

Chadatarn Tondiew 2007: Effect of Noni (*Morinda citrifolia*) and Kalmegh (*Andrographis paniculata*) on Coloration and Phagocytosis in Goldfish (*Carasius auratus*). Master of Science (Aquaculture), Major Field: Aquaculture, Department of Aquaculture. Thesis Advisor: Associate Professor Orapint Jintasataporn, Ph.D.
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Effect of Noni (*Morinda Citrifolia*) and Kalmegh (*Andrographis Paniculate*) on coloration and phagocytosis in goldfish (*Carasius Auratus*) was studied in goldfishes of 11.45 ± 1.72 g. Fish were fed low carotenoid diet for 4 weeks in order to get the low color intensity. Then, all fish were fed with carotenoid testing diet for the other 4 week to investigate the coloration and phagocytosis activity. After that, fish were fed low carotenoid again for the last 4 weeks. The studied was divided into 4 experiments. Firstly, study on amount of total carotenoid in Noni and Kalmegh. It was found that total carotenoid in Noni and Kalmegh were 445.21 ± 9.13 and 316.80 ± 18.52 $\mu\text{g/g}$, respectively. Secondly, study the effect of dietary fiber on carotenoid absorption for 4 weeks, the result indicated that increasing fiber in feed was retarded the red color and accumulation of total carotenoid in fish blood and muscle ($p < 0.05$). Thirdly, study the effect of Noni and Kalmegh on growth performance, coloration and phagocytosis in goldfish. The results presented that carotenoid showed low effect on growth performance ($p > 0.05$). Moreover, it also found that feeding Noni and Kalmegh with astaxanthin enhanced the red color and the stability of color ($p < 0.05$). On the other hand, fish fed astaxanthin presented the higher carotenoid in fish blood better than group of 10 % Noni and 10 % Kalmegh. However, goldfish fed 10 % Noni with 0.25 % astaxanthin demonstrated the highest carotenoid accumulation in muscle ($p < 0.05$). The lymphocytic activity in terms of percentage of phagocytosis and phagocytosis index was high ($p < 0.05$) in group of fish fed with 10% Noni and 10% Kalmegh incorporated with astaxanthin. Next, Lymphocytic activity was increased ($p < 0.05$) within 6 days after treatment. Therefor, Feeding 10 % Noni and Kelmegh were enhanced red color intensity and Lymphocytic activity in goldfish.

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Student's signature

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