

## Seasonal analysis of cestode parasite, *Lytocestus indicus* in fresh water fish, *Channa striatus*

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### ABSTRACT

The present study deals with seasonal variations of cestode parasite, *Lytocestus indicus* found to infect the fresh water fish, *Channa striatus* from Warangal district of Andhra Pradesh, during 2005-06 to 2006-07. The incidence of infection, intensity of infection, density of infection and index of infection of the parasite have been recorded. The infection was more during summer, moderate during winter and low during the rainy season.

**Key words :** *Channa striatus*, *Lytocestus indicus*, Incidence, Intensity, Density

*Lytocestus indicus* is a caryophyllaeid cestode parasite commonly occurring in stomach or stomach and duodenal junction of fresh water fishes. It is a common cestode parasite found in majority of Cyprinoid and Silurid fresh water fishes, especially in the tropics and subtropics. In the present study, this parasite was found frequently to occur in the host, *Channa striatus*. The occurrence of cestode parasites found in piscian hosts was reported by several investigators (Moghe, 1925 and 1931; Satpute and Agarwal, 1974 a, b; Kadav and Agarwal, 1983; Zaman and Seng, 1990; Laxma Reddy and Benarjee, 2008).

In the present study an observation has been made on the percentage of incidence of infection, parasite density and seasonal variation of *Lytocestus indicus* in *Channa striatus*.

### MATERIALS AND METHODS

The fish, *Channa striatus* were procured from freshwater bodies such as rivers, tanks, lakes and ponds, located in the Warangal district of Andhra Pradesh. To identify the infection and also to collect the parasites, the fish were dissected and various visceral organs such as digestive tract, gall bladder, liver were examined carefully after placing them in a Petridish containing normal saline. The parasites collected from the infected fish were

enumerated and permanent slides were prepared by preserving the fresh parasites in 10% formaldehyde for 48 hrs. and later stained with *Alum carmine* (Pearse, 1968; Bancroft, 1975).

The study was conducted for 2 consecutive years *i.e.*, starting in July and ended in June of the next year. The observation has been done on incidence of infection, intensity of the infection and the index of infection of the parasite to the host. The seasonal variation of the infection and density of parasites in the host were recorded. The following equations were adopted to calculate the various biostatistical parameters of the parasite (Laxma Reddy *et al.*, 2006):

$$\text{Incide of infection } (X_1) = \frac{\text{No. of hosts infected (b)}}{\text{No. of hosts examined (a)}}$$

$$\text{Intensity of infection } (X_2) = \frac{\text{No. of parasites collected (c)}}{\text{No. of hosts infected (b)}}$$

$$\text{Density of infection } (Y_1) = \frac{\text{No. of parasites collected (c)}}{\text{No. of hosts examined (a)}}$$

$$\text{Index of infection } (Y_2) = \frac{\text{No. of hosts infected (b)} \times \text{No. of parasites collected (c)}}{\text{No. of hosts examined (a}^2)}$$

### RESULTS AND DISCUSSION

The statistical analysis (Table 1) shows that the incidence, intensity, density and index of infection of the parasite, *Lytocestus indicus* was low during rainy and moderate during winter and it has raised in summer (Fig.

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