.0, 2.0 g/kg feed. The results showed no statistical difference ( $P > 0.05$ ) on growth performance in term of average daily gain (ADG), and feed conversion ratio (FCR). Blood glucose, Immunoglobulin(IgM) and hepatosomatic index have no statistical different ( $P > 0.05$ ). Dietary treatment using oregano extracts showed no improvement ( $P > 0.05$ ) on growth performance and fish health.

Focusing on fillet quality after feeding trial, diet containing encapsulated oregano essential oil presented antioxidant effects by retarding lipid oxidation in fish fillet during chilled at  $4^{\circ}\text{C}$  for 48 hours. The TBA value of control group was  $1.257 \pm 0.120$  mg.malonaldehyde/kg fillet which was highest ( $P < 0.05$ ). This indicated the deterioration of lipid in fillet. Whereas TBA in those fishes fed diet containing 0.05- 0.2% encapsulated oregano extracts ranged between 0.366-0.457 mg.malonaldehyde/kg fillet. Therefore supplemental encapsulated oregano extracts in red tilapia diet can retard the deterioration of the fish fillet and prolong shelf life of the product during chilled.

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Thesis Advisor's signature