FISH AS BIOLOGICAL HEALTH INDICATORS IN AN AQUATIC POND IN VILLAHERMOSA, TABASCO MEXICO

SERGIO LUEVANO[1], HECTOR RUBIO[1], ROSA FLORIDO[2], ALBERTO SANCHEZ[2], LETICIA GARCIA-MAGANA[2]*

[1]*Autonomous University of Chihuahua, Chihuahua, 31000, Chihuahua, Mexico*
[2]*Juarez Autonomous University of Tabasco, Villahermosa, 85000, Tabasco, Mexico*
lgarcia@dacbiol.com

The objective was to obtain biological indicators in an aquatic pond located in Villahermosa, Tabasco, Mexico. Fish assemblages were investigated and in the most dominant species, the standard length (SL), total moisture weight (TMW), condition factor (CF), hepatic somatic index (HSI), gonad somatic index (GSI) and finally, prevalence (P) and abundance of parasites (A) were measured to the nearest millimeter. Five fish species were captured on June 16, 2010 (J) and seven on December 8, 2010 (D). The Parachromis friedrichsthalii was the most dominant species. About 56% were male (M) and 33% females (F) in the J samples while in the D samples, about 28% were M and 71% were F. The SL for the species captured in J was 22.14±2.30 cm for M and 20.4±2.95 cm for F. For those species captured in D, the SL for M was 19.62±0.57 cm and 20.03±1.77 cm for F. The TMW was 170.42±46.82 g for M and 123.63±33.12 g for F for those species captured in J, while in the D samples the average was 142.6±6.67 g for M and 123.63±33.12 g for F. The CF variable was 0.02±0.0014 for M and 0.01±0.0025 for F in the J samples while in the D samples, the M obtained 0.02±0.0008 and 0.01±0.0018 in F species. The GSI varied from 3.75±3.04 in F species to 0.61±0.66 in M species during J and from -0.45±0.4327 in F species to -1.588±0.909 in M species during D samples. During the J samples, M obtained 1.46±0.6 and F 1.76±0.12 of the HIS variable. While in D, -0.98±0.196 was noted for M and -1.223±0.832 for F. In J samples, two nematode species were noted; the Spiroxys genus had 67% of P and it had a high A of (75). The Contracaecum genus (Type 1) presented low P with 22% as well as low A with 0.56. In comparison, during the D samples two nematode species were noted as well as one Cestode parasite, one Copepod parasite and one Protozoan parasite. The Spiroxys sp presented about 92.86% of P and the A was also high with 85.64. The contracaecum sp presented high P with 71.43%; but low A with 2.86. The Posthodiplostomum sp had low P with 7.14% and low A with 0.029. The Plerocercoid sp presented low P with 35.71% and low A with 4.43. The Ergasilus sp presented low P with 14.29% and low A with 1.21. The Henneguya sp had low P with 21.43% and low A with 0.86. In general, the biological indicators showed low water quality and the presence of parasites in the fish that could be potentially harmful to humans that consume this product.

Keywords: fish, biological indicators, tropical areas