

SUMMARY

The aim of this study was to isolate and identifying the pathogenic and non pathogenic bacteria from infected fish, healthy fish and water. One hundred and fifty three healthy and infected fish were collected during the period from October 2015 till April 2016, which included seven species viz.: (6) *Acanthopogrus arabicus* Iwatsuki, 2013; (65) *Cyprinus carpio* L., 1758; (14) *Coptodon zillii* (Gervais, 1848); (15) *Hypophthalmichys molitrix* (Val., 1844); (23) *Planiliza subviridis* (Val., 1836); (15) *Oreochromis niloticus* (L., 1758) and (15) *Poecilia latipinna* (Lesueur, 1821).

The samples of water and fishes were collected from seven different stations in Basrah governorate as, Hartha station (Floating cages), Al-Mashab river station, Basrah University station (Terrestrial ponds), Al-Seeba station (Terrestrial ponds), Al-Marbad station (Concrete ponds), Mehajran station (Terrestrial ponds) and Shatt Al-Basrah canal.

The environmental properties of water have studied such as pH, the lower value was 6.9 in Al-Mashab river station, while the maximum was 8.4 in Al-Seeba station, meanwhile the maximum average was 7.8 in the Shatt Al-Basrah canal.

For salinity the range was recorded from 1.5 ppt at Al-Mashab river station and 45.6 ppt at Shatt Al-Basrah canal. Otherwise the maximum value was 35.2 ppt in the same station.

The values of temperature were fluctuated from 12 °C in Al-Marbad station to 31.2 °C in the Shatt Al-Basrah canal.

The results of the present study appeared that, the fish was infected with different diseases, including: Spring Viraemia of Carp Virus, Viral Hemorrhagic Septicemia, Bacterial Gill disease, Fin rot, Vibriosis, Dropsy, red mouth and Pox disease.

The bacteria were identified in the present study using Vitek II system, API kits and biochemical tests. The accurate identification of Vitek II was between 85-99% for most bacterial genera, while failing to identify the species of *Vibrio*.

Many bacterial species were identified from infected fish, from Spring Viraemia of Carp Virus disease, five species were identified as *Staphylococcus lentus*, *Aeromonas hydrophila*, *Vibrio cholerae*, *Klebsiella pneumoniae pneumoniae* and *Burkholderia pseudomallei*. From Vibrosis disease, seven species were identified as *Staphylococcus haemolyticus*, *V. cholerae*, *V. alginolyticus*, *V. costicola*, *Escherichia coli*, *Proteus vulgaris* and *Pseudomonas aeruginosa*. From Dropsy disease only one species was identified as *Raoultella ornithinolytica*. From red mouth disease, three species were identified as *Enterobacter cloacae* complex, *Shigella* group and *V. cholerae*. From Fin rot disease, two species were identified as *Aeromonas hydrophila* and *Aer. sobria*. From Diplostomatosis, also two species were identified as *V. diazotrophicus* and *Aer. hydrophila*, while from Pox disease, only two species were identified as *V. furnissii* and *Globicatella sanguinis*. Finally from Ascocotyle only *E. coli* was identified.

On the other hand, the bacteria were isolated from the water of studying stations and identified as:

Staph. lentus, *Aer. hydrophila*, *R. ornithinolytica*, *V. Alginolyticus*, *V. furnissii*, *E. coli*, *V. costicola*, *V. gazogenes*, *B. pseudomallei*, *V. cholerae*, *Ent. cloacae* & *Aer. sobria*, *K. pneumniae pneumniae*, *G. sanguins*, *E. areogenes*, *P. aeruginosa*.

Meanwhile, the bacteria also isolated from healthy fishes and identified as: *Aer. hydrophila*, *E. coli*, *V. alginolyticus*, *B. pseudomallei*, *V. gazogenes*, *P. aeruginosa*, *Ent. cloacae*, *K. pneumniae pneumniae* and *Proteus vulgaris*.

Ministry of Higher Education and

Scientific Research

University of Basrah,

College of Agriculture

Isolation and diagnosis of bacteria associated with some disease infections in some fishes in Basrah Governorate, Iraq

A thesis

Submitted to the College of Agriculture, University of Basrah

in Partial of Fulfillment of the Requirements for the Degree of

Master of Science in Fisheries and Marine Resources

By

Nadia Ali Hussain Al-Shemmari

B. Sc. in Agriculture Science, University of Basrah

2001

Supervised by

Assis. Prof. Dr. Najim R. Khamees

2017 AD

Prof. Dr. Asaad M. R. Al-Tae

1438 AH