Effects of Probiotics and Aquatic Vegetation on the Growth of Cyprinidae

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The purpose of the research determined if the growth of fish would be affected by the presence or absence of aquatic plants or probiotics. Four identical twenty gallon tanks housed ten fish for six weeks. The control tank contained water, gravel, and fish while the treatment tanks contained control materials and probiotics, plants, or both probiotics and plants. Cyprinidae fish were given equal amounts of food and kept at consistent temperatures with identical water filtration systems. Baseline mass readings and water quality testing were compared to bi-monthly masses to measure growth and water quality fluctuations. The Cyprinidae had growth of 12 grams in the control group, 21 grams in plant only group, 28 grams in probiotics only group and 32 grams in the plant and probiotic groups. The null hypothesis was rejected due to final growth in grams had a t value of 3.36 greater than the critical t value of 3.18 and a p value less than 0.05. The alternate hypothesis was rejected due to the probiotic only treatment group having the largest percentile gain. The chi square value of 8.74 over the critical value of 6.25 indicated significant differences between the control and the treatment groups. Probiotics increased growth of fish by 133% compared to a 29% growth in the control group. Plants and probiotics treatment group had a 120% growth while the plant only group of fish increased 72%. Application of research could influence use of probiotics and aquatic vegetation in aquaculture industry to increase feed efficiency.