Seasonal Population Dynamics of Cestode Parasites of marine fish *Trygon sp.* from Thane District, M S (India)

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Abstract
This is the minute study of population dynamics of cestode parasites in *Trygon* fish species from various localities of Thane District during period of April 2017 to March 2018. Total 165 cestode parasites collected out of 271 trygon fish .The *Trygon* fish infected with families Tentacularidae poche(1926), Lecanicephalidae braun(1900) and Gymnorynchidae Dollfus (1935). This report shows that high prevalence of the cestode parasites recorded in summer season, moderate in winter season and low in rainy season.

Key words: Population dynamics, *Trygon sp.* cestode, Thane.

I. INTRODUCTION

Fishes are the main source of food having biomolecules such as protein,lipids vitamins. They play an important role in the national economy. Fishes are stapel food for human in India and ultimately supports for economy. Schimidt and Roberts, (2000) states that the endoparasitic helminths, with indirect life cycles, involve one or more hosts. Dogiel et al. (1961), stated that adversed periodical changes in water such as temperature, pH and conductivity affect on the occurrence of parasites from aquatic host. These climatic conditions host behavior influenced by habitat and seasonal, while physical state external factors affect internal conditions.

The vast studies has been carried out on the helminth parasites and population dynamics of those occurring in piscian hosts and work on different aspects of parasites. The study of population dynamics can be used as the biological basis of method to regulate population of parasites.The current investigation deals with the study of seasonal population dynamics of cestode parasites from marine water *Trygon* fish.

II. MATERIALS AND METHODS

From the vicinity of Thane district marine water fishes were collected during the period of April 2017 to March 2018. As soon as fish were collected and examined for cestode infection. The collected cestode were washed in saline solution and preserved in 4% formalin for further taxonomical studies. Cestode parasites were stained by harris haematoxylin, dehydrated, cleared in xylene, mounted in DPX. Identification was carried out with the help of standard identification keys. The data of collected parasites recorded carefully showing seasonal population dynamics through the one annual cycle. The percentage of incidence, intensity, density is analyzed by using formulae.

1) Incidence of infection = $\frac{\text{Infected host X100}}{\text{Total no of host examined}}$

2) Intensity of infection = $\frac{\text{No. of parasites collected in a sample}}{\text{No. of infected host}}$

3) Density of infection = $\frac{\text{No. of parasites collected in a sample}}{\text{Number of host examined}}$

4) Index of infection = $\frac{\text{No. of host infected X No. of parasites collected}}{(\text{No. of host examined})^2}$

III. RESULTS AND DISCUSSION

The Population dynamics results shows that out of 271 *Trygon* marine fishes 106 (39.11 %) fishes were infected with infected with cestode parasites families Tentacularidae poche.,(1926) Lecanicephalidae Braun, (1900) and Gymnorynchidae Dollfus.,(1935) from Thane district. A total 165 cestodes were found during one annual cycle. During present investigation the infection of cestode parasites to the host is high rate in summer, moderate in winter and low in rainy season. The values of the incidence, intensity, density and index of infection of cestode parasites are shown in Table no 1.

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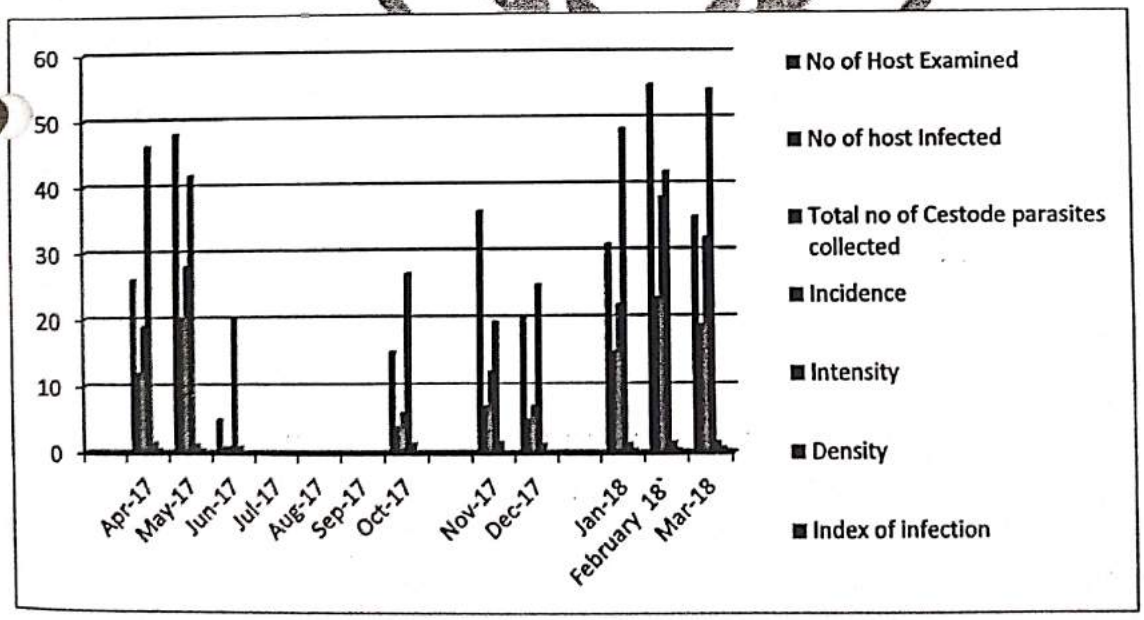
The various sources provided crucial information related to the influence of season on the cestode parasites. Jadhav and Bhure, (2006) observed climatic conditions determine the general features of the parasitic fauna and the health of host fishes. Khan (2012) observed aspects like humidity, temperature and rainfall, feeding habits of host, availability of infective host and parasite maturation are liable for affecting the parasitic infections. With the observation of Pennyuick., (1973) a large number fishes were found infected of parasites from late winter till the end of summer since as ecological factors are suitable in these months. Supugade V et .al, (2017) reported that The existence of infection of cestode *Tylocephalum salunkhi n.sp*. This infection was high rate in summer, average in winter and mild in rainy season.

This report shows that high prevalence of the cestode parasites recorded in summer season, average in winter season and low in rainy season.

Table No. 1 showing the values of incidence No. of host species observed, No. of host infected, Total no. of cestode collected, Incidence %, Intensity, Density, Index of infection

Name of Month	No of Host species observed	No of host Infected	Total no of Cestode parasites collected	Incidence %	Intensity %	Density %	Index of infection
Apr 17	26	12	19	46.15	1.58	0.73	0.3372
May 17	48	20	28	41.66	1.4	0.58	0.2430
June 17	5	1	1	20.00	1.0	0.20	0.04
July 17	0	0	0	0	0	0	00
August 17	0	0	0	0	0	0	00
Sept. 17	0	0	0	0	0	0	00
Oct.17	15	4	6	26.66	1.5	0.40	0.1066
Nov. 17	36	7	12	19.44	1.71	0.33	0.0648
Dec. 17	20	5	7	25.00	1.4	0.35	0.0875
Jan.18	31	15	22	48.38	1.46	0.70	0.3433
Feb. 18`	55	23	38	41.81	1.65	0.69	0.2889
March 18	35	19	32	54.28	1.68	0.91	0.4963
Total	**271**	**106**	**165**	**39.11**	**1.5566**	**0.6088**	**0.2381**

Graph 1 showing the values of incidence No. of host species observed, No. of host infected, Total no. of cestodes collected, Incidence in %, Intensity, Density, Index of infection.



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