

عنوان مقاله:

Changes of digestive enzymes activity in Caspian Kutum (*Rutilus frisii kutum*) during larval developmental stages

محل انتشار:

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خلاصه مقاله:

The ontogenesis and specific activities of pancreatic (trypsin, chymotrypsin, amylase and lipase) and intestinal enzymes (alkaline phosphatase, aminopeptidase N) were investigated in Kutum (*Rutilus frisii kutum*) from the onset of exogenous feeding (۳ day after hatching, DAH) to the juvenile stage at ۵۰ DAH. Trypsin- and chymotrypsin-specific activity showed similar patterns and increased with larval development and age. After the first feeding, specific activity of amylase and lipase is increased and reach a peak at ۱۰ DAH, followed by a sharp decrease until ۲۵ DAH, after which it is increased again. Carbohydrate and lipid content changes in diet have led to fluctuations (increases or decreases) in amylase and lipase activities. Alkaline phosphatase and aminopeptidase N specific activity had similar patterns and showed increased trend with age. Sharp increases in activity for both enzymes from ۷-۱۰ DAH indicated maturation of the enterocytes and the achievement of adult-like mode of digestion. Our results suggest that Kutum is capable of digesting protein, lipid and carbohydrates at early stages of growth. However, due to low level of lipase-specific activity compared to other enzymes, it seems that Kutum larvae prefer diets containing higher protein levels than diets with higher lipid content. Therefore, for this species lipid component should remain at low level in formulated diets. In this study, specific activity of most digestive enzymes exhibited a sharp increase when co-feeding on rotifers and formulated diet started from ۷-۱۰ DAH. The increase in activities of pancreatic and intestinal enzymes in this period can be due to maturation of exocrine pancreas and brush border enterocytes, respectively and showed that this fish .has ability to digest formulated diets

کلمات کلیدی:

Rutilus frisii kutum, Larviculture, Pancreatic enzymes, Intestinal enzymes, Ontogeny

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