REVIEW OF RESEARCH

NEMATOD FROM FRESH WATER FISH *ANABAS TESTUDINEUS*(BLOCH), DARBHANGA (BIHAR)

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ABSTRACT:

In the nematode parasite research of Darbhanga (Bihar) fresh water fish. The intestine of Freshwater Fish Anabas testudineus (Bloch) of this area was used for a new species of TravnemaAnabansis, nematode. The status and description of new species are given in this article.The trematodes were recognised as kedarai, brahamputratrema sp. and neopodocotyl sp. Asymphylodora. Camallanus, C. Trichuris, C.intestinalus, Onchocamallanus sp., Parascarophis sp. and Cosmoxynemoidnandusi were nematodes as well.

KEYWORDS: *Nematode, TravnemaAnabansis, Anabas Testudineus*

INTRODUCTION:

Herbicides have been used in the agricultural fields as an integral part of modern farm practise globally to protect crops from pest and unwanted plants attack. However, indiscriminate use can jeopardise watershed and farming by agricultural land because this eventually leads to water flows that are damaging to aquatic organisms' natural habitants, such as aquatic insects, molluscs and fish. They may also cause harmful impacts on natural inhabitants in aquatic water. Almix has recently become one of the most popular herbicides in the Indian farming market. It is a type of herbicide in the sulphonyl-urea group, consisting of 10.1% methyl sulfuron, 10.1% ethyl chlorimuron, and 79.80% of other adjuvants [7].It is used in the management of the large sheets of weeds and sidges such as Cyperusiria (Linnaeus, 1753), Cyperusdefformes (Linnaeus, 1856), Frimbristylis sp., Eclipta alba (Linn), CyanotisAxillaris (Don, 1826), Ludwigia Parviflora (Roximus,1820), Monochoria Vaginalis (Roximus, 1827). It is a selective herbicide, both pre-emergent and post emergent, and it is a pathway that kills unwanted plants. It was used at an exceptionally low rate of use in the field , i.e. 8 g / acre and did not exhibit any fluctuation properties; thus, it does not affect neighbouring plants[7].

Sentinel species play a significant role in evaluating environmental quality, while offering a sensitive and accurate approach to assessing levels of xenobiotic pollution in aquatic bodies[8]. Fish, which are an excellent food experimental aliquot for the studies of toxicity since they are the best understood aquatic species at the top of the trophic stage and are exposed, in the end, directly through a surface flush or indirectly via the food chain to these xenobiotic materials[9,10]. Consequently, fish use has become more important worldwide over recent decades to better understand the pollution-induced environmental conditions in the aquatic environment and to monitor the health of the aquatic environment in its entirety[10,11]. In this article, the toxicity model was selected for the experimental study Anabas

testudineus (Anabantidae). Some of the features of these fish species make them an excellent experimental model such as wide water distribution, non-invasive properties , high annual availability, economic value, and fast acclimatisation.

A series of studies have shown that the histopathological improvements, including ultra-structural observations (electron-scanning and transmission microscopy) considered to be reliable and commonly used methods of assessing the health status of organisms subjected both in laboratory and field circumstances to a complex mixture of environmental pollutants (12-14). One of the main benefits of using histopathological biomarkers to track environmental quality is that only the particular target organ toxicity, particularly the stomach and bowel, can be examined. Histopathological biomarkers also play a vital part in the assessment of the overall health of the whole marine community.

A small fish from indigenous waters, Anabas testudineus. It is used to monitor mosquito as column feeder and larvicidal fish. It is also famous for its lean meat, containing easily digestible protein and very low melting fat, as well as several essential amino acids that make them ideal food. In Assam and in the North East, Anabas therefore enjoys high market demand. Parasite value is specifically correlated with fish that can impact public health in general (Hoffman 1967). The effect of the host weight or reproduction, population characteristics, and economic importance of parasite diseases alone or in conjunction with other environmental stresses (Rohde, 1993), may be modified and various trials on helminth fish communities have been carried out.Many workers have identified the effect of parasitic infection over fish lengths (Fagerholm 1982; Amin 1986; Jha & Singha 1990; Barber 2005; Pandey et al. 2012 and Dar et al . 2012). In the intestines of Colisalabiosus in Manipur, Gambhir et al .(2006) studied new nematode of the genus Cosmoxynemoides. The nematode parasites at Utra Lake at Manipur were studied by Geetarani et al .(2010, 2011). Oinam Lake Nematode Parasites in Manipur were studied by Sangeeta et al .(2010, 2011). The new nematode parasite Paraquimperiamanipurensis n were investigated by Shomorendra and Jha (2003). Sp. Sp. From the A bowel. Although several research projects have been undertaken to study helminth infections of fish in NE India, there are very few published reports from the authors of this field that formed the basis for the present study to find out the helminthic infection in A. A was identified. Testudine.[16] Testudineus.

MATERIALS AND METHODS

Dying Pond, Darbhanga (Bihar), obtained Anabas testudineus(Bloch). Fishes were carefully screened for nematode parasites, only 9 of 13 fishes were verified, five were male and four were female. Nematodes in hot 70 % alcohol have been fixed and 10% glycerol has been retained. To accurately analyse all measurements are measured in millimetres, two clearing media glycerol and creosote have been used.

SAMPLING

Acclimation and experimental water quality has been evaluated in conjunction with APHA[15]. At the end of the test (i.e. for 30 days), fish were gathered using the hand net under all conditions and tricaine methanesulfonate (@ 100 mg / l) anaesthetized. After anaesthetic, fish were dissected and desired organs were immediately taken and fixed in the respective histology, scanning and microscopic transmission electron fixatives for the studies.

HISTOPATHOLOGICAL

After dissection, stomach and intestines were fixed overnight in Bouin's aqueous solution. It was then dehydrated with graded series and dehydrated to produce paraffin (70 percent, 90 percent and100 percent). The tissue parts have been cut with a microtome of Leica RM2125 to 3-4 µ and haematoxyline (H&E) stained. The stained sections were then studied under the light microscope Leica DM2000. Leica Image Organizer software took photos to look at the pathological changes.

RESULT AND DISCUSSION:

Nematodes of medium size with cuticular transversal, head end rounded, four papillae of cerebrum. Without lips the mouth circular. The tall, well-sclerotized, mouth capsule. The front of the body is shorter than in the middle. Oesophagus short consists of two parts that are highly developed, the very short pharyngeal portion, the long back part bulbously inflates at its back, and the oesophagus that is opened into the intestine through the broad vulva. the oesophagus is circled on the back of the post-oesophagus. Identical spicles. One couple of post-anal papillae and a pair of pre-anal. Vulva from anterior body end very pre-equatorial. Short, conical tail, with sharp pointing of the vagina.

BODY: body length 3.3-5.1 and thickness of 0.3-0.4 head in diameter 0.2-0.3. Circular mouth without lips, well formed mouth capsule. It measures 0.3-0.5 and measures anterior narrow part of the osophagus (isthme), consisting of two parts (anterior) pharyngeal and measures 0.4-0.6, respectively. Nerve ring around Isthmus, excretory pore distance 0.8-0.9, anterior end. The spicules are similar and the back end tests 0.5-0.7. Missing Gubernaculam. There are one pair of pre-anals and one pair of post-anals. Conical tail, 0.4-0.5 pointing from back end.

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Table 1: Comparison with certain known forms of Travaneman.sp.
(All measurements in mm are otherwise indicated)

MALE			
Characters	**T.araujoi**	**T.travnema**	**T.anabansis n.sp.**
Length	2.35	-	3.3- 5.1
Thickness	0.204	-	0.3 – 0.4
Oesophagus			
Anterior	0.093	-	0.3 – 0.5
Posterior	0.081	-	0.4 – 0.6
Nerve Ring	0.147	-	0.5 – 0.7
Excretory pore	0.666	-	0.8 – 0.9
Spicule	0.063	-	0.5 – 0.7
Papillae pre	1 pair	-	1 pair
Post	-	-	1 pair
Tail	0.219	-	0.4 – 0.5

FEMALE			
Length	4.62 – 5.78	2.86 – 3.05	6.7 – 8.9
Thickness	0.367 – 0.490	0.340	0.4 – 0.5
Oesophagus			
Anterior	0.126 – 0.141	0.120 – 0.123	0.3 – 0.6
Posterior	0.081 – 0.108	0.036 – 0.045	0.6 – 0.7
Nerve Ring	0.183 – 0.204	0.138 – 0.144	0.5 – 08
Excretory pore	1.06 – 2.76	-	1.9 – 2.1
Dist. Of vulva	2.05 – 2.76	1.59	2.2 – 3.2
Tail	0.201 – 0.270	0.147 – 0.156	0.5 – 0.6

The infestation prevalence was 32.5% and the infestation average severity was 1.46 ±1.29. The prevalence in men and women hosts was respectively 34.61% and 28.57% (Table 2). In males (1,5±1,21) the average strength was much higher than in females (1,375±0,99). The current survey showed the prevalence and severity of both men and women is higher than women (Table 2). Male hosts have been shown to be more contaminated than women. Also in Anabas testudineus, Akther (1995) showed the same result. The key explanation for the variations in parasitary sex load, according to Aloo et al.(2004), are physiological. The prevalence and severity of parasites of various groupings was found to be different for the sex of hosts in this research.

Table 2.Prevalence and strength of Nematod parasites in Anabas Testudineus by sex

Host Sex	No.of host examined	No.of host infected	No. of parasites	Prevalence (%)	Mean intensity ±SD
Male	52	18	27	34.61	1.5±1.21
Female	28	08	11	28.57	1.375±0.99
Total	80	26	38	32.5	1.46±1.29

Trematodes, acanthocephalans and nematodes were confirmed to be trematodes of 13.75%, 6.25%, 3.75%, 8.70%, and mean intensities of 1.64±0.67, 1.6±0.55, 1.0±0.00 and 1.28±0.49.The highest prevalence (13.75%) and severity (1.64±0.67) were confirmed in trematodes.

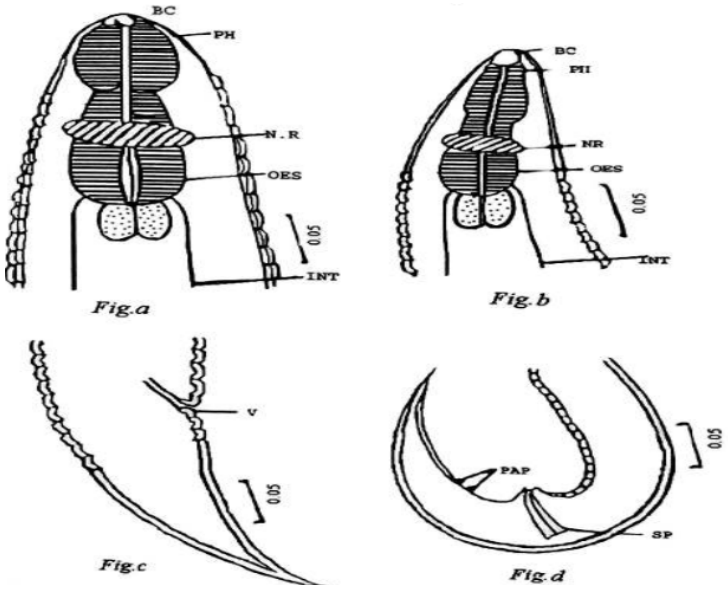

Figure 1:Trvnemaanabansisn.sp a. anterior end of female; b. anterior end of male; c. posterior end of female; d. posterior end of male.

CONCLUSION:

The Ascaridida sp nematodes. And in their larval stages, Centrocestuscaniuswere present. Adult stadiums were also parasites. The most prevalent parasite of Anabas testudineus was. Camallanusanabantis and Capillaria sp contaminated all of the Anabas testudineus. Capillaria sp was infested with all heteropneustesfossilis.

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