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A preliminary study on some aspects in growth and reproductive biology of *Gambusia affinis* (mosquitofish) occurring in a canal system of the Sri Jayewardenepura area

E A N D Edirisinghe and A de Alwis*
Department of Zoology, Faculty of Applied Sciences, University of Sri Jayewardenepura, Gangodawila, Nugegoda

Gambusia affinis (mosquitofish) is a well established species in many natural ecosystems of Sri Lanka. The present study was carried out to investigate some aspects in growth and reproductive biology of *G. affinis* occurring in a canal system of the Sri Jayewardenepura area. A total of 285 fish were collected once in two weeks from 6 locations over a period of 10 months (October 2010 to June 2011). Lengths and weights of the fish and the weights of gonads were recorded. The analysis of length-weight data of *G. affinis* shows that there is a typical length-weight relationship in both sexes, in which length increases with weight rapidly. The estimated length-weight relationships were, $W = 0.00418(SL)^{1.975}$ for males and $W = 0.00575(SL)^{2.58}$ for females. The approximate 'b' value was 2 for male fish and 3 for female fish. In terms of growth type, the results show that males have a negative allometry ($b < 3$) and females have an isometry ($b = 3$). The results revealed that the maximum size of female fish (27 – 28 mm) was higher than the male fish (17 – 18 mm) and according to the statistical analysis (SPSS), the female fish population was higher than that of the male fish in most locations. The average size at which 50% of *G. affinis* females attain first maturity is around 13 ± 0.2 mm. After they have reached the size of 17 ± 0.52 mm and above, 100% maturity is seen. For males, 50% first maturity is reached around 11.5 ± 0.37 mm and after they have reached the size of 15 ± 0.58 mm and above, 100% maturity is seen. The female fish of this species show advantageous reproductive strategies that ensures a continuous production of new generations. An isometric growth is characterized by increase in size of different organs or parts of an organism at the same rate. As female *G. affinis* show isometric growth, they are likely to reach sexual maturity proportionate to their growth without delaying the time of maturity. Having a female dominated population also confirms that it is the females that play a key role to ensure healthy and continuous generations through the strategy of storing viable sperms for several months derived from multiple mating with a variety of males, thus not having to depend totally on the presence of males. In addition, with the ability to breed several times a year, in the present study having two peaks in March and October, they also make sure that a continuous supply of new batches of off-springs to the canal. From these observations it can be concluded that the female *G. affinis* contributes significantly towards the sustenance of their population in this canal system.

ajanthadealwis@yahoo.com Tel: 0718138803