

**ORL-F&HN-07****Effect of Multi-Strain Probiotics on the Growth and Survival of Rainbow Trout *Oncorhynchus mykiss***

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A study was conducted to assess the effect of multi-strain probiotics on the growth and survival of Rainbow trout (*Oncorhynchus mykiss*). The experiment was conducted for 131 days in concrete raceways of 3 m x 0.9 m in a completely randomized design with four treatments having 3 replicates each. The treatments include: T1- Control (Farm made pellet feed), T2- Farm made pellet feed+ 4 g probiotics/kg feed , T3- Farm made pellet feed + 5 g probiotics/kg feed and T4 Farm made pellet feed + 6 g probiotics/kg feed. The feed was made by mixing all the ingredients and grinded to a fine powder which was then extruded into pellet. The twelve concrete raceways were stocked with the fingerlings of Rainbow trout at the rate of 50 fish/ m<sup>2</sup> and the average stocking weight was 19.3±0.03 g/fish. The fish were fed with different experimental diets at the rate of 3% and 2% of body weight.

Different water quality parameters like water temperature, dissolved oxygen, pH, and ammonia, nitrite and nitrate were monitored throughout the culture period. The average final weight was significantly higher ( $p < 0.05$ ) in T4 (49.61±2.25 g/fish) compared to other treatments; T1 (40.98±1.64 g/fish), T2 (43.35±1.49 g/fish) and T3 (44.43±1.78 g/fish), which did not have any significant difference ( $p > 0.05$ ) among each other. The TWG was significantly higher ( $p < 0.05$ ) in T4 (122.84±2.38 kg/m<sup>2</sup>) compared to T3 (91.73±0.09 kg/m<sup>2</sup>) and T1 (60.49±1.38 kg/m<sup>2</sup>), while T2 (75.19±1.8 kg/m<sup>2</sup>) is at par with T1 and T3. The survival rate was significantly higher ( $p < 0.05$ ) in T4 (95.56± 2.2 %) compared to T1 (85.93± 4.86 %) with no significant difference ( $p > 0.05$ ) with other treatments. The blood plasma cortisol level was significantly lower in T4 (0.20 ± 0.13 ng/mL) than that in T1 (1.14 ± 0.54 ng/mL) and with no significant difference ( $p > 0.05$ ) with other treatments.

Thus, from present study it can be concluded that inclusion of multi-strain probiotics at the rate of 6 g probiotics/kg feed was better in terms of the growth and production of Rainbow trout and the inclusion rate can be increased further.

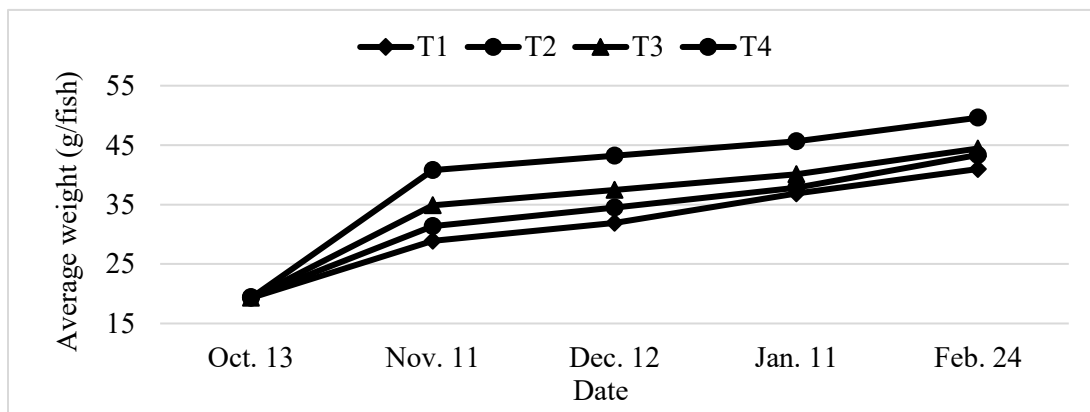


Figure: Average weight of Rainbow trout in different treatments during the study period.