

ECONOMICAL SEA FISH CULTURE PROJECT: ASSESSMENT OF OPTIMAL STOCK DENSITY FOR RAINBOW TROUT (*Oncorhynchus mykiss*)

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The main aim of this study was to investigate the optimal stocking density and daily feeding rates depending on water temperature and live weight of rainbow trout (*Oncorhynchus mykiss*) cultured in sea cages in the South eastern Black Sea region.

This study, was carried out Trabzon Fisheries Research Institute's research cages in the Yomra Port in 1992-1993. During the study two experiments, each lasting 180 days, were carried out. At monthly intervals about 10 % of the fish in each cage was taken as sample and weighed for determining growth, food conversion, feeding rates and condition factor. Fish in cages were fed ad libitum by hand and mortality was also recorded daily. Means of growth, food conversion and feeding rates were compared using analysis of variance and the differences between groups were further evaluated using the Duncan test.

In the first experiment fish with initial mean weight of 30 g were stocked at three

densities and reached to 16.0, 11.3, 7.4 kg/m³ final density and 633.9±10.4, 593.5±9.8, 589.4±15.2 g body weight at the harvest. Specific growth and food conversion varied between 0.786-3.264 % and 1.54-2.04 respectively.

In the second experiment fish with initial mean weight of 200 g were stocked at four densities and reached to 40.2, 31.8, 22.4, 18.9 kg/m³ final density, 1038.3±22.5, 1099.8±13.7, 1167.2±20.0, 1227.5±28.1 g body weight at the harvest. Specific growth and food conversion varied between 0.461-1.892 % and 1.71-2.13 respectively. Mortality rate was quite low and varied from 3.63 to 4.57 % in both experiment.

At the end of the study, a negative correlation between stocking density and growth has been found, but stocking density did not appear to affect growth for the populations held at density around 20-25 kg/m³. However in order to increase biomass per unit volume stocking density should be around 40 kg/m³.

