

Ontogeny of the digestive tract of *Brycon amazonicus* (*Teleostei, characidae*) at 15 days of age

Nakaghi, LSO.

Centro de Aqüicultura, Universidade Estadual Paulista

Fish larvae present a rudimentary digestive tract, in general, with a lower capacity in obtaining nutrients and highly sensible to diet changes. This study describes the early development of the digestive tract of *B. amazonicus* by histological analysis, in order to identify alterations that may have influences on the feeding efficiency on early stages of this species. Collections were carried out in the fish farm Buriti, Nova Mutum/MT, with an average water temperature of 27.98 ± 0.81 °C. Samples were fixed in buffered formol 10%, transferred to alcohol 70% and submitted to histological routine, comprising embedding the material in paraffin to be cut in slices of 5 µm in thickness and stained with HE. Exogenous feeding began 29 hours after hatching (AH), when the stratified squamous epithelium covered the buccopharyngeal cavity and esophagus and the simple columnar one covered the intestine. After 35 hours, a septum appeared in the final portion and a bag in the proximal portion of the intestine was observed, with a folded mucous layer, increasing in height towards the posterior region. At this moment, large vesicles occupied the cytoplasm of gut epithelial cells, not seen after the intestinal septum. The beginning of stomach differentiation occurred at 83 hAH, when esophagus presented longitudinal folds on the mucous layer and its epithelium was covered by mucous cells. The vesicles previously observed in the intestine cells disappeared and columnar cells in this segment presented a brush-like border and basal nuclei. In the hindgut, the supra nuclear region of cells showed a mucous aspect. Three regions were differed in stomach at 171 hours (AH): cardiac, caecal and pyloric, which were isolated from the intestine by the pyloric sphincter; the first stomach glands appeared on cardiac region. At 243 hAH, many pyloric caeca in the anterior portion of the intestine were seen. The epithelium of these structures was identical to that one where they were found, with rare clear cup-like cells (goblet cells) among the enterocytes. The U-shaped stomach was clearly defined, with glands occupying an extensive lamina propria along the first half of the organ, while the second half was composed by a thick muscle wall, surrounding a narrow lumen. In the apex of the folds at the distal portion of the intestine, before the intestinal septum, vesicles occupied the apical region of the cells. The digestive tract of larvae of *B. amazonicus* was ready to food storage and able to partially absorb the nutrients 10 hours after its opening and it was suitable for digestion and nutrients intake 243 hAH.

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