



Evaluation of Carp Gut Isolated Probiotic Bacteria *Lactobacillus Plantarum* FLB1: Hematological and Biochemical Alterations in Rohu *Labeo rohita* (Ham.)

Prem Kumar, Vaneet Inder Kaur*, Anuj Tyagi¹ and Shanthanagouda A. Holeyappa¹

Department of Aquaculture, College of Fisheries

¹Department of Aquatic Environment, College of Fisheries

Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana-141 004, India

*E-mail: vinnygulati@gmail.com

Abstract: Feeding trial (120 days) was conducted to evaluate the effects of dietary supplementation of probiotic bacteria *Lactobacillus plantarum* FLB1, isolated from the intestine of Indian major carp (*Labeo rohita*) on the hematological and biochemical parameters of *L. rohita* fingerlings. Six experimental diets were formulated containing basal diet as control (T1) and five graded levels of *L. plantarum* at 10^4 , 10^5 , 10^6 , 10^7 , 10^8 cfu g⁻¹ (T2-T6) basal diet. Seven hundred and twenty fingerlings (mean body weight 5.9g) were distributed randomly in cemented tanks (20m²) and fed with different experimental diets. Hb content, TEC, and Ht of fish fed with *L. plantarum* at 10^6 and 10^8 cfu g⁻¹ diet were significantly higher as compared to other experimental diets and control. Likewise, TLC values improved in probiotic fed fish, however, the differences were insignificant. Significantly decreased values for ESR and improved red cell indices viz., MCV, MCH and MCHC too revealed positive effect in probiotic fed fishes. There were significant difference ($P \leq 0.05$) in the serum biochemical parameters with maximum values for protein and globulin in T6 and minimum value for Alb/Glb in T5 and T6. Hence, it can be concluded that dietary supplementation of *L. plantarum* @ 10^8 cfu g⁻¹ diet is effective in enhancing the immunity and overall health status of *L. rohita*.

Keywords: *L. rohita*, Probiotics, *Lactobacillus plantarum*, Fish health, Hematology
