



RESEARCH ARTICLE

# Biodiversity of tachinid flies (Diptera : Tachinidae) from Western Maharashtra

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## ARTICLE INFO

**Received** : 18.06.2012

**Revised** : 16.07.2012

**Accepted** : 15.09.2012

### Key Words :

Biodiversity, Tachinid flies,  
Biocontrol agents

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## ABSTRACT

Tachinid flies (Diptera : Tachidae) are potential biocontrol agents of insect pests. Therefore, biodiversity of Tachinid flies have been studied from Western Ghats and plain region of Western Maharashtra. In all, 20 species of Tachinids have been recorded attacking various lepidopterous pests viz., *Helicoverpa armigera* (Hubn.), *Spodoptera litura* Fab., *Spodoptera exigua* Fab., *Achea janata* (Linn.), *Tarache tobabilis* Walk., *Anomis* sp., *Chilo* spp., *Sesamia inferens*, silkworms, etc. with a very high per cent parasitism.

**How to view point the article** : Sathe, T.V. (2012). Biodiversity of tachinid flies (Diptera : Tachinidae) from Western Maharashtra. *Internat. J. Plant Protec.*, 5(2) : 368-370.

## INTRODUCTION

Tachinid flies (Diptera : Tachinidae) are potential biocontrol agents of lepidopterous pests. However some species attack useful insects like mulberry and wild silkworms. Therefore, biodiversity of tachinids have been studied from Western Maharashtra. Western Maharashtra is admixture of forest (Western Ghats) and agricultural crops (plane region). Insects cause severe damage to both forest and plane region crops and difficult to control with insecticides. Secondly insecticides lead serious problems such as pollution, health hazards, killing of beneficial organisms, pest resistance, pest resurgence, secondary pest out break etc. Hence, survey, conservation, protection and utilization of natural enemies against pest insects is the need of the day. Keeping in view all above facts the present work was carried out. Review of literature indicates that Thomson (1944), Patel (1980), Natrajan and Sundaramurthy (1990), Carl (1976), etc. worked on the diversity of tachinid parasitoids of insect pests.

## MATERIALS AND METHODS

During the survey of Ichneumonid parasitoids, during 2008 to 2012 under UGC Project No. 37/334/2009 (12), a huge number of lepidopterous caterpillars were collected. Along

with the Ichneumonids, some tachinids have also been found emerged from pest caterpillars. Later, the tachinids have been identified by consulting appropriate literature (Thompson, 1944; Crosskey, 1976). The survey of parasitoids was conducted at different study spots in district Kolhapur, Satara and Pune at 15 days interval by adopting 1 man 1 hr collection of caterpillars from both forest and agro-ecosystems including Western Ghats. The collected caterpillars were reared on the respective food plants in the laboratory (25±1°C, 70-75% RH and 12 hr photoperiod) for screening tachinid parasitoids.

## RESULTS AND DISCUSSION

Results recorded in Table 1 indicate that in Western Maharashtra, tachinids attacked both pests and useful insects such as silkworms. Thus, tachinids acts as both biocontrol agent for agricultural and forest insect pests and pests for various silk worm species. The highest per cent parasitism (64%) was noted on mulberry silk worm *Bombyx mori* L. by uzifly *Exorista bombycis* (Louis) and lowest (1.5%) by *Podomyia setosa* Dol on *Parnara mathias* Fab. from forest ecosystem.

*E. bombycis*, *E. sorbillans*, *B. zebina* and *C. pavidus* were dominant on silkworm species. However, on pest insects,