

**NON SPECIFIC IMMUNITY AND SURVIVAL RATE OF
HYBRID CATFISH (*Clarias gariepinus* >< *C. macrocephalus*)
CULTURED WITH ARTIFICIAL SUBSTRATES AND
IMMUNOSTIMULANTS**

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ABSTRACT

Hybrid catfish (*Clarias gariepinus* >< *C. macrocephalus*) is a new variant of catfish which many farmers interested. One of the ways to improve the productivity intensive of farming is by added the artificial substrates, addition of vitamin C in food and probiotics modified. The use of artificial substrates on hybrid catfish cultured impact on changes in non specific immunity in the form of stress due to changes in farming environment and observed through the blood profiles. This research was aimed to study the effect of the added of the artificial substrates toward the percentage hematocrit, total leukocytes, differential leukocyte which consisted of lymphocytes, monocytes and neutrophils. Observations were conducted on day of 0, day of 15, day of 30 and day of 45. The results showed that the addition of artificial substrates affect total leukocytes and monocytes of hybrid catfish ($P < 0,05$). The results showed that the addition of artificial substrates not affect percentage of hematocrit, lymphocytes and neutrophil ($P > 0,05$). Survival rate during cultivation showed the addition of artificial substrates is better than no the addition of artificial substrates but not significantly ($P > 0,05$).

Ke-ywords: artificial pond bottom, vitamin C, probiotics, haematological, stress.

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