Temperature tolerance of adult seahorse *Hippocampus barbouri*

A special problem presented to the

Division of Biological Sciences
College of Arts and Sciences
University of the Philippines Visayas
Miagao, Iloilo

In partial fulfillment
of the requirements for the degree of
Bachelor of Science in Biology

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March 2010

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ABSTRACT

Two experiments were carried out to determine the temperatures that could be tolerated by the adult seahorse *Hippocampus barbouri* (1 year and 4 months old). The low temperature levels tested were 16, 19 and 22 °C. The high temperature levels tested were 32, 35 and 38 °C. Ambient water temperature of 25-28°C served as the control. Seahorses were acclimatized for one hour prior to transfer to various experimental temperatures. The experiment was conducted in 10 L plastic containers with 10 seahorses per container. The experimental containers were floated in a 1 tonne fiber glass tank filled with 18cm of water, which served as water bath, to maintain the desired water temperature inside the containers. There were three replicates per treatment. Survival of the seahorses was monitored every hour for 96 hours. For the low temperature tolerance experiment, only 57% survival was observed after 96 hours of exposure to 16°C while 100% survival was obtained on seahorses reared in 19 and 22°C. Significantly decreasing percentage survival correlated closely with decreasing temperature. For the high temperature tolerance experiment, *H. barbouri* tolerated a temperature of 32°C with 100% survival. However, no seahorse survived water temperature of 35°C. Similarly all seahorses succumbed within an hour of exposure to water with a temperature of 38°C. No death occurred on seahorses at a temperature of 25-28°C (control). The results of the present study show that adult *H. barbouri* could tolerate temperature as low as 16°C and as high as 32 °C.