

Effects of salinity, temperature, light intensity and light regimes on production, growth and reproductive parameters of *Apocyclops dengizicus*

ABSTRACT

The effects of salinity, temperature, and light conditions on production and development, longevity, survival and sex ratios of the cyclopoid copepod, *A. dengizicus* were determined. Seven different salinity levels (5, 10, 15, 20, 25, 30, 35 psu), four temperatures (20, 25, 30, 35 °C), three different light intensities (33.3, 85.3, 162.1 $\mu\text{mol photons/ m}^2/\text{ s}$) and light regimes (24:0, 0:24, and 12:12 h light:dark regime) were employed . The highest production was achieved under 20 psu salinity. The optimum temperature required for the maximum reproduction and shortest development time was 35 °C. The production was highest ($p < .05$) and development rate of *A. dengizicus* was shortest ($p < .05$) under the lowest light intensity (33.3 $\mu\text{mol photons/ m}^2/\text{ s}$). Continuous light (24:0 h LD) showed positive effects on growth and production. Light regimes 24:0 h and 12:12 h LD yielded the highest total production and growth ($p < .05$), with highest ($p < .05$) survival percentage. This study demonstrated that *A. dengizicus* can tolerate wide range of environmental conditions and can be cultured for commercial live feed purposes as well as toxicity studies.

Keyword: Environmental parameters; *A. dengizicus*; Cyclopoid copepod; Tropical; Production; Longevity; Sex ratio