

**INCLUSION OF WATER HYACINTH (*Eichhornia crassipes*) AS A PREBIOTIC ON YEAST (*Saccharomyces cerevisiae*) BASED FEED FOR GUPPY (*Poecilia reticulata*) JUVENILES**

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The use of probiotic and prebiotics in aquaculture has been less investigated. This experiment focused on determining the growth performance and stress tolerance of guppy juveniles (*Poecilia reticulata*) by inclusion of water hyacinth (*Eichhornia crassipes*) as a prebiotic on baker's yeast (*Saccharomyces cerevisiae*) based feed. Six diets (crude protein  $47 \pm 0.27\%$ ) were used as treatments with three replicates. Treatment C1 and C2 were considered as controls while T1, T2, T3 and T4 had a paste of water hyacinth 0.5%, 1.0%, 1.5% and 2.0% levels, respectively. A percentage of 1.5% yeast was used in treatments, except C1. Three weeks old fishes with an average body weight (BW) ( $0.10 \pm 0.02$  g) and an average standard body length (SL) ( $1.46 \pm 0.03$  cm) were randomly distributed at a stocking rate of 1 fish per liter. Fishes were fed twice a day for 10 weeks. Temperature ( $25 - 28^{\circ}\text{C}$ ), nitrite nitrogen ( $0 \text{ mgL}^{-1}$ ), pH (6.5 - 8) and volume of water (40 L) were maintained in aquarium condition. The average (BW) of the fish was measured weekly and the average (SL) was measured at the beginning and end of the experiment. At the end of the experiment, osmotic stress resistance and color differences of fish were analyzed. Specific growth rate (SGR), length gain (LG), weight gain (WG) and condition factor (K) were calculated. Treatment T3 exhibited a significantly higher ( $p < 0.05$ ) BW ( $0.44 \pm 0.01$  g), SL ( $3.07 \pm 0.02$  cm), LG ( $94.19 \pm 5.59\%$ ), WG ( $299.39 \pm 11.51\%$ ) and SGR ( $1.98 \pm 0.04\% \text{ day}^{-1}$ ). Further, the guppies in T3 had a significantly higher ( $p < 0.05$ ) stress resistance than C1 within an hour. Fish color and K were not influenced ( $p > 0.05$ ) by the treatments. Hence, inclusion of 1.5% of water hyacinth on yeast based feed enhances the growth performance and stress resistance in guppy juveniles.

**Keywords:** *Eichhornia crassipes*, Prebiotic, Growth performance, Stress tolerance