

ADD TURMERIC POWDER IN FEED OF THE SURVIVAL FRY NILE TILAPIA (*Oreochromis niloticus*)

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ABSTRACT

The immune system has been formed in the fry stadia but has not been functioning optimally so that less efficient resist infections of pathogenic microorganisms and susceptible to disease. Therefore, it is necessary to improve the immune system. Feeding with adequate and balance nutrient content will affect the health and survival of fish. Antioxidant is a feed additive that is used to avoid the oxidation process in the feed, but can also be used for disease prevention and health. The main compounds contained in the rhizome of turmeric is a curcuminoid compounds that have antioxidant properties. This research aims to determine the add of turmeric powder in the feed to the survival of the fry Nile tilapia (*Oreochromis niloticus*). The research method is an experimental method to completely randomized design (CRD) which consists of 5 treatments and 4 replications. The main parameter is survival of Nile tilapia fry, while support parameters are water quality observation and the average weight gain of Nile tilapia fry.

The result of ANOVA showed that the treatment gave a significantly different effect on the survival of Nile tilapia fry ($p < 0.05$). The survival of tilapia fry in P3 (6 g/kg) and P2 (3 g/kg) is higher than P1 (1 g/kg). This is because the content of curcuminoids in P3 and P2 more can neutralize free radicals caused by the disease optimally, while the content of curcuminoids P1 less able to neutralize free radicals that occur as a result of the disease. The low survival of tilapia fry in P4 is affected by the concentration of turmeric powder suspected which include too high content of curcuminoids, the content of tannins and alkaloids. The content of tannins and alkaloids which give a sense of sepat and are toxic to fish, and curcumin has changed the function of the antioxidant to prooxidant at high concentrations of turmeric powder. The range of water quality during the experiment are: water temperature (25-29 °C), pH (7-8) and the dissolved oxygen (4-6 mg/l) and ammonia (0.003-0.03 mg/l).

KEYWORDS : *Tilapia Fry, Turmeric Powder, Feed, Antioxidants, Survival*