

Effects of delayed first feeding on nutritional condition of tiger grouper, *Epinephelus fuscoguttatus* (Forsskål, 1775) larvae

Abstract

The effects of delayed first feeding on the nutritional condition of tiger grouper, *Epinephelus fuscoguttatus* (Forsskål, 1775), larvae were examined under controlled conditions. Larval gut epithelium development and morphometric changes of the larvae fed at different first times (0, 6, 12, 18 and 24 h after mouth opening stage; h AMO) were compared. Gut epithelium height ($14.81 \pm 0.24 \mu\text{m}$) of larvae first fed at 0 h AMO was significantly higher ($P < 0.05$) compared to other treatments and gut was morphologically well developed. A continuous reduction of gut epithelium height was observed in larvae first fed beyond 0 h AMO and severe damage on connective tissue surrounding larval gut was observed in larvae fed at 24 h AMO. All morphometric growth on each body proportion of larvae first fed at 0 h AMO was gradually increased as they developed, while larvae first fed at 6, 12, 18 and 24 h AMO experienced slow development and degradation of entire body proportions. This study concludes first feeding at mouth opening stage to the tiger grouper is essential to enhance larval nutritional condition that is important to maximize larval survival and growth at subsequent stage.