

Diversity of Braconid Parasitoids (Hymenoptera: Braconidae) of Horticultural Insect Pests from Kolhapur, Maharashtra

T. R. Patil¹and T. M. Chougale²

Research Student, Department of Zoology, Shivaji University Kolhapur¹

Assistant Professor and Head, Department of Zoology, Bhogawati Mahavidyalaya, Kurukali. (MS) India²

Abstract: Braconids (*Hymenoptera: Braconidae*) are the potential biocontrol agents of insect pests attacking economically important crop plants. Braconids are exclusively parasitic and are reported mainly on lepidopterous pests. These flies parasitize egg, larval, and pupal stage of the insect pests. Horticultural crops are attacked by lepidopterous pests causing severe damage to crops and thereby minimizes crop yield. The use of braconid parasitoids as pest control agents helps to reduce the pest population. The braconids are rearable in laboratories and reared parasitoids can be used in pest control programs. The correct identification, host preference and parasitic potential of the parasitoids plays important role in their utilization in pest control programs. The species reported belongs to genus *Cotesia*, *Apanteles*, *Bracon*, *Glyptapanteles*, *Chilonus*, *Dolichogenidea*, *Agathis*, *Meteorus* etc. and have been found parasitizing the insect pests of different horticultural plants. Total 35 species of braconid parasitoids were reported from the Kolhapur district, Maharashtra. The studies will help to add knowledge on number of braconid species found in study area and also explore them to use in biocontrol programs in the region.

Keywords: Survey, Braconids, Parasitoids, Horticultural Plants, Insect Pests, etc.

REFERENCES

- [1] Ayyar, T. V. R. 1920. On the insect parasites of some Indian crop pests. Proc. Ent. Mtgs. Pusa, 3, 931 – 936.
- [2] Ayyar, T. V. R. 1928. A contribution to our knowledge of the South in Bhoje, P. M. and Sathe, T. V. 2002a. On a new species of the genus Dolichogenidea Viereck (*Hymenoptera: Braconidae*) from India. Utter Pradesh J. Zool., 22 (1), 81-83.
- [3] Gupta Ankita and Lokhande Swapnil.(2013). Parasitoids of Hesperiidae From peninsular India with description of a new species of Dolichogenidea (*Hymenoptera : Braconidae*) on Caterpillar of *Borbo cinnara* (Wallace). Zootaxa 3701.2.8
- [4] Ingawale, D. M. and Sathe, T. V. 1994. Biology and biometry of immune stages of *Apantelesjayanagarensis* Bhatnagar (Hym. : Braconidae), an endoparasitoid of *Spilosoma obliqua* (Wlk.). J. Anim. Morph. & Physiol., 41, 13-17.
- [5] Jose Fernandez Trianna. et. al, (2020). Annotated and illustrated world checklist of Microgastrinae parasitoid wasps (*Hymenoptera, Braconidae*). Zoo keys 920: 10 -1089
- [6] Khan salman, Monsin Ikram, et. Al., (2017), Diversity measurements of Biological control agents *Trichogramma* (*Hymenoptera : Trichogrammatidae*) from North western India along with host range. Indian Forester. 143(7): 685-692.
- [7] Lal, K. B. 1942. Description of two new and redescription of a third species of *Apanteles* (Braconidae) from India. Indian J. Ent., 4, 163 – 166.
- [8] Momd, I. M. 1983. Studies on Indian parasitic hymenoptera with special reference to Braconidae from Maharashtra. Ph. D thesis. Pp. 1 – 184. 5.
- [9] Rao S. N. and Chalikwar, M. R. 1970c. Few new species of the Braconid genus *Protomicroplitis* Ashmead from India, a key to oriental species. Bull. Ent 11(2),102– 115.

- [10] Rao, S. N. 1961. Key to the Oriental species of Apanteles Foerster (Hymenoptera). Proc. Nat. Acad. Sci., India. H, 31, 32-46.
- [11] Rao, S. N. and Chalikwar, M. R 1970a. A new species of the genus Apanteles Foerster(Hymenoptera: Braconidae) from Marathwada. Bull. Ent., 11, 11 – 14.
- [12] Rao, S. N. and Chalikwar, M. R. 1970b. Studies on Indian parasitic Hymenopte (Braconidae) from Marathwada-I. Marathwada. Univ. J. Sci., 9, 107 – 112.
- [13] Ritu RanjanTaye., et. al, (2017). Diversity of Hymenopteran predators andparasitoids in Assam Agricultural University campus, Jorhat , Journal of entomology and Zoology studies.5(6) : 2420-2423.
- [14] Sathe, T. V. and Ingawale, D. M. 1995. Two new species of the genus Apanteles Foerster (Hymenoptera: Braconidae) from India. J. Bom. Nat. Hist. Soc., 92, 81-84.
- [15] Sathe T. V. and S. S. Patil (2016), Diversity and Bio-control Potential of the genus Cotesia Cameron (Hymenoptera: Braconidae) from Kolhapur régión India. Biolife Research article 4(2): 295-299
- [16] Sathe, T. V. 2004a. Biodiversity of Braconid pest biocontrol agents from Southern Maharashtra. Flora & Fauna, 10 (2), 149 – 150.
- [17] Sathe, T. V. 2004b. Biodiversity of Braconid pest biocontrol agents from Western Maharashtra. Bull. Bio. Sci., 2 (1), 73 – 75.
- [18] Sathe, T. V. and Chougale T. M. (2014). Hymenopterous biopesticides and their preliminary biocontrol potential from Western Maharashtra including Ghats. Biolife, 2 (4):1254-1261.
- [19] Sathe, T.V. 1988. The Biology of Cotesia orientalis Chalikwar & Nikam (Hymenoptera: Braconidae), a larval parasitoid of plume moth in India. J. Zool. Res., 1 (1), 23 - 37.
- [20] Sathe. T. V. 1991. The biology of Apanteles asavari Sathe (Braconidae), a larval parasitoid of Spodoptera litura (Fab.). Oikoassay, 8, 15-18.
- [21] Shaw M. R. and Huddleston T. (2012), Classification and Biology of Braconid wasps. Handbook for the identification of British Insects. Vol 7(11)
- [22] Zubair Ahmad., et. al, (2019). Two new species of braconid wasps (Hymenoptera, Braconidae) from India. Zoo keys 889: 23-35