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## **VI. Summary**

This work was carried out on a total number of one thousand and forty (1040) wild and cultured fish; including about 330 *Tilapia*; *Oreochromis niloticus* (150 wild and 180 cultured), 170 African catfish; *Clarias gariepinus*, 120 cultured Mulletts; *Mugil cephalus*, 130 cultured Silver carp; *Hypophthalmichthys molitrix*, 150 wild Hake fish; *Saurus tumbil* and 140 wild *Pagrus pagrus*.

1- Myxosporidiosis in *Oreochromis niloticus* was found as macroscopic nodules in the branchial cavity. These nodules were creamy white in colour, firm in consistency, round to oval in shape and when ruptured oozed milky viscid fluid.

The prevalence of Myxosporidiosis ranged from 2.00% in wild and 10.56% in cultured *O. niloticus*.

The seasonality for myxosporidiosis in *O. niloticus* was high in winter and reaching up to 5.00% for wild *O. niloticus*, in cultured *O. niloticus*, summer was the most suitable season for such disease and reached up to 14.29%. Parasitological findings, showed that members of genus myxobolus are incriminated for such disease.

Myxosporidiosis in *Clarias gariepinus* showed various nodules attached to the gills and dendritic organs (accessory respiratory organ), the nodules reached up to 7mm in size, 4-30 nodule/ fish in number and yellowish in colour.

The prevalence along the year in *Clarias gariepinus* reached up to 5.88%, the winter season was the most suitable season for such disease

## ***SUMMARY***

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reaching up to 15.15% of the examined fishes. The parasitological findings revealed members of genus *Henneguya*.

Examination of *Pagrus pagrus* showed that myxosporidian nodules were attached on or embedded in the branchiostegal musculature and the heart, reaching up to 35 nodules/fish, the nodules were pin point in shape and size and whitish in colour. The prevalence of such disease reached up to 16.67% in spring season which was the only season. Parasitologically members of genus *Kudoa* were incriminated for such disease.

Along the period of study, neither *Mugil cephalus* nor *Hypophthalmichthys molitrix* showed nodular diseases.

2- Metacercariosis in *O.niloticus* was represented in both of *Clinostomum* (yellow grub) and *Euclinostomum*. Infestation by yellow grub in *O.niloticus* was characterised by the yellowish to orange cysts embedded on or attached to the branchiostegal musculature, showing a prevalence of 12.00% in wild *O.niloticus* in which, the autumn was the highest season showing such infestation, in cultured *O.niloticus* the prevalence reached 0.56% and the winter season was the only season suitable for such disease.

The cysts of *Euclinostomum* were found to be embedded in the kidneys of infested *O.niloticus*.

Examined *Clarias gariepinus* harboured many encysted metacercariae of unidentified digenetic trematodes, the sight of infestation was found to be in the musculature, intestine and internal organs. The prevalence was up to 29.41% and the summer season recorded the highest season of infestation.

3- Anisakiasis showed a high prevalence in *Saurus tumbil*, reaching up to 15.33% the larvae was found coiled and encapsulated in the body

## ***SUMMARY***

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cavities, musculature and internal organs. The winter season recorded the highest prevalence of such disease.

4- Microsporidiosis in *Saurus tumbil* was clinically characterised by various nodules in the body cavity, musculature and internal organs of fish. The nodules were oval to round, whitish glistening, thick walled, numerous in one host reaching up to 60 nodules/fish and of various size reaching up to 10 mm. The prevalence of such disease reached 16.67% and the spring was the highest season for such disease.

5- The finger print of *Saurus tumbil* microsporidiosis against 13 random primers was done, a copy of such reaction was kept at, Agriculture Genetic Engineering Research Institute (AGERI), Agriculture Research centre.

6- Histopathological alterations were recorded in gills, dendritic organs, musculature, heart, liver, kidney, stomach and intestine of infested fishes.

### **VII. CONCLUSION**

- 1- Fish harboring nodular diseases showed no pathognomonic clinical signs.
- 2- Cultured fishes were less exposed to internal parasitic infestations.
- 3- Anisakiasis of *Saurus tumbil* (Hake fish) showed a high prevalence in the winter season and was an important predisposing factor for Microsporeidiosis in the spring season.
- 4- *Pagrus pagrus* showed heavy infestation by *Kudoa* in the spring and was the only season for such disease.
- 5- The fingerprint of Hake microsporeidiosis was recorded and it was kept at the Agriculture Genetic Engineering Institute (AGIRI), Agriculture Research Centre (ARC), Giza.