

Seasonal variation of *Moniezia* (Blanchard) in *Capra hircus* at Sangamner region, Ahmednagar district (M.S.), India

V.R. Pawade^{1*}, V.M. Pulate², H.K. Bhagwan³

¹A.S.C. College, Rahata, Dist. Ahmednagar (M.S.), India

²P.V.P. College, Pravaranagar, Dist. Ahmednagar (M.S.), India

³P.G. Department of Zoology, S.M.D.M. Mahavidyalya, Kallam 413507, India

Abstract

The present statistical communication deals with the study of seasonal variation of cestode *Moniezia*, along with incidence and intensity of the parasites according to the seasons in the year Oct 2007 to Sept 2008 at Sangamner region, district Ahmednagar. The seasonal variation of gastro-intestinal cestodes infection shows the high prevalence, which occur in winter (32.07%) following by Rainy (30 %) and summer (24.13%) because of easy dispersal of parasite resulting is increased in contact with the host and the parasites.

Keywords: Cestode, Prevalence, *Capra hircus*, Intensity, Season

INTRODUCTION

About 82% of population of Sangamner region in rural and depends directly on agriculture and animal husbandry. Parasitic infection affects the gastro-intestinal tract of *Capra hircus*. Often without clinical manifestation is major cause of production loss. The incidence of cestode infection varies with age, sex, season and agro-climatic conditions.

The effect of climatic factors on helminthes are studied by the workers like Lawrence [10], Crofton [3]. Many authors worked considerably on the population dynamics of the cestode parasites from different hosts. Dogiel *et al.* [4,5], Hopkins [7], Pennyquick [13], Anderson [1], Susheela [17] have clearly shown the seasonal effect on the distribution of the cestode parasites.

MATERIAL AND METHOD

For the study of parasites, the intestine *Capra hircus* was collected from different region of Sangamner, from Oct 2007 to Sept 2008. The parasites were collected, flattened, stained and identified, also record of infected and non infected hosts and number of parasites for further study. The parasites were identified with the help of "Systema Helminthum" by Yamaguti, S. [18].

Data was collected month wise and the incidence and intensity of parasites calculated seasonally.

*Incidence of infection = $(B \times 100) / A$ *Intensity of infection = C / B

Where A stands for number of host examined,

B stands for number of host infected and

C stands for number of parasites collected.

RESULT AND DISCUSSION

After closer observation the collected parasites were found

belonging to genus *Moniezia* Blanchard [2]. From the recorded data from given Tables shows that, Out of 161 hosts examined 46 (28.57%) are found positive for the Moniezian parasitic infection. Sarode [16] observed higher incidence of mixed infection (22%) while Sanjay kale [15] observed higher percentage of single infection in sheep and Goat (55.83%) and (21.17%) were mixed infection. The seasonal variation of Moniezian cestode parasitic infection shows that the higher prevalence of parasites occurs during the winter season (32.07%) followed by Rainy (30%) and summer seasons (24.13%) where as the intensity of infection is maximum in Rainy season (2.13) and minimum during summer season (1.18). The incidence of parasitic infection occurs during winter season because of the suitable climatic conditions and the availability of food i.e. pastures during their development. The prevalence of this cestode parasite varies considerably depending on local environmental conditions such as humidity, temperature, rainfall, vegetation and management practices. Climatic conditions are responsible for the distribution and prevalence of the disease. It is well recognized that in resource poor regions of the world helminth infections of sheep and goats are major factors responsible for economic losses through reduction in productivity and increased mortality Over *et al.*, [11]. The effect of climatic factors on helminthes have elaborately studied by Kennedy [8,9], Lawrence [10], Crofton and Esch [3,6]. The considerable work on population dynamics were carried out by many authors, such as Esch G.W. [6], Ram Reddy [14]. The season, host, age and sex affect the distribution of endohelminths from *Catostomus commersoni* Lawrence [10]. Cestode parasites made their impact on the livestock in the developing countries [11].

Received: July 18, 2011; Revised September 09, 2011; Accepted September 18, 2011.

*Corresponding Author

Pawade V.R

A. S.C. College, Rahata, Dist. Ahmednagar (M.S.), India

Tel: 09604569942; Fax: 09604569942

Email: vishnupawade@gmail.com

Table I- Prevalence and seasonal incidence of *Moniezia* in *Capra hircus* during different season.

A) Winter (Oct 2007 to Jan 2008)

Month/Year	No. of host examined	No. of host infected	No. of parasites collected	% of incidence	Intensity
Oct2007	12	06	13	50.00	2.16
Nov2007	09	04	05	44.44	1.25
Dec2007	15	02	06	13.33	3.00
Jan2008	17	05	11	29.41	2.20
Total	53	17	35	32.07	2.05

B) summer (Feb2008 to May 2008)

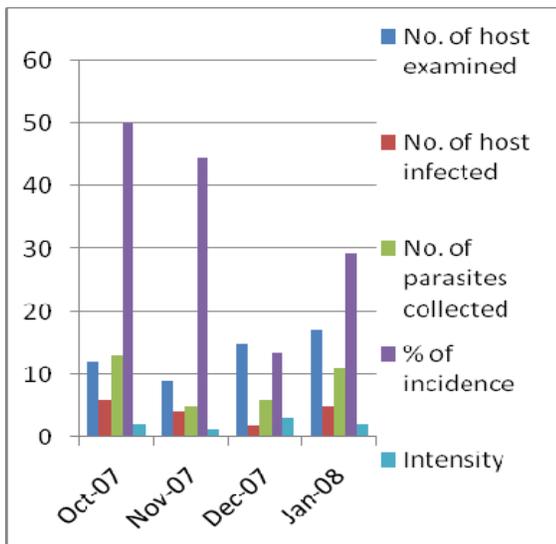
Month/Year	No. of host examined	No. of host infected	No. of parasites collected	% of incidence	Intensity
Feb2008	14	04	01	28.57	2.00
Mar2008	16	02	04	12.50	2.00
April 2008	15	05	08	33.33	1.60
May2008	13	03	05	23.07	1.66
Total	58	14	25	24.13	1.78

C) Rainy (June 2008 to Sept.2008)

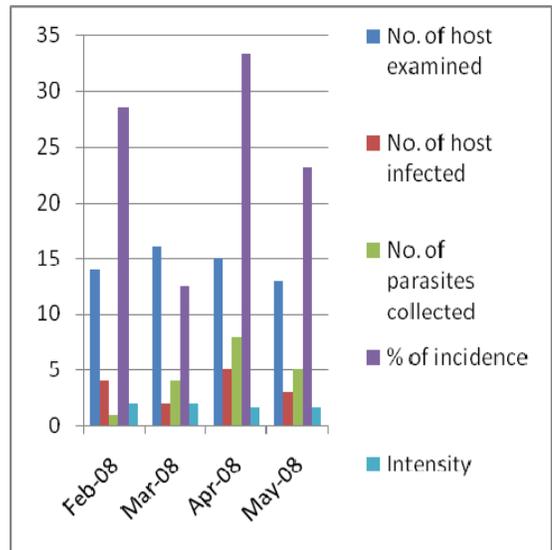
Month/Year	No. of host examined	No. of host infected	No. of parasites collected	% of incidence	Intensity
June2008	11	02	02	18.18	1.00
July2008	10	02	08	20.00	4.00
Aug.2008	15	07	12	46.66	1.71
Sept.2008	14	04	10	28.57	2.50
Total	50	15	32	30.00	2.13

Table II- Shows seasonal variation of infection, incidence and intensity of infection during Oct. 2007 to Sept. 2008.

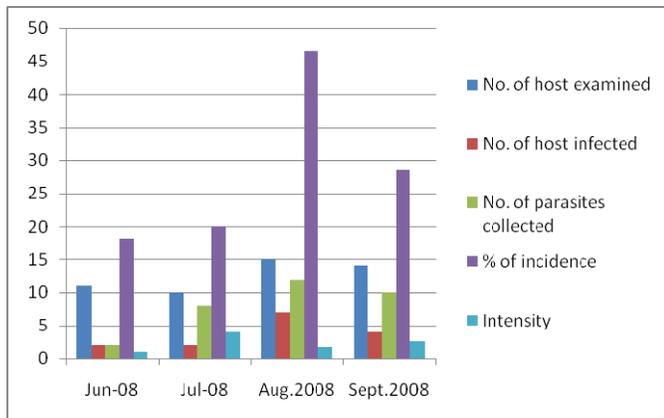
Sr. No.	Season	No. of host examined	No. of host infected	No. of parasites collected	% of incidence of infection	Intensity of infection
1	Winter	53	17	35	32.07	2.05
2	Summer	58	14	25	24.13	1.78
3	Rainy	50	15	32	30.00	2.13



A) Winter (Oct 2007 to Jan 2008)



B) summer (Feb2008 to May 2008)



C) Rainy (June 2008 to Sept.2008)

Figure – I. Prevalence and seasonal incidence of *Moniezia* in *Capra hircus* during different season.

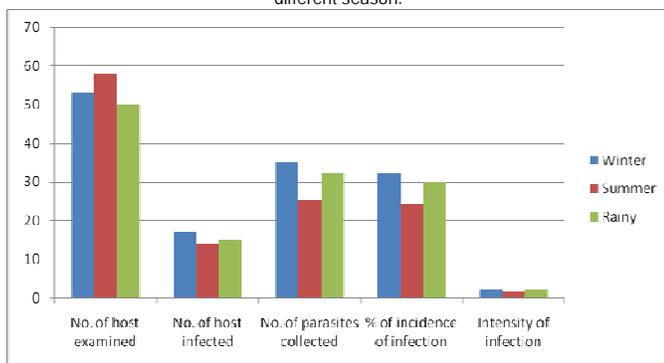


Figure – II. Shows seasonal variation of infection, incidence and intensity of infection during Oct. 2007 to Sept. 2008.

From the above data it is cleared that season plays a vital role in cestode infestation. The variation may be due to feeding habits of the host, diversity of the climatic conditions and availability of intermediate host.

ACKNOWLEDGEMENT

Author thankful to the Principal of A. S.C. College, Rahata, Dist. Ahmednagar (M. S.) India for providing all necessary facilities.

REFERENCES

[1] Anderson, R. M. 1976. Seasonal variation in the population dynamics of *Cryptophyllaeus laticeps*. *Parasitology*, 72:281-305.
 [2] Blanchard R. 1891. Sur les helminthes des primates antropoides. *Mem. Soc. Zool. France*, 4: 420-489.
 [3] Crofton, H. D. 1971. "A quantitative approach to parasitism" *Parasitol.*, 62:179-193.
 [4] Dogiel, V.A. 1964 In general parasitology *English translation*,

Oliver and Boyd, Edinberg and London.

[5] Dogiel, V.A. 1958. Parasitology of fishes, *Leningrad University press, Oliver and Boyd, Edinberg and London.*
 [6] Esch G.W. 1977. Regulation of parasitic population. *Academic Press, INC. New York.*
 [7] Hopkins, C. A. 1959. Seasonal variation in the incidence and development of the cestode *Proteocephalus fillicolis* (Rud.1810) in *Gasteosteus aculeatus* L. 1766. *Parasitol.*, 49:529-542.
 [8] Kennedy, C.R. 1968. Population biology of the cestode *Caryophyllaeus laticeps* (Pallas, 1781) in duce, *Leuciscus* L., of the river. *Avon. J. Parasitol.*, 54, pp. 538-543.
 [9] Kennedy, C.R. 197. The effect of temperature on the establishment and survival of the of the cestode *Caryophyllaeus laticeps* in orfe, *Leuciscus idus*. *Parasitol.*, 63: pp. 59-66.
 [10] Lawrence, J. L. 1970. Effect of season, host age and sex on endohelminths of *Castostomus commersoni*. *J. Parasitol.* 56: 567-571.
 [11] Over, H.J., Jansen J. And Von Olm, P.W. 1992. Distribution and impact of helminth diseases of livestock in developing countries. *FAO animal production and health paper 96. FAO of United Nation Rome, Italy*, pp.221.
 [12] Patrick and Esch G.W. 1977. Seasonal incidence in the painted turtle, *Chrysemys picta*. *J. Parasitology*, 53, pp. 818-821.
 [13] Pennyuck 1971: Seasonal variation in the parasitic population of three spined stickleback. *Gasteosteus aculeatus* L. *Parasit.*, 63: 373-388.
 [14] Ram Reddy, G.B. 1980. Studies on the population dynamics of helminth parasites of certain lizards of Hyderabad *Ph.D. thesis Osmania University, Hyderabad, India.*
 [15] Sanjay Kale, 2007. Prevalence of helminthic infection in sheep and goats from Latur District (M. S.) *National Journal of life Sci.* 4(3) (149-150).
 [16] Sarode, B. D.; Dakshinkar, N. P., Rode, A. M., Shrikhande, G. B. Meshram. 1999. *Ind. Vet. J.*, 76:13.
 [17] Susheela G. 1987. Study on population dynamics of helminth parasites of rats from Hyderabad and its surroundings. *Ph.D. Thesis, Osmania University, Hyderabad, India.*
 [18] Yamaguti, S. 1957. Systema Helminthium, vol. II. Cestodes of vertebrates, *Interscience Publishers Inc, New York and London*