

Abstract

Studies of plants and their extracts significantly increased in recent years. The purpose of this research is to introduce a new method which is eco-friendly and low cost for masculinization of *Danio rerio* as a model in fish. In present study, effect of different levels of alcoholic extract in *Tribulus terrestris* plant examined on growth indicators (special growth rate (SGR), percentage of body weight gain (%BWG), condition factor (CF), food conversion ratio (FCR), survival rate (SR) of Sex ratio in Zebra fish, in four level of (0 (T0) , 50 (T1) , 100 (T2) and 200 (T3) mg extract per kilogram of food). Larvae were fed with experimental diet for 60 days from the onset of active nutrition. The result showed that fish fed with experimental diet were in better condition compared to control group ($p < 0.05$). The best feed conversion ratio was observed in fish treated with T2 ration ($p < 0.05$). Special growth rate of fish increased by increasing the amount of extracts of *Tribulus terrestris* in the diet. The highest and the lowest number of Indices of body weight gain and status indicator obtained in T0 and T2 treatments, respectively ($p < 0.05$). The highest proportion of males in fish fed diets containing 100 mg/kg of the extract of *Tribulus terrestris* ($70/83 \pm 3/818$). The level of testosterone and dihydroepiandrosterone was significantly different between control group and the treatments fed with extract. The highest levels of testosterone and dihydroepiandrosterone were obtained in T3 and T2 treatments, respectively ($p < 0.05$). In total, this research indicated it is suggested to use a diet containing 100 mg / kg of *Tribulus terrestris* extract in order to improve the growth performance and produce a high percentage of males in Zebra fish as model species in aquatic industry.

Keywords: Growth indices, Masculinization, *Tribulus terrestris*, *danio rerio*.



University of zabol
Graduate School
Faculty of Natural Resources
Department of fisheries

The Thesis Submitted for the Degree of M.Sc.
(In the field Fisheries)

**Effect of *Tribulus terrestris* extract on sex ratio,
gonadosomatic index, growth indices and survival rate in
Zebrafish (*Danio rerio*)**

Supervisors:

Dr. A. Gharaei
Dr. J. Mirdar Harijani

Advisor:

Dr. H. Kolangi Miandareh

By:

Hossein Ebrahimi Jorjani

2017