

Effect of Methyltestosterone Treated Feed on Growth and Gonadal Histology of Red Blonde Guppy Fish (*Poecilia reticulata*)

S.N.T.I. Sampath* and M.P.K.S.K. De Silva

Department of Zoology, University of Ruhuna, Matara, Sri Lanka

In ornamental guppy fish (*Poecilia reticulata*) industry, male fish has higher demand as they are more colourful and attractive than females. Female guppy could be sex reversed and masculinized by using androgenic hormones. Present study assessed the effect of Methyltestosterone (MT) on growth and gonad differentiation of guppy fish. Three diets used in the study (A, B and C) had similar ingredients in same proportions except in diet A. In diet A, twenty five percent of fish meal was replaced by autolyzed prawn shells. Methyltestosterone was added (100 ppm/ Kg) to diets A & B and diet C was the control of the experiment. Guppy fish ($0.009\text{g}\pm 1.66\times 10^4$) was stocked in glass tanks of size 18"x8"x6" at 20 fish /tank. Each treatment was triplicated. Mean body weight of fish in each tank was measured once every two weeks. After 120 days gonads were preserved and histological sections were taken. Highest body weight gain ($0.225\text{g}\pm 0.007$), relative growth (44.67 ± 6.53), survival rate (80.0% 2,7.64) was observed in fish fed with diet C. Mean body weight gain of fish fed with diet C was significantly different ($P=0.04$) from fish fed with diet B indicating that MT exerts negative effect on growth. Male to female ratio in control group was approximately 1:3 and 100% males were observed in fish fed with MT treated feed. Testis of male fish in control group contained spermatozuogmata (SZ) which are regular shaped cysts with clearly distinguished and methodically arranged different stages of spermatogenesis, while masculinized female fish had a different gonadal histology with irregular shaped SZ having stages of spermatogenesis not clearly distinguished and not arranged methodically.

Key words: Methyltestosterone, sex reversal, Masculinization, Guppy