STRUCTURE OF ALIMENTARY TRACT OF LONGNOSE GAR *Lepisosteus osseus* FED ON LIVE AND COMMERCIAL DIETS

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The study of the alimentary tract and liver in garfish raised on live food and commercial, formulated diets has not been carried out. Second, the effect of masculinization by methyltestosterone (MT) on a condition of garfish digestive tract was not analysed. In the present study, the longnose gar was used as a surrogate species for tropical gar *Atractosteus tropicus*, the species of aquaculture potential in Mexico.

Longnose gar broodstock was obtained from Sandusky River, OH in March, 2005. After the acclimation to the laboratory conditions (feeding with live fish prey), gars were injected with a priming dose followed by a resolving dose of OVAPRIM® 8 hours later to induce the final maturation. Eggs were released by only one female and sperm was obtained from 2 males. After incubation for 6 days at 18ºC, larvae were hatched. A feeding trial was setup with 11 day old larvae (initial weight 37.3 mg, length 23.5 mm) where fish were distributed in nine 35 L glass aquaria with 11 fish/tank. Control groups were fed with live *Artemia* nauplii. In two other treatments we attempted to provide a formulated, commercial diet (AgloNorse Ewos, Norway; 59% protein 16% lipids) for 2 days. However, no feeding was observed, therefore all groups were offered live *Artemia* nauplii for the following 4 days. The second attempt of weaning from live food into a commercial diet (3 tanks) was carried out when fish were 37.4 mm total lenght. At the same time, a feed (AgloNorse) with 60 mg/kg 17□-methyltestosterone (MT) was offered to other 3 replicate groups of fish. Fish were fed ad libitum in 1-2 h intervals, 12 h daily, for 26 days. After the AgloNorse (MT and no MT) treatment completion (20 days), two experimental diets received commercial diet (Silver Cup 42-15%) provided with a belt feeder for 12 h a day, and the live food group was offered live tilapia juveniles. Fish were then combined into a single group for each dietary treatment, and stocked into three 400 l-tanks.

Several fish were fixed for histological analyses at the time of completion of the first phase of the experiment (26 days of feeding): the live food group, 0.6 g (mean weight, MW) and 75 mm of total body length (TL), and 0.5±0.2 g (62±8.5 mm TL) and 0.7±0.3 g (70±9.9 mm TL), for no MT and MT groups, respectively. The next samples were taken after 5 months. The MW and TL of the fish were: 19.7 g and 24 cm for live food and 11.6 g (20 cm TL) and 9.0 g (18 cm TL) for no MT and MT groups. After 13 months of rearing the size sampled fish was: 27.1± 4.0 g and 26.5±1.6 mm (live food), and 19.9±1.6 g and 24.1±0.8 mm (MT diet).

Upcoming activities will be focused on description of the differentiation and morphology of the alimentary tract of longnose gar by histological methods. The following characteristic of tissues of the stomach and intestine will be described: height of the enterocytes and brush border, the number of Goblet cells, the thickness of lamina propria and the muscularis, and vacuolization of enterocytes. The differences in structure of hepatocytes of liver in all of experimental groups will be also studied.