Swimming performance of catfish in PVC-made flume tank (PVC 製回流水槽内のナマズの遊泳特性)

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【Objectives】 The swimming performance of catfish species as glass catfish (*Kryptopterus bicirrhis*) and Asian red-tail catfish (*Hemibagrus nemurus*) was observed in PVC-made flume tank, for understanding the relationship between swimming speed and endurance time.

【Methods】Glass catfish (*K. bicirrhis,* 14.8±1.4cm FL) and Asian red-tail catfish (*H. nemurus,*16.1±1.1cm FL) were obtained from a fish farmer and transported for keeping them in the tank at Faculty of Fisheries and Marine Science, University of Riau. The flume tank was in dimensions as 244 cm in length, 55 cm in height and 62 in width, with PVC pipe (8" in diameter) as flow circulation tank, for having the swimming channel made from glass (69 x 20 x 30 cm). The two-blades cooper impeller was used for producing water flow in swimming channel, by setting the impeller rotation by electric motor and inverter, for maximum flow speed of 63.4 cm/s. A video camera (JVC, GZ-MG880) was set 1.0 meter above of the swimming channel in order to observe and record the swimming activity of fish.

【Results】The endurance time of catfish was decreased with the increased swimming speed, for drawing the swimming curve for each species. The maximum sustained swimming speed was identified to be around 2.9 FL/s for *K. bicirrhis* and 2.5 FL/s for *H. nemurus*. The range of prolonged speed was 2.9-8.0 FL/s for *K. bicirrhis* and 2.5-10.5 FL/s for *H. nemurus*. Tail beating performance was also analyzed by frame-to-frame video motion, to get the relationship of swimming speed and tail beat frequencies for each species.