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Immunostimulatory effect of *Limonia acidissima* (L.) fruit supplemented feed on *Cirrhinus mrigala* (Ham.) against *Aeromonas hydrophila* MTCC 1739

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Indian major carp *Cirrhinus mrigala* were subjected to feeding trials using *L. acidissima* (L) fruit for assessing the immunostimulatory effects of the tropical fruit as a feed supplement. *C. mrigala* was fed with 0% (control), 1.5% (group I), 3% (group II), and 6% (group III) *Limonia* fruit incorporated diet provided for 30 days and 60 days. Growth assessment after 30 and 60 days revealed significant ($p < 0.05$) weight gain and Feed Conversion Ratio between control and the experimental groups. Blood samples were collected at 30 days and 60 days time interval for analyzing the non-specific (RBC, WBC count, serum lysozyme activity, serum antiprotease activity) and cellular (intracellular respiratory burst, serum myeloperoxidase activity, protein, albumin, and globulin content) immune response study. The results indicated that *L. acidissima* fruit supplemented diet significantly ($p < 0.001$) enhanced the non-specific immune parameters at 30 and 60 days in experimental groups compared to the control diet. Among the experimental groups, significant increase in non-specific immune response was observed in group II (3%) after 30 and 60 days. Post exposure disease resistance analyses against *Aeromonas hydrophila* MTCC 1739 revealed that the Relative Percent Survival rate (RPS) observed in experimental groups were higher when compared to the control group. To our knowledge this is the first report on *L. acidissima* (L), an underutilized tropical fruit, as a dietary supplement for fish. All these experimental results elucidate that *L. acidissima* (L) fruit enhanced the immunity of fresh water fishes.

Biography

P Srinivasan has completed his Masters in Applied Microbiology by 2010 at the University of Madras, Chennai, Tamilnadu, India. He also has completed his Post graduate diploma in Molecular diagnostics by 2011 at Alagappa University, Karaikudi, Tamilnadu, India. Currently he is pursuing his PhD in Biotechnology at Karpagam University, Coimbatore, Tamilnadu, India. His area of research is on 'Aquaculture and Molecular Immunology' with special reference to immunostimulatory effects of medicinal plant *Limonia acidissima* (L.) fruit on fresh water fishes against *Aeromonas hydrophila*. He has actively participated and presented papers in 17 conferences and has published seven papers in peer reviewed journals.

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