

# Diversity of Insect Pest on Various Crops from Sakoli Tahshil, Bhandara, Maharashtra

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**Abstract:-** The field survey in Sakoli Tahshil, Bhandara District, Maharashtra State, during 2023-24 discovered 41 insect pests from diverse crops. Lepidoptera was the dominant order, with 18 species, followed by Hemiptera, Orthoptera, Coleoptera, and Thysanoptera, which had 17, 2, and 1 species, respectively. Hemipteran and Lepidopteran insect pests cause significant harm to all crops. The current study provides valuable information on many insect pests and their associated insects in agriculture fields.

**Keywords:-** Insect Pests, Diversity, Hemiptera, Lepidoptera, Sakoli.

## I. INTRODUCTION

Numerous insects spread different infections that infect crops and vegetables and cause diseases. A good agricultural area is necessary for the growth of several insect species, which feed on roots, stems, leaves, flowers, and seeds. Insect larvae are voracious eaters that seriously harm agricultural crops.

Greatest diversity of rice pests was seen to be in India and China because of their huge land area. Plant hoppers (Brown plant hopper and white-backed plant hopper) and leafhoppers (green leafhopper, zigzag leafhopper) were found to be widely distributed in Paddy fields of major rice producers (Ane and Hussain, 2015).

Climatic conditions are also important to increase the pest population. Some time it's highly suitable for insect pest and it increase in high diversity and damage the crop plant in high range. For its own defenses, a farm field growing a variety of plants tends to attract fewer insect pests than a field growing just one type of crop. Since long, scientists and farmers are aware of vulnerability of monoculture fields to insect infestations but they are clueless about strategy to curb this menace. Recent study suggests the role of nutritional need of insect in it. Single type of plants provides appropriate nutrition to insect helping them to proliferate (Wetzel, 2016).

Insect pest could also be suppressed by growing flowering plants around agricultural fields which will attract the insect pest which would otherwise target crop and vegetables (Cloyd, 2020). Crop varieties with different nutrient content in their leaf, stem, flower and fruit could also help to curb the insect infestation (William Wetzel, 2016).

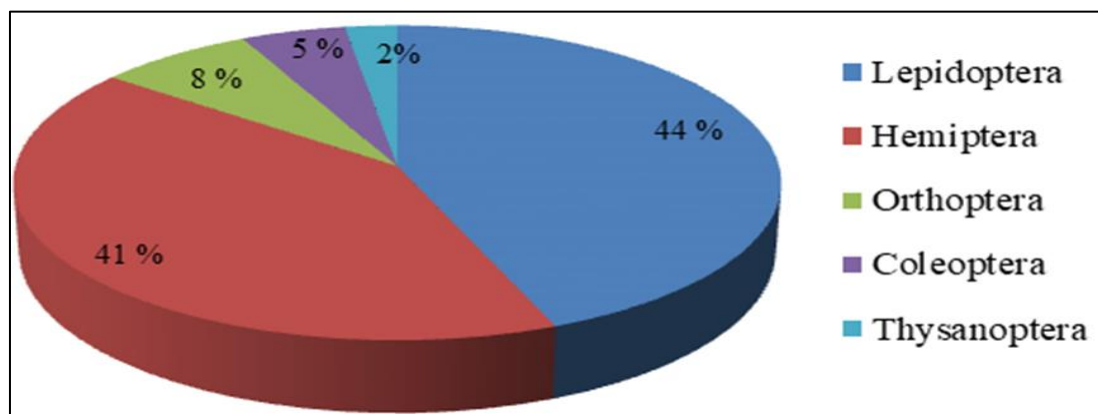
## II. MATERIALS AND METHODS

The survey and collection of general insect pests were made throughout the year 2023-2024. From agriculture areas of Sakoli in Bhandara district. Study area is located in the Bhandara, Maharashtra, India; its geographical coordinates are 21° 5' 0" North, 79° 59' 0" East. This Tahshil covered with large biodiversity, it is famous for pond ecosystem and biodiversity zone. Vegetables and various agricultural crops are present in the research area. Two different approaches were used to capture insect pests: the hand-picking method and the sweep net method. Aphids, mealy bugs, and larvae were among the small and medium-sized insect pests that were manually gathered, while grasshoppers and other larger pests were caught using an insect net. The observations were made with the aid of binocular and Digital camera Nikon 5700D; lense 70-300mm was used for photography of insect. The agricultural pests were identified with the help of standard literature (Jonathan and Kulkarni, 1986; Karungi et al., 2008; Nair et al., 2012).

## III. RESULT AND DISCUSSION

For the current study, 41 insect pest species were gathered from crop fields in the Bhandara district. They are classified under the orders Hemiptera, Coleoptera, Lepidoptera, Orthoptera, and Thysanoptera. The order Lepidoptera was prominent, with 18 species, followed by Hemiptera, Orthoptera, Coleoptera, and Thysanoptera, each with 17, 2, and 1 species (Table 1). The Hemiptera order includes 17 insect species, including the whitefly, stink bug, aphid, jassid, and mealy bug. They inflict significant harm to host plants like brinjal, sugarcane, rice, cowpea, and tomato.

Mango trees are harmed by pests known as coleoptera, which are insects that live in forests. The gram podar, green pea moth, and cabbage looper larvae, which make of the third order Lepidoptera, are responsible for harming red gram, green peas, and cabbage. The remaining orders—Phasmatodea, Thysanoptera, Orthoptera, Isoptera, and Hymenoptera—are to blame for the significant harm done to tomatoes, rice, and brinjal. Moreover, several host plant species were shown to be home to termite and ant species. The principal crop pests found in the different crop fields of Maharashtra State's Sakoli Tahshil, Bhandar District are listed in this study.



Graph 1 Distribution of Insect Pest (Percentage Wise)

Table 1 List of Insect Pests Recorded on Various Crops in Bhandara District, Maharashtra.

Scientific Name	Common Name	Family	Order	Crop
<i>Gryllotalpa fossor</i>	Mole cricket	Gryllotalpidae	Orthoptera	Paddy
<i>Schistocerca gregaria</i>	Desert locust	Acrididae		Green vegetation
<i>Locusta migratoria</i>	Migratory locust			Green vegetation
<i>Caliothrips indicus</i>	Thrips	Thripidae	Thysanoptera	Wheat
<i>Curculio nucum</i>	Hazelnut weevil	Curculionidae	Coleoptera	Nuts
<i>Epilachninae mulsant</i>	Mexican bean beetle	Coccinellidae		ladyfinger
<i>Amrasca biguttula</i>	Cotton Jassid	Cicadellidae	Hemiptera	Cotton
<i>Nephotettix nigropictus</i>	Green rice leafhopper			Paddy
<i>Aphis gossypii</i>	Cotton aphids	Aphididae		Cotton
<i>Myzus persicae</i>	Green peach aphids			Cotton
<i>Aphis crassivora</i>	Cow pea aphids			Chick pea
<i>Rhopalosiphum maidis</i>	Maize aphid			wheat
<i>Myzus persicae</i>	Green peach aphids			Mustard, wheat
<i>Dysdercus cingulatus</i>	Red cotton bug	Pyrrhocoridae		Cotton
<i>Bemisia tabaci</i>	Whitefly	Aleyrodidae		Cotton
<i>Pyrilla perpusilla</i>	Sugarcane leaf hopper	Lophopidae		Sugarcane, Maize
<i>Phenacoccus solenopsis</i>	Mealy bug	Pseudococcidae		Cotton
<i>Lygaeus militaris</i>	Plant bug	Lygaeidae		Cotton
<i>Lygaeus hospes</i>	Lygaeid bug			Cotton
<i>Nezara gramineae</i>	Green plant bug	Pentatomidae		Paddy
<i>Bagrada picta</i>	Bagrada bug/ Colourful bug	Psychidae		cabbage
<i>Anoplocnemis phasiana</i>	Coreid bug	Coreidae		Chick pea
<i>Clavigralla gibbosa</i>	Pod sucking bug			Chick pea
<i>Scirpophaga auriflua</i>	Sugarcane top shoot borer	Pyalidae		Sugarcane
<i>Ostrinia nubilalis</i>	European corn borer			Corn
<i>Manduca quinquemaculata</i>	Tomato hornworm	Sphingidae	Tomato	
<i>Papilio polytes</i>	common mormon	Papilionidae	citrus	
<i>Papilio demoleus</i>	citrus butterfly		citrus	
<i>Pieris brassicae</i>	cabbage butterfly	Pieridae	vegetable	
<i>Operophtera brumata</i>	Winter moth	Geometridae	Vegetable	
<i>Lymantria dispar</i>	Gypsy moth	Lymantriidae	Vegetable	
<i>Pectinophora gossypiella</i>	Pink bollworm	Gelechiidae	Cotton	
<i>Nyctemera annulata</i>	Magpie moth	Arctiidae	Beans	
<i>Hyphantria lunea</i>	Web worm		vegetables	
<i>Melanitis leda</i>	Common Evening Brown	Nymphalidae	Paddy	
<i>Earias insulana</i>	Spiny bollworm	Noctuidae	Cotton	
<i>Helicoverpa armigera</i>	American bollworm		Cotton	
<i>Spodoptera littoralis</i>	African Cotton Leaf worm		Cotton	
<i>Pericallia ricini</i>	Darth Maul Moth		Maize	
<i>Spodoptera frugiperda</i>	Armyworm		vegetables	
<i>Trichoplusia ni.</i>	Cabbage looper		vegetables	

#### IV. CONCLUSION

Diversity indices of insect pest differed in every year. This study revealed that the statistical data of insect pest arise during the year of 2023-2024. It is also helpful for data verification of previous insect pest and future insect pest. Numerous tactics are being developed to combat these pests, which cause significant financial losses to rice crops, in order to maintain their normal level.

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