

EFFECTS OF PHOTOPERIODS ON THE CLONED GtH GENES IN HARD-LIPPED BARB (*Osteochillus hasseltii*)

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Abstract	<p>Photoperiod is one factor that regulates the endocrine gland's production of hormones necessary for gonadal growth and development, gametogenesis and reproductive cycles in fish reproduction. However, studies on the influence of photoperiod on tropical fishes are still limited. Hence, this study investigates the effects of photoperiod on the hard-lipped barb, particularly, the genetic expression of its cloned gonadotropin hormones I (GtH-I) and II (GtH-II) genes. Experiment was designed using three treatments; 14L: 10D (control), 8L: 16D (short photoperiods), and 18L: 6D (long photoperiods). Four aquariums with nine fishes/tank were used, serving as replicates. The fishes were kept under these different photoperiod lengths for eight weeks. Pituitary activities were observed by measuring the GtH genetic expression. The length of cDNA GtH-I was 222 bp, and the cDNA GtH-II was 354 bp. The GtH-I precursors encoded by cDNA consisted of 67 amino acids, including mature peptide. The level of GtH gene expression significantly increased as longer photoperiods were administered. The results indicated that photoperiod lengths affect the hard-lipped barb reproductive performance.</p>
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