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Black Sea Trout (*Salmo trutta labrax* PALLAS, 1811) Culture in Turkey and Morphometric Characteristics of Fifth Culture Generation

Ekrem Cem ÇANKIRILIGİL[1], Eyup CAKMAK[1], Osman Tolga OZEL[1], Nazli KASAPOGLU[1]
[1]Central Fisheries Research Institute, Turkey
ekremcem19@gmail.com

Aim of the study: Black Sea trout is endemic fish species of eastern Black Sea and it was adapted to culture conditions for the first time in 2002 by Central Fisheries Research Institute in Turkey. In the last 15 years, with the contribution of the research projects carried out, the Black Sea trout became an important species for the aquaculture sector with reaching 5186 tons yearly production in 2013. By the year of 2015, the latest culture line of the Black Sea trout (fifth generation) was developed. In this study, the culture conditions of the fifth generation which will introduce to aquaculture sector in the upcoming years were determined. Besides, morphological characteristics of the fifth generation were determined with the aim of constitute a basis for culture line registration in Turkey.

Material and Methods: The eggs of the fifth culture line were spawned from broodstocks of fourth generation in November 2014 in recirculating aquaculture system (RAS) with 10% fresh-water change per day. After that, trouts were transported and stocked as 20 kg/m³ to marine cages in December 2015 for smoltification in order to complete their life-cycle. Before the fish reaches the spawning period (forerun the age 2), meristic and morphometric characteristics of Black Sea trout were determined. The measured morphometric characteristics were: total length, standard length, head length, pre-dorsal length, pre-pelvic length, pre-anal length, body height (in dorsal fin), body height (in anal fin), body width (in anal fin), dorsal fin length, dorsal fin height, pectoral fin length, pelvic fin length, anal fin length, anal fin width, caudal fin length, caudal fin width, adipose fin length, adipose fin width, nose length, length between nostrils, eye diameter, length between eyes, head height (in head), head height (in operculum), mouth width, mouth wide, vertebral bones and gill rakers. The vertebral bones and fin rays were counted from the radiograms were taken with x-rays. All measurements were divided as female and male.

Results: Black Sea trout eggs hatched within approximately 38 days at 10ºC in RAS and they reached to smolt size in 12 months. After 12th month, Black Sea trouts transported to sea and they reached to table size (approximately 250gr) within 16 months. Moreover, according to meristic measurements; dorsal fin rays are 14; pectoral fin rays are 10; pelvic fin rays are 14, anal fin rays are 12; scale numbers in the lateral line are 112-125, vertebral bones are 57-58 and gill rakers are 16-18. According to statistical analyses; the ratio of the nose length, length between nostrils, and head height to total length of the females were found more than males ($P<0.05$). However, there were no significant differences between other characteristics of male and females ($P>0.05$). Also, it has been determined that the fifth generation of Black Sea trout is morphologically similar to natural fish. In a conclusion, due to the economic importance of Black Sea trout in Turkish aquaculture sector, newly-developed culture line can be recommended to sector with convenient culture conditions as well as morphological resemblance.

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Keywords: Black Sea trout, *Salmo trutta labrax*, morphometric characteristic, cultured fish, endemic fish.