



---

**STUDIES ON SEASONAL DYNAMICS OF HELMINTHIC INFECTION OF  
FRESHWATER FISH WALLAGO ATTU**

---

**N. B. Gavhane, P. S. Manoorkar, Dhanraj Balbhim Bhure,**

**Sanjay Shamrao Nanware and M. S. Kadam**

Post Graduate Department of Zoology, Yeshwant Mahavidyalaya, Nanded, M.S., India

*Corresponding Author - D. B. Bhure*

**Email - [drajbhure82@gmail.com](mailto:drajbhure82@gmail.com)**

---

**Abstract:**

*The present study was undertaken to determine the seasonal dynamics of helminth parasites of freshwater fish species of genus Wallago attu at different collection sites of Nanded district (M.S.) India during June 2021 to May 2022. The high incidence of infection of Helminth was recorded in summer season (77.50%) followed by winter season (47.50%) whereas infection was low in monsoon season (22.50%) respectively.*

---

**Keywords:** *Freshwater fishes, Helminth parasites, Nanded, Seasonal dynamics, genus Wallago attu.*

---

**Introduction:**

The aquatic parasites are acquiring potential attention in ecological point of view due to their interrelationship with their hosts. Further, their role as 'biological tags' has attracted many scientists to use them as sensitive probes to monitor changes in the environmental factors. But on the other hand, parasites affect fish health, growth, behaviour, fecundity and mortality and also regulate host population dynamics and their community structure. Helminths are one of the major groups of fish parasites and

cause a severe loss in the fish production. Fishes are infected with two major groups of helminths: the Platyhelminthes (flat worms i.e. Cestodes & Trematodes) and Nematoda (round worms.) About 20,000 to 30,000 helminth species have been reported worldwide, which cause heavy losses to the fish industry. The present study was undertaken to study the seasonal dynamics of helminth parasites in freshwater fish of genus Wallago attu of Nanded district.

**Materials and Methods:**

Present investigation deals with the occurrence and seasonal dynamics of Helminth from the intestine of *Wallago attu*, at different collection sites of Nanded district (M.S.) India during June 2021 to May 2022. In the present study 120 *Wallago attu* were examined for helminthic infection. Out of 120 hosts, 59 (49.16%) were positive with helminthic

infection. Collected worms were preserved, mounted and identified by standard methods described by Research guide Dr. D.B.Bhure. Obtained data were recorded; processed for study of seasonal variation. Collected helminths are identified as *Gangesia sp.*, *Silurotaenia sp.*, *Isoparorchis sp.*, and *Philometra sp.*

### Results and Discussion:

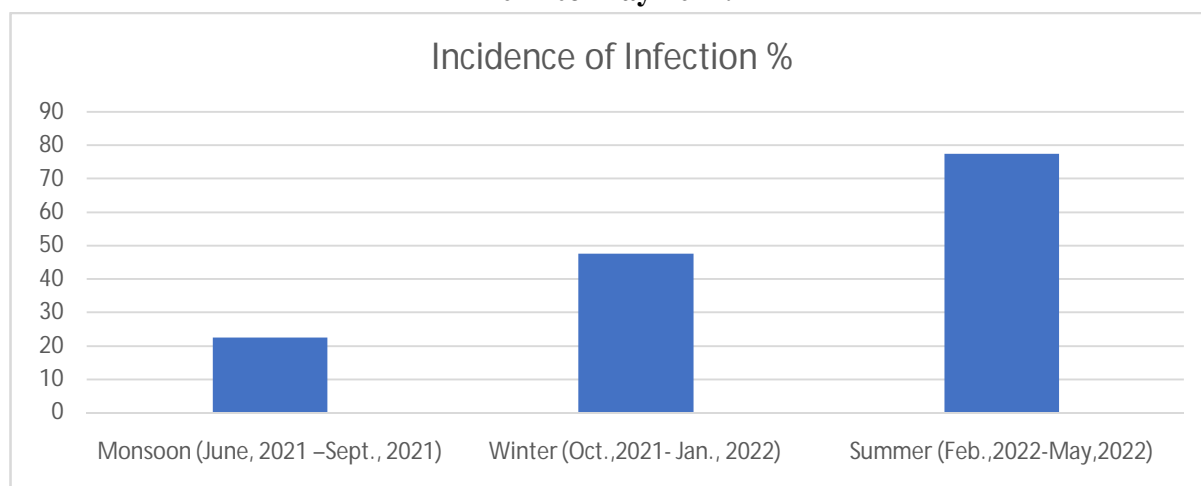
The survey was carried out with 120 freshwater fishes, Wallago attu, from various collection sites of Nanded region. Out of 120 freshwater fishes 59 were infected with helminths, as found in annual cycle from June 2021 to May 2022. Results of present study showing prevalence of piscean helminths are presented in Table 01. & Graph 1. The high incidence of infection was recorded in summer season (77.50%) followed by winter season (47.50%) whereas infection

was low in monsoon season (22.50%) respectively. According to Kennedy C.R. (1976) in his report stated that temperature; humidity, rainfall, feeding habits of host, availability of infective host and parasite maturation are responsible for influencing the parasitic infections. High temperature, low rainfall and sufficient moisture were necessary for development of parasite were reported by Jadhav and Bhure, (2006).

**Table 1- Incidence of infection helminths from intestine of *Wallago attu* during June 2021 to May 2022.**

Seasons	Number of host Examined	Number of host Infected	Incidence of Infection %	Number of Helminths collected
Monsoon (June, 2021 –Sept., 2021)	40	09	22.50	13
Winter (Oct.,2021- Jan., 2022)	40	19	47.50	25
Summer (Feb.,2022-May,2022)	40	31	77.50	41
<b>Total</b>	<b>120</b>	<b>59</b>	<b>49.16</b>	<b>79</b>

**Graph 1- Incidence of infection helminths from intestine of *Wallago attu* during June 2021 to May 2022.**



Results of present investigation are in agreement with Bhure et.al.,2018 reported incidence of infection of *Gangesia marathwadensis* from *Wallago attu* in Summer (75.00 %) followed by

Winter (46.25 %) whereas infection was low in monsoon (22.50%). Bhure and Nanware, 2014 reported high incidence of infection of *Cotugnia dignopora*, *Cotugnia diamarae* and *Raillietina (R.) domestica* in

summer (75%, 67.85 % & 71.42%) followed by winter (60%, 52 % & 48%) whereas low infections in monsoon season (38.09%, 33.33% & 38.09%). Bhure and Nanware, 2014 recorded high incidence of infection of *Senga sp.*, *Gangesia sp.*, *Proteocephalus sp.* infected to *Channa sp.* was in summer (76.66 %, 73.33 % & 70.00 %) followed by winter (65.21 %, 52.17% & 56.52%) whereas infection was low in monsoon (36.84%, 26.31% & 31.57%). Shahin et.al., 2011 studied prevalence of Chicken Cestodiasis in Egypt and reported highest incidence in summer 5.54% and Autumn 5.6% and lowest incidence during Winter 3.3% and Spring 2.2%. Bhure et al., 2013 studied

Analysis of present study shows high Prevalence in summer followed by winter where as low in monsoon due to environmental factors and feeding habitat influence the seasonality of parasitic infection either directly or indirectly. This

#### Acknowledgements:

NBG and PSM are thankful to SARATHI for financial Assistance. The authors express sincere thanks to Principal,

#### References:

1. Anwar A.H., Hayat S. and Hayat C.S. (1991): Prevalence of gastrointestinal parasitic fauna of indigenous and exotic layer chickens in and around Faisalabad. *Pak Vet J.* 1991;1:9-12
2. Bhure Dhanraj Balbhim 2008. Faunal diversity of helminth parasites of freshwater fishes from Maharashtra State, India. *Ph.D. Thesis, Dr. B. A.M.U.Aurangabad, M.S.India. pp.1-178.*
3. Bhure, D.B., Nanware, S.S., Kardile, S.P. and Dhondge, R. M., 2010. A

survey of the population ecology of *Rhabdochona* Ralliet, 1916 (Nematoda-Rhabdochoniidae) from *Labeo rohita* (Ham. and Buch.). *The Ecosphere (An International Biannual Journal of Environment and Biological Sciences).*1(1):12-24

diversity and prevalence of avian cestodes and reported high prevalence in summer where as low in monsoon season. Bhure et al., 2010 noticed high prevalence (51.78%) of *Rhabdochona sp.* from carp fish *Labeo rohita* in summer followed by winter and rainy season. High prevalence was recorded with high intensity and index of infection of *Silurotaenia raoii* in summer followed by winter whereas infection was lowest in monsoon (Bhure and Nanware, 2010). Bindu Sharma 2016 high prevalence of cestode parasites in fresh water fish, *Channa punctatus* from Meerut in summer season followed by winter and monsoon.

study on prevalence of gastrointestinal parasites in freshwater fish *Wallago attu* facilitates to device new ways and methodologies to follow the appropriate chemo-immunoprophylactic strategies as one of the control measures.

Yeshwant Mahavidyalaya Nanded for facilities provided.

4. Bhure, Dhanraj Balbhim, Nanware, Sanjay Shamrao and Sunnap, Namrata V. 2013. Status of Diversity of Cestode Parasites of Domestic Fowl (*Gallus Gallus Domesticus*) from Nanded District, Maharashtra State.

- Indian Journal of Applied Research*. Vol.3 (10): 28-31
5. **Bhure, Dhanraj Balbhim, Nanware, Sanjay Shamrao and Kasar C.R. 2014.** Studies on Prevalence of Cestodes Parasitizing *Gallus gallus domesticus*. *Environment Conservation Journal*. Vol. 15 (1&2) pp 171-175.
  6. **Bhure, Dhanraj Balbhim, Nanware, Sanjay Shamrao 2014.** Studies on Prevalence of Cestode Parasites of Freshwater Fish, *Channa punctatus*. *Journal of Entomology and Zoology Studies*. Vol. 2(4) pp 283-285.
  7. **Bindu Sharma (2016):** Studies on prevalence of cestode parasites in fresh water fish, *Channa punctatus* from Meerut (Uttarpradesh) India. *Journal of Applied and Natural Science* 8 (1): 485 – 488.
  8. **Dube S., Zindi P., Mbanga J. and Dube C. (2010):** A study of scavenging poultry gastrointestinal and ecto-parasites in rural areas of Matebeleland Province, Zimbabwe. Department of Applied Biology and Biochemistry, National University of Science and Technology, Bulawayo. *Int J Poultry Sci* 9(9):911–915
  9. **Katoch R., Yadav A., Godara R., Khajuria J.K., Borkataki S. and Sodhi S.S. (2012):** Prevalence and impact of gastrointestinal helminths on body weight gain in backyard chickens in subtropical and humid zone of Jammu, India. *J Parasit Dis*. 2012;36(1):49–52. doi: 10.1007/s12639-011-0090-z.
  10. **Jadhav, B.V. and Bhure, D.B. , (2006):** Population dynamics of Helminth parasites in freshwater fishes from Marathwada region (M. S.) India. *Flora and Fauna An International Research Journal*, 12(2): 143-148.
  11. **Kennedy, C.R. ,1976.** *Ecological aspects of parasitology*. North Holland publishing company Amsterdam 10x ford
  12. **Shah A.H., Anwar A., Khan M.N., Iqbal Z. and Qudoos A. (1999):** Comparative studies on the prevalence of cestode parasites in indigenous and exotic layers at Faisalabad. *Int J Agri Biol* 1(4):277–279.
  13. **Shahin, A.M., Lebdah, M.A., Abu-Elkheir, S. A. and Elmeligy, M.M.2011.** Prevalence of Chicken Cestodiasis in Egypt. *New York Science Journal*;4(9):21-29.