

Allometric comparison of the length of the sixth segment in postlarvae and juveniles of the giant freshwater prawn *Macrobrachium rosenbergii*

Abstract

While there is no standard definition of a "juvenile" freshwater prawn, the term is used to refer to the developmental period between postlarva and adult. However, it is important to know the timing of metamorphosis into the juvenile phase when we conduct experiments through the postlarval and juvenile period. In this study, the length of the sixth segment (L_s) and the length of the sixth segment as a proportion (PL_s) of the total length (L_t) were measured and then compared between postlarvae and juveniles of the giant freshwater prawn *Macrobrachium rosenbergii* using an allometric method. A linear regression line for the common logarithm of L_s plotted against the common logarithm of L_t showed a negative allometric relationship. The relationship between PL_s and L_t was best represented by two linear regression lines with an intersection at $PL_s = 12.61\%$ or $L_t = 15.03$ mm. We interpret these relationships as an abrupt change in the relative growth of the sixth segment at about the time when *M. rosenbergii* postlarvae undergo metamorphosis. Thus, the relationship between PL_s and L_t can be used to distinguish between larvae and juveniles of *M. rosenbergii*. The information provided by this work will permit more precise design of experiments focusing on the biological basis for postlarvae and juveniles in *M. rosenbergii*.