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Growth and survival rate of guppy (*Poecilia reticulata*) fry (*red blond variety*) fed with decapsulated and hatched Artemia

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Abstract

Guppy (*Poecilia reticulata*) plays a major role in ornamental fish industry in Sri Lanka as it contributes to 67 percent of live bearer production. Fry nutrition is one of the principle factors influencing growth, survival and the final profit of guppy rearing. Artemia salina has proven to be the best, yet most expensive live food available for fry feeding. However, ingestion of hard casing of unhatched Artemia cysts proves detrimental to small fish larvae. This problem is minimized by a process called decapsulation (*decap Artemia*). Even though guppy fry has been fed with decapsulated Artemia as a custom in the industry, a detailed study has not yet been done to evaluate the effect of feeding decapsulated Artemia Vs feeding hatched Artemia. The present study was therefore conducted to elucidate the above.

Red blond variety guppy fry (initial mean body weight=8mg) reared in community tanks (444 fries/m^2) were fed with similar number of hatched Artemia or decapsulated, for three weeks, with supplementary powder feed. Growth and survival rate of the treated fry were recorded, along with the cost components associated with and the water quality. Guppy fry fed with hatched Artemia showed a significant ($P<0.05$) increase of growth compared to fry fed with decapsulated. Similarly, hatched Artemia fed fry showed a better, yet non-significant survival than others. The use of hatched Artemia for guppy nursery brought economical benefits compared to decapsulated when hatchability is greater than 83% and it reduced the guppy nursery period to 16 days. Taken together, we summarized that, providing hatched Artemia for guppy fry improves the growth and survival and reduces the production cost and the nursery period. Therefore, present study shows that, providing hatched Artemia for early stages of guppy is beneficial than feeding decapsulated Artemia.

Keywords: Guppy, *Poecilia reticulata*, *Artemia salina*, decapsulation

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