Digenean Trematode Parasites and Cyprinid Fish

Catla catla

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Abstract: Cyprinid fish Catla catla is a major carp fish of the water bodies of Jaunpur Uttar Pradesh. It has a great economical value in freshwater fish in India. They are mid water feeder. Catla catla is a important fish of polyculture in the ponds. Some time they suffered with helmith infections which damage their outer and inner body parts. In which trematode parasites are major part of helmith infection. In our investigation we were trying to known the burden of digenetic trematode parasites in fresh water fish Catla catla. These are commonly known as Bhakur. The infection deteriorate fish quality and quantity. We use ecological parameters to know the burden of infection monthly as well as seasonally. 390 fishes were examined. Total 98 were found infected.

Keywords: Trematode parasites & Catla Catla

1. Introduction

Catla catla is a important fish in available edible variety of fishes in water bodies in Jaunpur district. They are largely cultured in the ponds. They are good source of protein and minerals for our daily life. But helmith infection affects their food value. Health of any population depends on the control of disease and maintenance of a healthy relationship between living organism and their environment (Snieeszko 1983). The influence in relation to the length of fish has been described by many workers (Jha and Sinha 1990, Shomorendra et al. 2005,2007). Besides this Bhuiany et al. (2007), Banu et al. (1993). Chandra et al. (1997) worked on seasonal variation in the population of a single helmithes parasites associated with a particular host fish. There are a number of helmithes parasites, which are transmitted to human beings only through fish (Gupta 1959). These parasites use the fish for their shelter and food and destruct every organs resulting in pathogenic effects (Dogiel 1958). Parasites interfere with the nutrition, metabolism and secretory function of alimentary canal, damage nervous system (Markov 1961). To Reaching this long term objective will depend on the detailed information and knowledge on the ecology of main disease threads (karvonen et al.2005).A Pathoanatomical Limnological study of Argulosis in Indian Major Carp in freshwater (Samir 2007).Study on parasites of Exotic Carp (Majumder, 2011) Risk factors, management issues and economic impacts of diseases on carp aquaculture (Vineetha et al. 2009).Ayyappan (2014) reported that aquaculture in India is almost synonymous to carp culture and alone contributes to more than 80% of the total aquaculture production of the country. Distribution of helmithes parasites in different Size group and organs of fish (D’ Silva et al. 2012). Prevalence of helmithes parasites infecting Channa punctatus (Kundu I. et al. 2015).

Prevalence of parasitic infection in the fresh water fishes (Sarmin et al 2018). Studies on digenetic trematode parasites in fresh water carnivorous fish of jaunpur (Singh et al. 2018).Presence of digenetic trematode parasites of cypriniformes fish Labeo rohita (Mishra et al. 2019). In our study we found out different ecological aspects in cyprinid fish Catla Catla.

2. Research Material and Methods

The Collection of the living fish samples of all size, sex, weight from different study center of Sai River and ponds (Bargudhar ghat, Fattupur ghat, Khampur ghat ,Gujar tal and some local ponds of study area) .Our study period was between January to December 2018. All specimens were brought to the laboratory in a plastic container and put in a glass aquaria. Fishes are measured by standard protocol (Paperna 1996). The dissecting animal were examined through all the internal parts of the fish. Then we fix the trematodes in 10% formalin followed by borax carmine. Washing the material with distilled water using ascending grades of alcohol for dehydration .After the dehydration the specimens mounted in DPX. Helmithes parasites were identified up to class level on the basis of available taxonomical character as described (Yamaguti 1958, 1961,1963).We used the formulae proposed by ( Morigolian et al. 1982), formula for prevalence ,abundance , mean intensity, infestation index and Dominant % .

3. Research Findings

Total 390 fishes were examined during experiment. Different aspects were shown in the following tables –

Table 1: Monthly variation of different ecological parameters

<table>
<thead>
<tr>
<th>Month</th>
<th>Number Of Host Examined</th>
<th>Number Of Host Infected</th>
<th>No. Of Parasites Recovered</th>
<th>Prevalence %</th>
<th>Mean Intensity</th>
<th>Abundance</th>
<th>Dominant %</th>
<th>Infestation Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAN</td>
<td>29</td>
<td>9</td>
<td>13</td>
<td>31.04</td>
<td>1.45</td>
<td>0.45</td>
<td>7.88</td>
<td>0.13</td>
</tr>
<tr>
<td>FEB</td>
<td>35</td>
<td>4</td>
<td>7</td>
<td>11.43</td>
<td>1.78</td>
<td>0.20</td>
<td>4.24</td>
<td>0.02</td>
</tr>
<tr>
<td>MAR</td>
<td>39</td>
<td>13</td>
<td>32</td>
<td>33.33</td>
<td>2.47</td>
<td>0.83</td>
<td>19.40</td>
<td>0.27</td>
</tr>
<tr>
<td>APR</td>
<td>22</td>
<td>3</td>
<td>7</td>
<td>13.64</td>
<td>2.34</td>
<td>0.32</td>
<td>4.25</td>
<td>0.04</td>
</tr>
<tr>
<td>MAY</td>
<td>36</td>
<td>7</td>
<td>13</td>
<td>19.45</td>
<td>1.86</td>
<td>0.33</td>
<td>7.88</td>
<td>0.07</td>
</tr>
</tbody>
</table>

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Table 2: Seasonal variation in different ecological parameters

<table>
<thead>
<tr>
<th>Season</th>
<th>No. of Host Examined</th>
<th>No. of Host Infected</th>
<th>No. of Parasites Recovered</th>
<th>Prevalence (%)</th>
<th>Mean Intensity</th>
<th>Abundance Dominant (%)</th>
<th>Infestation Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer</td>
<td>123</td>
<td>31</td>
<td>67</td>
<td>25.20</td>
<td>2.16</td>
<td>.54</td>
<td>40.66</td>
</tr>
<tr>
<td>Rainy</td>
<td>137</td>
<td>29</td>
<td>44</td>
<td>21.16</td>
<td>1.51</td>
<td>.32</td>
<td>26.66</td>
</tr>
<tr>
<td>Winter</td>
<td>130</td>
<td>38</td>
<td>54</td>
<td>29.23</td>
<td>1.42</td>
<td>.41</td>
<td>32.72</td>
</tr>
</tbody>
</table>

Graph (Table no. 1)

Graph (Table no. 2)
In our experiment we found 98 samples were infected in which 165 parasites were recovered.

4. Conclusion

In our present experiment we reach the conclusion that the infection of fishes were affected both monthly and seasonally. As mentioned there are various ecological factors affect the fresh water hosts of water bodies. By preventing infections we secure their food value. We should need to aware the people about the fish infection and their preventing procedure. It is very important to prevent the infectious agent found in fishes for their economic value.

References
