

PREVALENCE OF ENDOPARASITE IN SOME COMMERCIALY IMPORTANT FRESHWATER FISHES OF THE BIDA AREA, NIGER STATE: A PRELIMINARY REPORT

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ABSTRACT

The result of this preliminary report highlighted prevalence of an endoparasite (nematode) in order of prevalence. Four non-scaly commercially important fishes, namely:- *Clarias* sp *Heterobranchus bidorsalis*, *Bagrus* sp and *Synodontis* sp.; and nine scaly fishes, namely:- *Gymnarchus* sp, *Protopterus annectus*, *Tilapia* sp, *Lates niloticus*, *Heterotis niloticus*, *Mormyrops* sp, *Channa Obscurus*, *Labeo* sp and *Distochodus rostratus* of freshwater fadama of the Bida Area, Niger State. The extent of the spread was evaluated. While the reactions of fishermen, middlemen (fishmongers) and fish-eaters in order to appreciate the impacts of the nematode infested fishes on the populace were recorded.

The paper suggested areas for further studies towards evoking desirable management strategies for the study area as follows:-

- Identification and confirmation of the nematode species.
- Life cycle of the nematode species
- Influence of season on the prevalence, spread and pathology in the nematode infested fishes, etc.

INTRODUCTION

Fishes are subject to parasites, infections, diseases (Paperna, 1996) and predation (Hine, 1973) like other animals and their reproduction, growth, appearance and welfare are hampered (Mbutia, 1993; Nikolsky, 1976). There exist a relative susceptibility of different fish species to infection (Baldwin et al 1967). Parasites of fish constitute one of the major problems confronting aquaculture. Pathological condition arising from parasitic infestations potentiate serious consequences especially under crowded condition (van den Brock, 1979; Meyer and Hoffman, 1976). Disease aetiology is a complex triad involving the host, the pathogen and the environment (Snieszko, 1974). One organism (host) suffers and the other (parasite) benefits.

The study was conducted to assess the prevalence, extent of spread and reactions of the populace to

nematode infested commercially important fishes of Bida Area, Niger State.

MATERIALS AND METHODS

A standard quantitative information seeking questionnaire was prepared and administered for the study is shown in Appendix I.

Individual and group discussions were held at different fish landing sites: Wuya bridge, Wuya Kede, Doko, Bida (2 Nos Central Markets), Badeggi, Lemu and Katcha. While some notable restaurants (3Nos) where large quantity of fish pepper soup were prepared and sold on daily basis were sampled

100 *Clarias* species of different ages, sizes, sexes and weights were killed in an humane manner, dissected and examined *in situ* at different locations for the presence of nematode.

Laboratory examinations of the fresh and preserved helminth samples were carried out in accordance with standard procedures described by Soulsby (1973) and Shah-Fisher and Say (1989).

RESULTS AND DISCUSSIONS

The different scaly and non-scaly commercially important fishes species infested by the helminth (nematode) in order of prevalence is shown in Table 1. Four non-scaly commercially important fishes, namely:- *Clarias* sp *Heterobranchius bidorsalis*, *Bagrus* sp and *Synodontis* sp.; and nine scaly fishes, namely;- *Gymnarchus* sp, *Protopterus annectus*, *Tilapia* sp, *Lates niloticus*, *Heterotis niloticus*, *Mormyrops* sp, *Channa obscura*, *Labeo* sp and *Distichodus rostratus* of freshwater fadama of the Bida Area, Niger State. Nematode were found free in the gut and/or enclosed singly in sheaths in the muscles of the infested fishes (Zaman and Tak-Seng, 1987; Soulsby, 1973; Shah-Fischer and Say, 1989). On close inspection, these tiny blood-sucking nematode were grossly observed at different depths of the muscles resulting in the undulations on the skin surfaces. In the extreme cases individual fish were found to harbour over 20 worms enclosed in sheaths in the muscles and other organs.

The ranking of the occurrence, in an order of increase, by the locations visited was: Wuya Bridge, Wuya Kede, Doko, Badeggi, Lemu, Katcha. The prevalence of the nematode on commercially important fishes is well recognized for over five decades with the dry season to the onset of rainy season when the main River Kaduna is broken into pools with muddy and grassy environment having no inlet nor outlet facilities. The reactions of the three groups of respondents is shown in Table 2. It was suggestive that all three groups interacted with were at the risk of some obvious economic losses from their dependence on nematode infested fishes. More so, that the infested fishes deteriorate faster coupled with poorer taste than the non-infested ones.

However no case of human health hazard had been documented from eating nematode infected fishes. Although, the fishermen have taboos of partial or total blindness or acute vomiting on eating such infected fishes.

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Table 1: Endoparasite (Nematode) infested commercially important fishes of Bida area, Nigeria

<u>Scientific name</u>	<u>Common name</u>	<u>Hausa</u>	<u>Nupe</u>
Non-scaly fishes			
<i>Clarias</i> sp.	Mudfish	Tarwada	Ezhengi
<i>Heterobranchus</i> sp	Catfish	Ramboshi	Fusson
<i>Bagrus</i> sp	Silver Catfish	Ragonwa	Bola
<i>Synodontis</i> sp	Catfish	Kumgi	Egugi
Scaly fishes			
<i>Gymnarchus</i> sp	Trunkfish	ansaki	Eshin
<i>Protopterus annectus</i>	African Lung fish	Maimama	Edangi
<i>Tilapia</i> sp	Tilapia spp	Gargaza	Tsokungi
<i>Lates niloticus</i>	Nile perch	Giwaruwa	Kima
<i>Heterotis niloticus</i>	Osteoglodid	Balli	Egogi
<i>Mormyrops</i> sp	Mormyrid	Dada	Eqwagi
<i>Channa obscurus</i>	Snake head	Tufi	Magbo
<i>Labeo</i> sp	African carp	Dumi	Edu
<i>Distichodus rostratus</i>	Grasseater	Chihaki	Dzaka

Table 2: Reaction of 3 Groups of Respondents to Nematode Infested Fish Species of Bida Area of Niger State, Nigeria.

Fishermen	Middlemen	Fish-eaters
<p><u>Reaction:</u></p> <p>All our catches are sold em-bloc (i.e without separating the infested from non-infested)</p> <p><u>Comments</u></p> <p><u>Natives (Nupes)</u></p> <p>They were more engaged in crop farming than fishing activities at the dry season period of the year to earn a living.</p> <p><u>Non-natives(Hausas and Jukuns)</u></p> <p>They travel out to their places of origin to engage in dry season crop farming as alternative sources of income. Instead of fishing when the infested fishes are more abundant.</p>	<p><u>Reactions:</u></p> <p>Infested fresh fishes are dressed for sales by nipping of the swollen parts of the body to excise the nematode from the fishes so as to earn more money, eventually.</p> <p>Infested fish are first treated with hot water to facilitate the excision of the nematode from the fishes and later subjected to smoking.</p> <p><u>Comments:</u></p> <p>The excised fresh fishes are easy to recognise at sight and tend to attract much debate during marketing.</p> <p>The nematode infested smoked fish were not as firm in presentation as the non-infested ones.</p>	<p><u>Reactions:</u></p> <p>Eaters always ask the fish pepper soup sellers whether it is made of nematode infested fishes (especially <i>Clarias</i> sp) so as to avoid same.</p> <p>Buyers are always skeptical of buying fish pepper soup from any seller where such observation had once been made.</p> <p><u>Comments</u></p> <p>Debates/rejections are observed over presentations of nematode infested fresh fishes in pepper soups by buyers to sellers.</p> <p>Buyers of such infested fresh fishes do lose both their monies and plates of pepper soup concurrently.</p>

Appendix 1. Investigation of Endoparasite Infestation of Fishes in Bida Area of Niger State

Personal Information

Name of respondent: Age:

Marital status: No. of Wives:

No of Children: Other dependants:

No of years in fishing: Name of Village:

L.G.A: State:

Are you a fisherman:

Do you go elsewhere to fish:

Are you a fish seller: Are you a fish eater:

Histry of worm infestation

When did you first observe worm infestation in your area

Which are the species that are infested:

Explain the extent of infestation:

How will you describe the spread of the worm infestation:

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In which time of the year is the spread more prevalent:

How do you manage such infested fishes:

Socio-economic aspects

Where do you sell your catches

What has been your customers reaction towards such infested fish

Does infested fishes attract prices same as uninfested ones

If no, how are the prices of these categories of infestation determined in the market or landing sites:

Low

Medium.....

High.....

Comments

Any other comments you wish to make?

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