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Effects of varying dietary protein and 17 α -Methyltestosterone on growth and survival of fry of *Labeo rohita* (Hamilton-Buchanan)

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Recent studies have demonstrated that the naturally-occurring (testosterone, 11-ketotestosterone) as well as synthetic androgens (dimethazine, norethanedrolone) do have anabolic (growth-promoting) effect in salmonids, common carp and tilapia. Contrary to these findings, no significant growth differences could be recorded in the channel catfish treated with synthetic steroids (stanozolol and methandrostenolone). Growth improvement of cultured organisms through high protein diet has got restricted application in commercial aquaculture due to the high cost incurred while using this feed in intensive system. In this context, incorporation of various steroids in the diet of cultivable fishes assumes significance. An attempt was made to record the effects of varying dietary protein and 17 α -methyltestosterone content on growth and survival of *Labeo rohita* fry under hatchery conditions. Fry were divided into four equal groups - two control (Group 1, 3) and two experimental (Group 2, 4). The control group 1, fry were maintained on the diet consisting of fish meal 10%, groundnut oil-cake (GOC) 35%, soybean oil-cake (SOC) 20%, rice bran 20% and wheat flour 15% (crude protein content 30.8%) whereas the control group 3, fry were fed with diet comprising fish meal 30%, GOC 45%, SOC 20%, rice bran 2% and wheat flour 3% (crude protein content 42.3%). Diets of the fry of both the experimental groups (Group 2, 4) were supplemented with 17 α -methyltestosterone (17 α -MT) in the dose of 8 ppm. The pelleted (0.2 mm) feed were given at the rate of 3% of body weight once daily for 90 days. Fry of the control as well as experimental groups exhibited 100% survival. Feed conversion ratio (FCR), feed conversion efficiency (FCE), protein efficiency ratio (PER), specific growth rate (SGR) and weight gain percentage (%) of the fishes from all the groups were calculated. Observations of the present study showed that the fry fed with 42.3% crude protein diet (Group 2) registered significantly ($P < 0.05$) higher growth as compared to those fed on 30.8% crude protein diet (Group 1). Interestingly, the fry given 17 α -MT-incorporated diets (Group 3, 4) recorded higher growth rate ($P < 0.05$) in comparison to their respective controls (Group 1, 2).

Keywords: Dietary protein, 17 α -methyltestosterone, survival, growth, hatchery conditions, fry, *Labeo rohita*.

Biography

A K Pandey completed his PhD (Zoology, Comparative Endocrinology) from the University of Gorakhpur in 1990. Presently, he is Principal Scientist at National Bureau of Fish Genetic Resources (ICAR), Lucknow. He has published 234 research papers in journals of repute. Most of his papers are widely cited by eminent scientists of the world. He is editorial board member of a number of national journals.

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