

Use of multi-strain probiotics in Linseed meal based diet for *Labeo rohita* fingerlings

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Current research was conducted to investigate the influence of probiotics added linseed meal based diet on hematology and carcass composition of *Labeo rohita* juveniles. Due to unavailability of these strains fingerlings are unable to digest and absorb their food properly. Hematological parameters are essential diagnostics, used to estimate the health status of fish. The usage of probiotics for fish health improvement is becoming common due to higher demand for environment friendly culture system in water. Linseed meal was used as test ingredient to prepare six experimental test diets by the addition of probiotics (0, 1, 2, 3, 4 and 5 g/kg) and 1% indigestible chromic oxide. According to their live wet weight, five percent feed was given to fingerlings twice a day. Fish blood and carcass samples (Whole body) were taken for hematological and carcass analysis at the end of experiment. Results indicated that probiotics supplementation has a critical role in improvement of fingerlings' body composition and hematological indices. Highest carcass composition (crude protein; 18.72%, crude fat; 8.80% and gross energy; 2.31 kcal/g) was observed in fish fed with test diet II that was supplemented with probiotics (2 g/kg). Moreover, maximum RBCs number ($2.62 \times 10^6 \text{mm}^{-3}$), WBCs ($7.84 \times 10^3 \text{mm}^{-3}$), PCV (24.61), platelets (63.85) and hemoglobin (7.87) had also been reported in the fish fingerlings fed on 2 g/kg of probiotics supplemented diet. Present findings showed that probiotics supplementation at 2g/kg level in linseed by-product based diet was very useful for the enhancement of overall performance of *L. rohita* fingerlings in contrast to fingerlings fed on other test and control diet.

Keywords: linseed meal, *L. rohita*, hematology, probiotics, carcass composition.

Significance: Present results showed that probiotics supplementation was helpful to develop a cost-effective as well as eco-friendly fish feed by using plant by-product meal based diet.