Yolk-sac absorption, mouth size development, and first exogenous feeding of Sultan fish, Leptobarbus hoevenii

ABSTRACT

Sultan fish, Leptobarbus hoevenii is an important species for aquaculture in several Southeast Asian countries, including Thailand and Malaysia. However, knowledge on its yolk absorption, mouth size development, and first food ingestion timing is still lacking up-to-date. This information on the correct feeding of the L. hoevenii larvae are crucial to farmers. The present study hence examined these parameters in the L. hoevenii. The newly hatched L. hoevenii larvae were obtained through natural spawning with the aid of chemicals injection, and sampled consecutively every 2 hours to measure their yolk volumes, mouth height, and to confirm the ingestion time of the first Moina into the larval gut. Also, a starvation experiment was conducted to detect the larval point-of-no-return (PNR). It was found that the yolk sac volume of the newly hatched L. hoevenii larvae was 77.51 µm, and it was completely absorbed at 108 hours after hatching (hAH). The larval mouth has first opened at 36 hAH (mouth height 215±22.59 µm) but the larvae only commenced first exogenous feeding on Moina (approximately 207 µm in width) at 62 hAH, when its mouth height reached 372.91±79.11 µm. The L. hoevenii larvae required about 18 hrs from 62–80 hAH, to adapt themselves to feed on the given Moina, and the PNR was estimated to happen at 70–72 hAH. It was recommended that Moina should be given to the L. hoevenii larvae best within 62–72 hAH, at the rearing water temperature of 27 to 29°C.