

Parasites of some Iraqi fishes in two localities varied in their trophic levels in Inland water of Basrah

By

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Abstract

During the period from December 2008 to November 2009, a total of 834 fish specimens were collected (408 fish from Garmat Ali River and 426 fish from Al-Salihiya River in Basrah). Fish samples represented 25 species belonging to 12 different families and seven orders (Clupeiformes, Cypriniformes, Cyprinodontiformes, Mugiliformes, Perciformes, Pleuronectiformes, and Siluriformes).

Productivity and some water characteristics were studied. Results showed that Garmat Ali River was more polluted and more trophicated than Al-Salihiya River. BOD₅ values were fluctuated between 3.1 and 6.7 mg/l in Garmat Ali River, while it was 0.8-4.6 mg/l in Al-Salihiya River. TOC values were 4.4-22% and 9.02-44.6% in both rivers respectively. Nitrates and phosphates of the water of both rivers were measured monthly. Nitrates values were 28.34-48.31 µg/L and phosphates were fluctuated between 12.25 and 20.86 µg/L in Garmat Ali River. In Al-Salihiya River it was 10.1-30 µg/L for nitrates and 3.81-7.8 µg/L for phosphates.

Fish were examined for parasitic infestations. Results showed that they were infected by two species of Fungi (*Saprolegnia* sp., *Ichthyophonus hoferi*), three species of Protozoa (*Myxobolus pfeifferi*, *Ichthyophthirius multifiliis*, *Trichodina domerguei*), five species of Monogeneans (*Microcotyle donavini*, *Ancyrocephalus polymorphus*, *Dactylogyrus vastator*, *Gyrodactylus* sp., *Diplozoon kasimii*). More over three species of Trematodes were also recorded (*Clinostomum complanatum*, *Diplostomum spathaceum*, *Aspicotyle coleostoma*), one species of Cestoda (*Bothriocephalus acheilognathi*), one Nematoda (*Contracaecum* sp.), one Acanthocephala (*Neoechinorhynchus iraqensis*) and six Crustaceans (*Ergasilus rostralis*, *E. ogawai*, *E. sieboldi*, *Lernaea cyprinacea* and *Mugilicola kabatai*). One

disease (Fin rot) was also detected from fishes. There were 73 new host record for 17 fish parasites in the present study.

Negative correlation was detected between levels of infections and water ph, salinity, dissolved oxygen and total number of epiphytic blue-green algae. Positive correlation were recorded between levels of fish infections and other characters of water of Garmat Ali River.

In Al-Salihiya River negative correlation was recorded between fish infections levels and water salinity, total organic carbon of the sediments and total number of epiphytic blue-green algae. Positive correlation were recorded with other characteristics.

Fish of Garmat Ali River were found more infected with Protozoans, Monogeneans, Trematodes, Acanthocephalans and Crustaceans from that of Al-Salihiya River. Fin rot, Saprolegniasis, Cestodes and Nematodes occurred in greater levels on fish of Al-Salihiya River.

Fish infestation levels fluctuated according to fish species, fish length and sex. Significant differences were recorded between these values in both rivers. No significant differences in levels of infestations of different fish weight groups. The only significance was noticed between small fish groups in both rivers.

Values of richness index varied, clearly, during the study period between both locations, when parasite index was used (3.81 for Garmat Ali river and 6.4 for Al-Salihiya river) or when the blue-green algae, attached on plants, were used (3.18 for Garmat Ali river against 0.5 for Al-Salihiya river). However, when 4 Jaccard index values for the attached blue- green algae were calculated, the similarity ratio between both sites was 58.3. When applying this index by using the parasites, with three cases, high similarity in parasites of both sites (70%) was detected. However, values of this index varied when used to know parasite similarity of any fish species in two different environments or by using this index to know host similarity for each parasite in each environment.