EFFECT OF INCREASE IN TEMPERATURE ON THE SURVIVAL AND GROWTH OF *MACROBRACHIUM AMAZONICUM* (HELLER 1862) IN THE AMAZON

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Macrobrachium amazonicum is a shrimp species distributed in freshwater habitats of Neotropical regions and is important for the Amazonian economy. This study evaluated the effects of temperature increase on the survival and growth of *M. amazonicum*. For this, we distributed 360 *M. amazonicum* juveniles in 70 L tanks and carried out a 90-day experiment with three treatments (T0: 28.0 ± 0.5 °C, or room temperature; T1: 30.0 ± 0.2 °C; T2: 32.0 ± 0.2 °C), using 4 replicate tanks each with 30 individual shrimps. Culture-tanks were connected to a recirculation system with biofiltration and constant aeration. Animals were fed twice a day using shrimp pelleted commercial food. After 90 days, there was difference in growth rate in length (T0 = 74.7 ± 4.7%, T1 = 65.9 ± 5.6%; T2 = 64.6 ± 5.6%) and body mass gain (T0 = 433 ± 46%, T1 = 371 ± 40%; T2 = 348 ± 54%) of the animals cultured. According to the Dunn test, the specific growth rate (T0 = 11.0 ± 0.6%, T1 = 8.8 ± 1.1%; T2 = 8.3 ± 1.07%), condition factor (T0 = 1.00 ± 0.002, T1 = 0.98 ± 0.009; T2 = 0.97 ± 0.016), weight gain (T0 = 0.99 ± 0.05 g, T1 = 0.80 ± 0.10 g; T2 = 0.74 ± 0.01 g), length gain (T0 = 71.49 ± 1.65 mm, T1 = 65.81 ± 1.85 mm; T2 = 64.49 ± 1.48 mm) and survival (T0 = 78.7 ± 8.9%, T1 = 65.2 ± 9.7%; T2 = 36.5 ± 9.1%) of animals cultured at 30.0 °C and 32.0 °C were lower than those cultivated at 28.0 °C, and feed conversion (T0 = 2.7 ± 0.03, T1 = 2.9 ± 0.15; T2 = 2.9 ± 0.16) was higher. Therefore, as water temperature of 30.0 °C and 32.0 °C may compromise growth and survival of *M. amazonicum* during cultivation, none of the extreme temperatures are recommended in practice. The effects of increasing temperature in the Amazon and its consequences on the development of *M. amazonicum* populations were also discussed here.

Keywords: cultivation, growth, shrimp, survival, temperature.