Fish Disease Surveillance in Nigeria: a Veterinary Diary

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Introduction

Fisheries and aquaculture are developing fast in inland waters and man-made lakes in Nigeria. There is increasing interest by both state and federal governments with the creation of fish-allied agricultural units known as the River Basin Development Authorities. Also, the Kainji Lake and Lake Chad Research Institutes are to provide, as part of their objectives, baseline information on fish population dynamics, gear techniques and methods, management and aquaculture. They will provide the guidelines for the overall management of fisheries resources which should be applied to local, private and commercial institutions. However, small-scale traditional fishing still represents a greater proportion of the developing industry.

Marine fisheries, also rapidly developing, have mainly been managed by foreign investors because of their monopoly on technology. Recently, however, Nigerian businessmen have begun to invest in trawlers for deep-sea fishing. The Institute of Marine and Oceanographic Research will provide information on deep-sea harvesting practices.

Through a campaign called "Operation Feed the Nation," the government is developing the entire agricultural sector to achieve self-sufficiency in production. The importation of frozen fish into Nigeria gives a short-sighted impression of inadequate local supply of fish. The real problem is the poorly organized distribution strategies and, even more disturbing, the poor preservation methods resulting in fish spoilage and wastage.

Fish Pathobiology

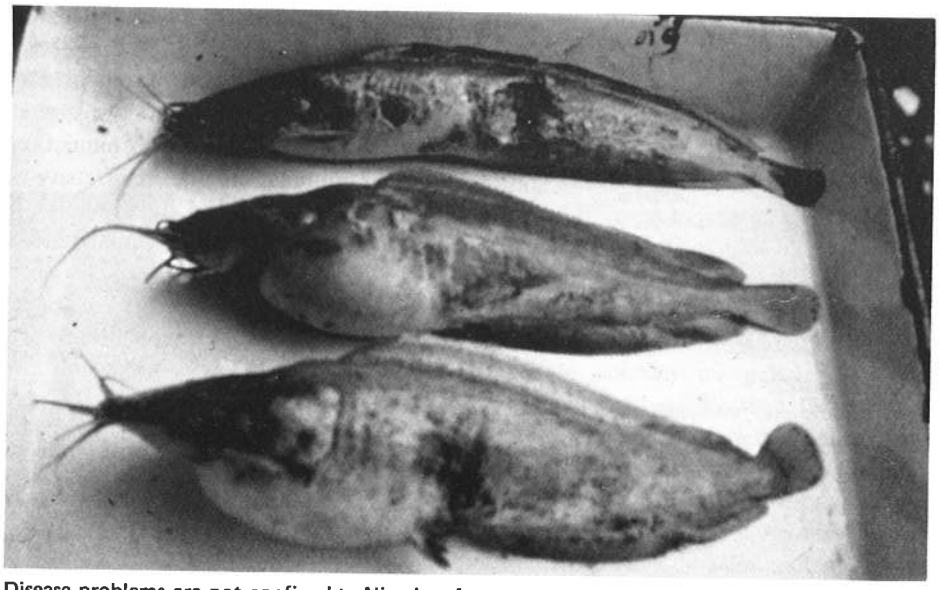
One area inadvertently missing in the development of fisheries is disease surveillance. In Nigeria there is a scarcity of information on fish diseases. Reports are usually not made, except for a few studies by zoologists on helminth and blood parasites of fish. Below are a few case studies to reflect the status of fish pathobiology.

December 1978: I sent out questionnaires to the different state fisheries for information on the incidence of fish losses in ponds. Only two states, Kano and Plateau, responded. One reported high mortality early in the rainy season, most likely due to mineral toxicity. The other reported occasional cases of deaths with no apparent cause.

October 1979: Two species of catfish, *Clarias lazera* and *Hespetus odes,* with lacerations and tumor mass were sent to me. The fish were from the Reservoir of the International Institute for Tropical Agriculture, Ibadan, Nigeria. The diagnosis was as follows: The lake was in a process of eutrophication due to the drainage of highly soluble fertilizer from surrounding farmlands resulting in an enrichment of the reservoir. The fish population grew very rapidly, including the forage species, particularly *Tilapia* sp., but because of the poor fishing techniques, the ratio of forage to carnivorous species was established by the Kainji Lake Research team to be around 20%. The consequence was crowding, cannibalism and skin laceration in over 10% of catfish catch. Histopathological examination showed that the tumor mass was benign and limited to the skin.

April 1980: The Kainji Lake Research Institute's floating cages, stocked with *Tilapia zillii,* located on one of the outlets of the Niger River at New Bussa, suffered some losses. I had the opportunity of inspecting three of the cages containing 160 fish. There was 17.5% mortality with high infection rate. The typical lesion on fish was whitish pustules distributed around the head, operculum and pectoral fins with some hypermic areas on gills. Post-mortem examinations revealed extensive septicemia especially around the gills. Tentative diagnosis was icthyopthiriusis with secondary bacterial and fungal invasion resulting in septicemia.

The few cases above point to disease monitoring as necessary for fishery development. Thus, I recommend (a) the offering of courses on fish pathobiology in the universities, (b) that fish inspection guidelines be prepared on imported/exported fish, (c) a data center be set up and (d) a pathobiology unit established in each Nigerian state. ●



Disease problems are not confined to Nigeria, of course. A disease of catfish in Thailand (pictured) almost wiped out the catfish farming industry there in 1977 and more recently other farmed species have been affected.