



STUDY ON THE ABUNDANCE OF SOME BENEFICIAL INSECTS OF FOREST ECOSYSTEM IN MADHYA PRADESH

PAWAN KUMAR*, TAMANNA SINGH THAKUR, NEHA SHARMA AND DEEPIKA THAKUR

Himalayan Forest Research Institute, Shimla, Himachal Pradesh, India

*Corresponding author email:kumarphfri@gmail.com

ABSTRACT: Natural ecosystem services provided by beneficial insects include biological pest control, soil formation, nutrient cycling, and plant pollination. One of the key biological factors affecting the productivity of forests is insects. As natural adversaries of pest species, insects play a significant role in the ecosystem and are often useful in pest management. Despite their significance in biological control, as pollinators, and as bioindicators, many beneficial insects (honey bees, tasar silkworms, lac insects, ichneumon parasites, predators-ladybird beetles, bugs, odonates, red ants, etc.) in tropical forest ecosystems are understudied. The current study conducted a thorough investigation of the beneficial insects in Madhya Pradesh's tropical forest ecosystem. A total of 10 economically important species of insects were found in the forest ecosystem of Madhya Pradesh.

Keywords: Beneficial insects, bioindicators, ecosystem, management, pollination, tropical forest.

Citation: Kumar P, Thakur TS, Sharma N, Thakur D (2022) Study on the abundance of some beneficial insects of forest ecosystem in Madhya Pradesh. Indian J Trop Biodiv 30(1&2):79-83.

INTRODUCTION

In majority of cases, insects from forests are overlooked when talking about the most significant organisms. Regardless of the type of food chain, they are the key link. Additionally, plant breeding, soil fertility, biodiversity, and the health of the forest is greatly influenced by insects. In forests, insects play a variety of roles as decomposers, pollinators, herbivores, carnivores, and food sources for other organisms (Mocrea *et al.*, 2015). Many insect taxa can be considered as bioindicators since they are conspicuous and susceptible to environmental changes (Kati *et al.*, 2004; Choi, 2006). For instance, butterfly population dynamics have been considered as markers of species richness for pollinators generally, of the structural and floristic diversity of habitats, as indicators of climatic change and other ecological parameters, and as indicators of landscape distinctiveness (Pyle, 1976; Heath, 1981; Kremen, 1994; Pe'er and Settele, 2008). Due to their sensitivity to habitat change and the low cost of carabid studies, ground beetles are also frequently used as bioindicators for changes in environmental conditions (Rainio and Niemelä, 2003). Beginning with the importation and mass rearing of *Trichogramma*

minutum (Riley) to control the sugarcane borer *Diatraea saccharalis* (Fabricius) (Lepidoptera: Pyralidae), research with *Trichogramma* species were conducted in Brazil (Pratissoli, 1986). This group of parasitoids offers potential pest-control options for numerous agricultural and forest crops (Parra and Zucchi, 1997). By using light traps, Meshram *et al.* (1990) investigated the seasonal abundance and population dynamics of pests in forest nurseries. The tasar silkworm, *Antheraea paphia* (L.), has significant economic value in modern India, and the Indian population values its silk highly on a cultural level. Many people in India depend on tasar sericulture for their livelihood and job, and these items are always handwoven (Travis and Peigler, 2016). As a result, the Central Silk Board, an Indian federal organisation, actively encourages the production and commercialization of this kind of wild silk, also known as tassar and tussar (Jolly *et al.*, 1974; Sinha *et al.*, 2006; Kavane and Sathe, 2011; Zethner *et al.*, 2012).

Numerous in-depth investigations have been conducted on the distribution, biology, ecology, life history, and population dynamics of the pests *H. puer* and *E. machaeralis* in various ecozones of India (Beeson, 1941; Mathur, 1960; Nair, 1988; Tewari,