Thermal tolerance and locomotor activity of blue swimmer crab *Portunus pelagicus* instar reared at different temperatures

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Thermal tolerance and locomotor activity of blue swimmer crab *Portunus pelagicus* instar reared at different temperatures

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Abstract

Owing to its potential market value, the blue swimmer crab *Portunus pelagicus* is of great economic importance. The temperature of water significantly affects the physiological function and production efficiency of these crabs. The aim of the present study was therefore to examine the critical thermal minimum (CTMin), critical thermal maximum (CTMax), acclimation response ratio (ARR), escaping temperature (Tesc), and locomotor behavior of *P. pelagicus* instars at 20°C, 24°C, 28°C, 32°C, and 36°C. The CTMax ranged from 39.05°C to 44.38°C, while the CTMin ranged from 13.05°C to 19.30°C, and both increased directly with temperature. The ARR ranged from 0.25 to 0.51. The movement of crabs (walking before molting) correlated positively with the acclimation temperature. These results indicate that the parameters evaluated varied with temperature. Furthermore, the high CTMax indicates the potential of this species to adapt to a wide range of temperatures. In