

Journal

**Invertebrate Reproduction & Development** >

Volume 60, 2016 - Issue 3

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# Effect of temperature on the morphometric development of eggs in the prawn *Macrobrachium americanum* (Caridea: Palaemonidae) and larval success under experimental conditions

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Pages 194-200 | Received 02 May 2015, Accepted 26 Apr 2016, Published online: 30 May 2016

 Download citation  <https://doi.org/10.1080/07924259.2016.1186753> Check for updates

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## Abstract

This study evaluated the effect of temperature on morphometric features of the egg during the embryonic development of the prawn *Macrobrachium americanum* and the relationship with hatching and the survival of the larvae. Berried females were grouped ( $n = 3$ ) and reared at three different temperatures, 26, 29, and 33 °C, for which seven developmental stages were recognized. At each stage, the apical and sagittal diameters of the eggs were measured, the volume was calculated, and the weights were recorded. Additionally, the duration of embryonic development, hatching percentage, and larval survival were determined. At 29 and 33 °C, the eggs' volume increased by 50%, but at 26 °C, the increase was 25%. Larvae from eggs incubated at 33 °C died one day after hatching. At 29 °C, larvae survived until Zoea VII. Larvae from eggs incubated at 26 °C died at the end of Zoea I. The number of days of embryonic development was  $20.5 \pm 1.5$  (26 °C),  $15 \pm 1$  (29 °C), and  $12 \pm 1$  (33 °C). A temperature of 29 °C was the most favorable for embryonic development in *M. americanum*.

Keywords: *Macrobrachium americanum*, incubation temperature, egg morphometry, larval survival

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**Published online:** 17 Oct 2016

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