

Possible sensory control of cannibalism in the African catfish (*Clarias gariepinus*) larvae by electrical ablation of electroreceptors

ABSTRACT

The culture of African catfish (*Clarias gariepinus*) faces a number of challenges which have to be addressed in view of the growing economic importance of this fish. The captive larvae and early juveniles are aggressive and cannibalistic, resulting in considerable economic losses and shortage of seed to meet demands of the farmers. Improving larval survival and health while the fish is held in captivity is a subject of great interest. *C. gariepinus* generates a weak electric discharge during the aggressive interactions with the conspecifics and their electroreceptors are highly sensitive. While very little is known on the role of electroreception in the aggressive behaviour, we attempted a sensory control of the cannibalism in the larvae by applying an excess direct current (DC) stimulus (0.67 V/cm or 2.65 V/cm) and ablated the function of the electroreceptors. The number of surviving individuals and those which were lost were compared between the control and the treated groups. Six trials were conducted involving larvae at the different initial ages, from 4 to 9 days after hatching, and with different observation periods ranging from 5 to 11 days. The electric treatment resulted in higher survival in five trials and the number of fish lost to cannibalism was significantly lower in the treated group than in the control in one trial. While the electrically-ablated electroreceptors might regenerate, the ablation seemed to be effective during whole larval phase.