

# Study on the incidence of insect pest on some selected agriculture crops grown in Karanja (Ghadge), Tahsil of Wardha district of Maharashtra, India

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## Abstract

Field survey was conducted at some selected farm of Karanja (Ghadge) region where some selected crops viz Cotton, soybean, Castor, Gram, Wheat, Maize, and Bean crops (Lablab and Cowpeas) were grown during Kharif and Rabi season in order to study the incidences of insect pests on these crops. The observation of field study revealed incidence of total 20 insect pests belongs to 4 orders and 12 families. Out of 20 insects, 16 insects were recorded as a pest and 4 insects were recorded as predatory insects. Maximum 9 insects were recorded from order Lepidoptera with maximum 4 insects from family Erebidiae. More number of insects were recorded on castor and on bean crop (Lablab beans). The incidence of Red cotton bug *Dysdercus cingulatus* was found to be the most common insect pest on most of the crop.

**Keywords:** Kharif, rabi, insect-pests, crop.

## Introduction

India is an agricultural country. Agriculture and its allied activities act as an important source of livelihood for 80% population of rural India. According to 2011 Agricultural Census of India about 61.5% of the 1300 million Indian populations are rural and dependent on agriculture. Every year agriculture field is facing a very serious problem of insect pests. The insect's pests are damaging various agriculture crops and causing great loses. In India wheat is attacked by

number of insect pests viz Termites, Shoot fly, Brown white mite, Armyworm and Aphid [1]. Deshmukh and Ade [2] have recorded 8 species of cotton pests in Akot region of District Akola of Maharashtra. In India the agriculture field is suffering an annual loss of about 8, 63,884 Million due to insect pests Dhaliwal *et al* [3]. Farook *et al* [4] reported that wheat crops are heavily attacked by Armyworm, Cereal leaf beetle, wheat aphid, Grasshopper, White grubs, Ghujia weevil and termites. In Maharashtra Gaikwad and Bilapate [5] also recorded reduction in 36.36% in castor leaves and 19.58% in seed yield in unprotected plants as compared to protected plants with insecticides. Gaurav Singh and Maha Singh Jaglan [6] studied the population dynamics of different insect pests of Maize viz maize leaf folder, maize aphid, maize cob borer, pollen feeding beetle during Kharif season. Kailash Chandra and Sandeep Kushwaha [7] recorded 7 insect species belonging to 6 different families of order Hemiptera infecting lablab plantations in different localities of district Jabalpur in Madhya Pradesh. Mundhe [8] have identified 19 insect species attacking soybean in Marathwada region in Maharashtra. Pandey *et al* [9] recorded 66%-100% losses in yield in cowpea due to insect pest. Siddiqui and Marwaha [10] recorded that maize stem borer, pink stem borer, armyworm, gram pod borer and maize aphid causes economic yield losses to maize crop during different seasons all over the country.

Warad and Kalleshwaraswamy [11] have study the biology of Bihar hairy caterpillar, *Spilarctia obliqua* (Walker) (Erebidae: Lepidoptera) on field bean *Lablab purpureus* L. Yadav *et al* [12] also studied the population dynamics of major insect pests of cowpea and reported the incidences of various pest such as aphid, jassid, white fly, cowpea pod borer related to various weather parameters.

Many studies have been carried out in various regions of Vidarbha region of Maharashtra on various crops but not a specific study has been carried out on major crops including bean crops grown in Karanja (Ghadge) region. Therefore, in order to study the population dynamics of insect pests on some major crops including bean crops grown in some selected farms of Karanja

(Ghadge) a field survey was conducted during Kharif and Rabi season.

## Methodology

A field survey of some selected farm of Karanja (Ghadge) was made during Kharif and Rabi season of year 2019-2020. Field survey was conducted on selected farm where crop viz cotton, soybean, castor, gram, maize, wheat and bean crops (Lablab and Cowpeas) was grown. The insect pests observed on the given crop during the survey were noted and photograph was captured using 16-megapixel camera. The insect pests observed were identified with the help of research papers of various researchers and internet sources.

## Results and Discussions

The observation of field study revealed incidence of total 20 insect pests belongs to 4 orders and 12 families. Out of 20 insects, 16 insects were recorded as an insect pest and 4 insects were recorded as predatory insects. Maximum 9 insects were recorded from order Lepidoptera with maximum 4 insects from family Erebidae. More number of insects were recorded on castor and on bean crop (Lablab beans) (Table.1). In Maharashtra Gaikwad and Bilapate [5] also recorded reduction in 36.36% in castor leaves and 19.58% in seed yield in unprotected plants as compared to protected plants with insecticides. Kailash Chandra and Sandeep Kushwaha [7] recorded 7 insect species belonging to 6 different families of order Hemiptera infecting lablab plantations in different localities of district Jabalpur in Madhya Pradesh.

During the field survey 4 types of predatory insects were recorded from different crop, Asian Lady Beetle *Harmonia axyridis* was recorded from castor crop, Blister beetle *Mylabris phalerata* was recorded from Lablab bean crop and two predatory insects Yellow Spotless Ladybug *Illeis koebelei* and Ashy Gray Lady Beetle *Olla v-nigrum* was recorded from cowpea crop. In the field survey study, it was found that Red Cotton Bug

**Table.1 List of Incidence of insect pests on major crop and bean crop grown in Karanja (Ghadge), tahsil of Wardha District**

Sr. No	Common Name	Scientific Name	Family	Order
<b>Gram Crop</b>				
1.	Gram pod Borer	<i>Helicoverpa armigera</i>	Noctuidae	Lepidoptera
2.	Fall Armyworm	<i>Spodoptera frugiperda</i>	Noctuidae	Lepidoptera
<b>Wheat Crop</b>				
1.	Green Stink Bug	<i>Nezara viridula</i>	Pentatomidae	Hemiptera
2.	Red Cotton Bug	<i>Dysdercus cingulatus</i>	Pyrrhocoridae	Hemiptera
3.	Grasshopper	<i>Tyrotropidius varcorini</i>	Acrididae	Orthoptera
<b>Cotton Crop</b>				
1.	Red Cotton Bug	<i>Dysdercus cingulatus</i>	Pyrrhocoridae	Hemiptera
2.	Shield Bug/Jewel Bug	<i>Chrysocoris</i> Sp.	Scutelleridae	Hemiptera
<b>Castor Crop</b>				
1.	Tussock Moth Caterpillar	<i>Oroasca</i> Sp.	Erebidae	Lepidoptera
2.	Castor Semilooper	<i>Achaea janata</i>	Erebidae	Lepidoptera
3.	Bihar Hairy Caterpillar	<i>Spilarctia obliqua</i>	Erebidae	Lepidoptera
4.	Asian Lady Beetle (Predator Insect)	<i>Harmonia axyridis</i>	Coccinellidae	Coleoptera
5.	Castor Capsule Borer	<i>Conogethes punctiferalis</i>	Crambidae	Lepidoptera
<b>Maize Crop</b>				
1.	Spotted Stem Borer	<i>Chilo partellus</i>	Crambidae	Lepidoptera
2.	Red Cotton Bug	<i>Dysdercus cingulatus</i>	Pyrrhocoridae	Hemiptera
<b>Bean Crop (Lablab beans)</b>				
1.	Bihar Hairy Caterpillar	<i>Spilarctia obliqua</i>	Erebidae	Lepidoptera
2.	Red Cotton Bug	<i>Dysdercus cingulatus</i>	Pyrrhocoridae	Hemiptera
3.	Aphids	<i>Aphis</i> sp.	Aphididae	Hemiptera
4.	Blister Beetle (Predator Insect)	<i>Mylabris phalerata</i>	Meloidae	Coleoptera
<b>Bean Crop (Cowpeas)</b>				
1.	Jassids/Leaf Hoppers	<i>Empoasca fabae</i>	Cicadellidae	Hemiptera
2.	Yellow Spotless Ladybug (Predator Insect)	<i>Illeis koebelei</i>	Coccinellidae	Coleoptera
3.	Ashy Gray Lady Beetle (Predator Insect)	<i>Olla v-nigrum</i>	Coccinellidae	Coleoptera
<b>Soyabean Crop</b>				
1.	Asian Gray Weevil	<i>Myloccerus</i> Sp.	Curculionidae	Coleoptera
2.	Crimson Speckled moth Caterpillar	<i>Utethesia</i> Sp.	Erebidae	Lepidoptera
3.	Soyabean Podworm/Corn Earworm	<i>Helicoverpa zea</i>	Noctuidae	Lepidoptera



Gram Pod Borer (*Helicoverpa armigera*)



Fall Armyworm (*Spodoptera frugiperda*)



Green Stink Bug (*Nezara viridula*)



Red Cotton Bug (*Dysdercus cingulatus*)



Grasshopper (*Tylotropidius varicorini*)



Red Cotton Bug (*Dysdercus cingulatus*)



Shield Bug (*Chrysocoris* Sp.)



Tussock Moth Caterpillar (*Orvasca* Sp.)



Castor Semilooper (*Achaea janata*)



Hairy Caterpillar (*Spilarctia obliqua*)



Asian Lady beetle (*Harmonia axyridis*)



Castor Capsule borer (*Conogethes punctiferalis*)



Spotted Stem Borer (*Chilo partellus*)



Red Cotton Bug (*Dysdercus cingulatus*)



Aphid (*Aphis* Sp.)



Blister Beetle (*Mylabris phalerata*)



Bihar Hairy Caterpillar (*Spilarctia obliqua*)



Red Cotton Bug (*Dysdercus cingulatus*)



Jassids (*Empoasca fabae*)



Yellow Spotless Ladybird (*Illeis koebelei*)



Ashy Gray Lady beetle larva (*Olla v-nigrum*)



Asian Gray Weevil (*Myllocerus* Sp.)



Utetheisa Sp. Moth caterpillar



Soyabean podworm (*Helicoverpa zea*)

*Dysdercus cingulatus* was recorded as common pest on 4 (Wheat, Cotton, Maize and Bean crop) types of crops. The field survey study has given data of incidences of various types of insect pests on major crops including bean crops grown in Karanja (Ghadge) of Wardha District of Maharashtra during Kharif and Rabi seasons.

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