

Production of all-female rainbow trout (*Oncorhynchus mykiss*) by using sex-reversed males and Investigation on their growth parameters in first year of culture in I. R. IRAN

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Abstract

In this paper due to the advantage of all female population in aquaculture such as late maturation, production possibility of all female rainbow trout (*Oncorhynchus mykiss*) by using neomale stocks (Sex reversed males) was investigated in Shahid Bahonar hatchery in Kelardasht (Mazandaran, I. R. IRAN). Neomales testis does not have the sperm duct so for sperm gain needs a surgery. After mixing eggs and sperm, fertilization rate, hatching rate and growth parameters of progeny in first-year-of-culture were compared with control group. Histological studies on gonads of 5 month year old fish show that progenies which produced by mating sex reversed males and normal females were totally female (All female population), but progenies which produced by mating normal males and normal females were 60% female and 40% male (Mixed sex population or control group). Number of eyed stage eggs, hatching rate and early survival rate in all female population was 90.69%, 97.36%, 91.49% and in mix sex population was 70.24 %, 98.22%, 90.73%, respectively, which had no significant differences ($P>0.05$). Also due to lack of maturation of fishes in first year of culture, growth parameters (Including weight gain (WG), specific growth rate (SGR), and mortality rate) in mixed sex group and all females were identical ($P>0.05$). Results show that use of sex-reversed male (XX) can be one of the best methods for producing of all female populations, because this fish produce the sperm, which have only X chromosome but sperm of normal males have X and Y chromosome.

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