Effect of cultured artemia on growth and survival of juvenile Hippocampus barbouri

ABSTRACT

Populations of seahorses (Hippocampus spp.) have been greatly reduced during recent decades due to over-exploitation, primarily from the ornamental fish and traditional Chinese medicine industries. Efforts at captive breeding have been made to reduce the dependence on wild-caught individuals, but to date, only some species have been bred successfully. The main obstacle in the culture of seahorses is the suitability of diets, as nutrient requirements of seahorses at different stages are not fully understood. Several studies have shown that Artemia enrichment improves the growth and survival of juvenile seahorses. This study determined the effect of feeding Artemia cultured with different media on growth and survival of Hippocampus barbouri. To prepare Artemia for the experiment, Artemia metanauplii were placed in cultured medium for 24 h, after sieved and rinsed, then another 30 min on respective cultured medium prior to feeding to seahorses. Five treatments were used: Artemia (A), Artemia with fresh Chlorella sp. (A+CF), Artemia with marine shrimp pellets (A+P), Artemia with Chlorella powder (A+CP) and Artemia with Spirulina powder (A+S). At the end of the experimental period, 74 days after birth, juveniles seahorse fed with diets A, A+P and A+S had significantly higher body length ($p<0.05$) (34.44±2.37 mm, 32.59±1.61 mm and 36.01±1.57 mm, respectively) than other treatments. A and A+S produced highest final weights (0.198±0.026 g and 0.221±0.057 g), while A+CF and A+CP produced lowest final weights. In terms of survival, diets A and A+S resulted in lowest ($p<0.05$) survival of 26.99 % as compared to 53.99 % in juveniles fed with A+CF, A+P and A+CP. To achieve better growth and higher survival, treatment A+P is highly recommended for rearing juvenile H. barbouri.

Keyword: Artemia; Hippocampus barbouri; Larval rearing