

Development of sensory organs and changes of behaviour in larvae Amur catfish, *Silurus asotus*

ABSTRACT

The development of morphology, sensory organs, and behavioural changes in larvae of Amur catfish (*Silurus asotus*) were described from 0 h after hatching (hAH) to 20 days after hatching (dAH) reared at 26.7 ± 1.3 °C under controlled conditions. The newly hatched larvae (4.71 ± 0.87 mm) had eyes that were only outlined and unpigmented, no taste buds, and free neuromasts with a demersal swimming mode associated with negative phototaxis and immediate rheotaxis responses. At 12 hAH (5.57 ± 0.25 mm), larvae had pigmented eyes, exhibited initial vertical and horizontal swimming behaviour, and switched to positive phototaxis and positive immediate rheotaxis responses. At 30 hAH (7.01 ± 0.41 mm), larvae with well-developed sensory organs began feeding for the first time, and cannibalistic behaviour was noted for the first time at this stage. At 5 dAH (12.12 ± 0.68 mm), larvae had enlarged taste buds and free neuromasts associated with active swimming behaviour. At 12 dAH (20.22 ± 0.09 mm), the Amur catfish entered the juvenile stage, and at 20 dAH (34.10 ± 0.89 mm), a pair of mandibular barbels degenerated and the fish preferred to remain on the substrate. This study concludes that the development of Amur catfish larval morphology, sensory organs, and behaviour are interrelated and progressively developed as larvae age.