

## The Bacterial-Yeast Consortium: A Better Probiotic Approach in Aquaculture

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The probiotics shield aquaculture against numerous diseases and is based upon their gut colonization, bile salts tolerance, extra cellular enzymes production, safety for the targeted aquaculture, enhancing the water quality, boost in immunity of the host species, host specie nutritional improvement via additional digestive enzymes, competitive inhibition of pathogenic bacteria and antimicrobial compounds production. Geotrichum candidum-01, Enterococcus faecium-01, Enterococcus hirae-01, F-03 (Fish Gastrointestinal isolate) and commercial consortia of probiotics were administered in different combinations in Labeo Rohitha (Rohu) to evaluate their impact on their growth parameters, health, haematology and digestive enzymes at 10<sup>9</sup> cfu g<sup>-1</sup> as a feed additive for 45 days. The highest % weight gain of 123.30±2.79 was observed in the group of L. rohita fed G. candidum+F-03 combined. This group also showed significant results in increasing the specific growth rate and WBCs count. In the present study, protease activity in L. rohita fed G. candidum-01 + E. faecium-01 (T5) in combination was significantly higher (P<0.05) as compared to control group of fish fed basal diet. While significantly

higher (P<0.05) amylase activity was observed in the group of fish fed F-03 (T4) supplemented diet. Cellulose activity was significantly high (P<0.05) in the group of fish fed Enterococcus hirae-01 (T3). The chemical analysis of dry mass of Labeo rohita fingerlings revealed 11.19% increase in the crude protein content and 46.93 % increase in crude fats content in comparison to the basal diet fed control group. We found that the synergistic effect of multi-strain potential probiotics can even produce better results in Labeo rohita by means of fast growth, better survival and high amount of crude protein and fats content. This study helped in diagnosing the importance of gastrointestinal isolates with potential probiotic abilities and they can be a better prospect for improving the health and growth abilities of aquaculture in the nearest future.

### Speaker Biography

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