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EFFECTS OF BODY WEIGHT AND WATER TEMPERATURE ON THE INTENSITY OF RESPIRATION OF BLOOD COCKLE - *ANADARA KAGOSHIMENSIS* (TOKUNAGA, 1906) THE AZOV-BLACK SEA BASIN

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Respiration intensity of the bivalve blood cockle – *Anadara kagoshimensis (*Tokunaga, 1906*)* introduced in the Azov and Black Sea Basin is investigated. Mollusks of 15–49 mm long with the body weight (including the shell) ranging from 1,26 to 39,6 g were selected for the experiment. Water temperature during the studies varied within 7–25 ºC, whereas salinity ranged insignificantly – from 13,0 to 13,2 ‰. The research results showed that the relation between the oxygen consumption rate (R, mg $O_2 \cdot h^{-1} \cdot ind.^{-1}$) and lean body weight (W, g) of the mollusks can be described using the exponential function of the form: $R = a \cdot W^k$. Seasonal variations of the intensity rate of the studied mollusk were investigated under different water temperature values. With water temperature being 7 ºC, the «*a*» coefficient value made up 0,22; with the water temperature increase up to 12 and 20 ºC the molluscs respiration rate reached 0,34 and 1,13, correspondingly. However, with the water temperature equaling 25 ºC its value reduced to 0,86 mg $O_2 \cdot h^{-1} \cdot g^{-1}$. In general, under conditions of the water temperature increase (T, ºC) the regression coefficient value (*k*) had a negative trend: its value made up 0,81, 0,72, 0,65 and 0,67, correspondingly. The revealed relationship can be approximated using a simple equation: $k = 0{,}835 – 0{,}0075 \cdot T$. The obtained data were transformed; standardized changes of the respiration intensity (*R/W*) under different temperature modes were analyzed. Based on the results, temperature coefficients (Q_{10}) during different seasons were estimated. It was found out that, with the temperature increase, Q_{10} values also increase; however, the highest Q_{10} value (4,17) was reported during the mollusks' pre-spawning period at 20 ºC. The now available data can be

considered while discussing the impact of water temperature and reproduction processes on the energy exchange of blood cockle.

***Keywords*:** blood cockle, respiration intensity, temperature coefficient, reproduction.

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