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Investigations on mass mortalities among Oreochromis niloticus at Mariotteya stream, Egypt : Parasitic infestation and environmental pollution impacts

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Abstract

The present study was carried out to determine the possible causes of an emergent event of respiratory distress with consequent mass mortalities among Nile fish ,Oreochromis niloticus (O. niloticus.) at Mariotteya stream ,an intrastate tributary of River Nile , Egypt . The area of incident extended from Shabramant till Aboseer city (along 4 km distance). Our field visits have recorded thousands of dead large sized fish found on both sides of the stream while huge numbers of fish of different size accumulated on the water surface showing typical signs of asphyxia. We also noted that Mariotteya water body is being subjected to multiple sources of pollution through the dumping of improperly treated organic and inorganic chemical wastes in addition to sewage materials. Results of field and laboratory investigations have revealed that all the examined fish samples were heavily infested with different types of parasites including zoonotic species : Cichlidogyrus spp. (monogenea) , Lamproglena spp. ,Ergasilus spp.(Copepod), Myxobolus spp. , Chilodonella spp. , Trichodina spp. , Cryptosporidium spp. , Balantidium spp.(protozoa), Acanthosentis spp. (Acanthocephala) , Clinostomum spp. ,Euclinostomum spp. ,Heterophid and Prohemistomatid metacercarae (larval stages of Trematodes). Also the physical and chemical examinations of water samples and the analysis of heavy metals concentration indicated marked abnormal water quality parameters and environmental pollution which might be incriminated as a primary stress factor that promoted the invasion of parasites as a secondary stress factor. We concluded that both factors would have interacted to produce this catastrophic intense case of respiratory distress and mass mortalities. The impact of the recorded parasitic infestation and environmental pollution was briefly discussed.

Biography

Nisreen has completed her Ph.D in 1994. Works as a professor of Parasitology in Faculty of Veterinary Medicine at Cairo University - Egypt. She is a leading specialist of fish parasites. Her scientific interests include problems related to parasitic diseases and pollution in fresh water and marine aquacultures. She is an active participant of the international scientific conferences and symposiums. She has published more than 38 papers in reputed journals. Also a member of: Egyptian Society of Environment and Aquatic Animal Health, The Zoological Society A. R. E., The Fish Committee of the General Organization for Veterinary Services, Egypt, The Fish Committee for the solution of Lake Naser fish helminthes problems, Egypt, The Egyptian Society of Veterinary Parasitology .