A preliminary study on some of the insect fauna during rainy season in the agricultural field of Karanja (Ghadge), District Wardha (Maharashtra)

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DOI: https://doi.org/10.22271/j.eno.2022.v10.i1d.8953

Abstract
A survey of agriculture field of Karanja (Ghadge), District Wardha during rainy season were undertaken to study the insect fauna. During the study about 44 species of insect have been identified belonging to 9 orders and 28 families. The order Lepidoptera was found to be the dominant order with 18 species followed by Coleoptera and Hemiptera with 9 species each, Orthoptera with 3 species and Hymenoptera, Mantodea, Araneae Blattodea and Diptera with one species each. The insects recorded were agricultural pest and predatory insect.

Keywords: Insect pest, Karanja (Ghadge), diversity, rainy season

Introduction
India is an agriculture country. About 70% of rural population depends on agriculture field. There are various types of agricultural crop grown during rainy season in different area of Maharashtra. During rainy season there occurs incidence of various insect pests on different types of agricultural crops. These insect pests cause serious damage to the agriculture crops resulting in great loss to the production. Worldwide more than 10,000 species of insect’s pest found to be damaged to the different types of food plants (Dhaliwal et al., (2007) [3]). Various workers have done their study related to diversity of insect’s pest in various parts of Maharashtra. Mahajan D M and Patil R D (2014) [5] have studied Plant and insect species diversity from Western Satpuda and reported 443 insect species belonging to 102 families and 19 orders. Aland S R et al., (2010) [1] have recorded 82 species belonging to 47 genera and 17 families of order hymenoptera from Amba reserved forest of Kolhapur, Western ghats. Dadmal S M and Khadakkar S (2014) [2] have recorded 19 species of scarab beetles’ diversity belonging to 10 genera from Akola. Nikam K N and More S V (2016) [6] recorded 44 species of insects belonging to 9 orders from Jangamhatti area, Chandgad, district, Kolhapur. Salunke R N and More S V (2017) [8] recorded 17 insect pests from agriculture and forest areas of Chinedag tahsil, district Kolhapur. Jagdale P and Magdum S (2017) [4] have recorded Dung beetles of 24 types belonging to 14 genera and 3 families from Nashik. Wankhade V et al., (2014) [9] have studied diversity of coleopteran insects from Sawanga-Vithoba Lake region, District Amravati and recorded 27 species of beetle belonging to 7 families. Vairale A B (2017) [9] have studied diversity of spiders from agro-ecosystem of tahsil Sangrampur, district Buddhna and reported 143 species of spiders belonging to 63 genera and 11 families. Rajgurav G D et al., (2018) [7] have studied the spider diversity of Ambegaon tahsil, district Pune and reported 58 species of spider belonging to 38 genera and 5 families. However, no records available on the insect fauna diversity of Karanja (Ghadge), tahsil of district Wardha, Maharashtra. Therefore, the aim of the present study is to prepare a list of occurrences of insect pest during rainy season in the given area.

Material and Methods
The present study was carried out in Karanja (Ghadge) located in district Wardha of Nagpur division of Vidarbha region of Maharashtra.
A survey of agriculture field of Karanja (Ghadge) was carried out from July 2021- September 2021 to study the insect fauna during rainy season in the agriculture field of the given area. The field survey includes various agriculture crops and plants. The insect pest observed during the field survey was captured in the camera. The insect pest recorded were identified with the help of various research paper, literature available and internet sources. The insect pest identified was arranged according to their order and family.

**Result and Discussion**

A field survey during rainy season from month July 2021 to September 2021 records 44 species of insect belonging to 9 orders and 28 families. The order Lepidoptera was found to be the dominant order with 18 species with maximum 8 species recorded from family Erebidae and Pentatomidae from this order respectively. From order Orthoptera 3 species were recorded with maximum 2 species from family Acrididae and the least only one species was recorded each from order Hymenoptera, Mantodea, Araneae, Blattodea and Diptera. From the present study it is confirmed that the order Lepidoptera is found to be dominant followed by Coleoptera, Hemiptera, Orthoptera while very least insects is recorded from Order Hymenoptera, Mantodea, Araneae, Blattodea and Diptera. The insects recorded in this study of which some are agricultural pest and some are predatory insects. This preliminary study on the insect pest will give the record of occurrence and dominance of various agriculture and predatory insect during rainy season in the agriculture field of Karanja (Ghadge).

**Acknowledgement**

The author is thankful to Ku. Jyotsna Chopade, Ku. Rakhi Deshmukh and Ku. Ankita Meshram, BSc Students for their valuable help during the field survey.

**Table 1:** List of Insects recorded & identified during rainy season in the study area

| Sr. No | Common Name | Scientific Name | Family | Order |
|-------|-------------|----------------|--------|-------|
| 1.    | Castor Semilooper | Achaea janata (Linnaeus, 1758) | Erebidae | Lepidoptera |
| 2.    | Wasp Moth | Amata passalis (Fabricius, 1781) | Erebidae | Lepidoptera |
| 3.    | Tussock Moth | Euproctis leithiana (Moore, 1879) | Erebidae | Lepidoptera |
| 4.    | Fall Webworm | Hyphantria cunea (Drury, 1773) | Erebidae | Lepidoptera |
| 5.    | Rajendra vittata (Moore, 1879) | Erebidae | Lepidoptera |
| 6. (a) | Common hairy caterpillar | Spilarctia obliqua (Walker, 1855) | Erebidae | Lepidoptera |
| 6. (b) | Bihari Hairy caterpillar | Spilosoma obliqua (Walker, 1855) | Erebidae | Lepidoptera |
| 7.    | Heliotrope Moth | Utheheisa pulchelloides (Hampson, 1907) | Erebidae | Lepidoptera |
| 8.    | Corn Earworm | Helicoverpa zea (Boddie, 1850) | Noctuidae | Lepidoptera |
| 9.    | Tobacco Catworm | Spodoptera littoralis (Fabricius, 1775) | Noctuidae | Lepidoptera |
| 10.   | Cabbagewhopper | Trichoplusia ni (Hübner, 1800-1803) | Noctuidae | Lepidoptera |
| 11.   | Eggplant fruit borer or brinjal fruit borer | Leucinodes orbonalis (Guenee, 1854) | Crambidae | Lepidoptera |
| 12.   | Unknown | Parotis marginata (Hampson, 1893) | Crambidae | Lepidoptera |
| 13.   | Oleander Hawk Moth caterpillar | Drymis nervis (Linnaeus, 1758) | Sphingidae | Lepidoptera |
| 14.   | Tersa Sphinx moth caterpillar | Xylophanes tersa (Linnaeus, 1771) | Sphingidae | Lepidoptera |
| 15.   | Tawny Coster caterpillar | Acracea terpsicore (Linnaeus, 1758) | Nymphalidae | Lepidoptera |
| 16.   | Common Mormon butterfly caterpillar | Papilio polyxenes (Linnaeus, 1758) | Papilionidae | Lepidoptera |
| 17.   | Bagworm | Psycha sp. | Psychidae | Lepidoptera |
| 18.   | Unknown | Eupterotidae sp. | Eupterotidae | Lepidoptera |
| 19.   | Blister Beetle | Epicauta sp.1 | Meloidae | Coleoptera |
| 20.   | Blister Beetle | Epicauta sp.2 | Meloidae | Coleoptera |
| 21. (a) | Blister Beetle | Hyleus polymorphus (Pallas, 1771) | Meloidae | Coleoptera |
| 21. (b) | Blister Beetle | Hyleus polymorphus (Pallas, 1771) | Meloidae | Coleoptera |
| 22.   | Blister Beetle | Nemognatha sp. | Meloidae | Coleoptera |
| 23.   | Flower Chafer Beetle | Gametis coelestis (Fabricius, 1775) | Scarabaeidae | Coleoptera |
| 24.   | Metallic Wood Boring Beetle | Enchroma gigantea (Linnaeus, 1758) | Buprestidae | Coleoptera |
| 25.   | White or Grey Weevil | Myllocerus sp. | Curculionidae | Coleoptera |
| 26.   | Lady bird beetle | Cheilomenes sexmaculata (Fabricius, 1781) | Coccinellidae | Coleoptera |
| 27.   | Short-horned leaf beetle | Clytra sp. | Chrysomelidae | Coleoptera |
| 28.   | Stink Bug | Eriseris acuminate (Dallas, 1851) | Pentatomidae | Hemiptera |
| 29.   | Predatory stink Bug | Andrallus spinindens (Fabricius, 1787) | Pentatomidae | Hemiptera |
| 30.   | Brown marmorated stink bug | Halyomorpha halys (Stål, 1855) | Pentatomidae | Hemiptera |
| 31.   | Green Stink Bug | Nezara viridula (Linnaeus, 1758) | Pentatomidae | Hemiptera |
| 32.   | White Flated Planthopper | Flatomorinus sp. | Flatidae | Hemiptera |
| 33.   | Leaf footed bug | Acantocephala sp. | Coreidae | Hemiptera |
| 34.   | Citrus mealybug | Planococcus citri (Risso, 1813) | Pseudococcidae | Hemiptera |
| 35.   | Sugarcane Spittlebug | Callitetis versicolor (Fabricius, 1794) | Cercopidae | Hemiptera |
| 36.   | The Bean Bug | Riptorius pedestris (Fabricius, 1775) | Alydidae | Hemiptera |
| 37. (a) | Hooded Grasshopper (Brown) | Teratodes monticollis (Gray,1832) | Acrididae | Orthoptera |
| 37. (b) | Hooded Grasshopper (Green) | Teratodes monticollis (Gray,1832) | Acrididae | Orthoptera |
| 38.   | Mole Cricket | Gryllotalpa sp. | Gryllotalpidae | Orthoptera |
| 39.   | Bush Cricket | Hexcentrus sp. | Tetrigidae | Orthoptera |
| 40.   | Mustard Sawfly | Athalia ligens (Klug, 1813) | Tenthredinidae | Hymenoptera |
| 41.   | Stick mantis | Schizoprpha bicolor (Linnaeus, 1758) | Eremaphilidae | Mantodea |
| 42.   | Garden Spider | Argiope sp. | Araneidae | Araneae |
| 43.   | Forest Cockroach | Ectobius sp. | Ectobiidae | Blattodea |
| 44.   | Lovebug | Ptecia sp. | Bibionidae | Diptera |
Plate 1

1. Achaea janata
2. Amata passalis
3. Euproctis leithiana
4. Hyphantria cunea

5. Rajendra vittata
6. (a) Spilarctia obliqa
6. (b) Spilosoma obliqua
7. Utetheisa pulchelloides

8. Helicoverpa zeae
9. Spodoptera litura
10. Trichoplusia ni
11. Leucinodes orbonalis

12. Parotis marginata
13. Daphnis nerii
14. Xylophanes tersa
15. *Acraea terpsicore*

16. *Papilio polytes*

17. *Psyche* sp.

18. *Eupterote* sp.

19. *Epicauta* sp. 1

20. *Epicauta* sp. 2

21. (a) *Hycleus polymorphus*

21. (b) *Hycleus polymorphus*

22. *Nemognatha* sp.

23. *Gametis versicolor*

24. *Euchroma gigantea*

25. *Myllocerus* sp.

26. *Cheilomenes sexmaculata*

27. *Clytra* sp.

28. *Erthesina acuminata*
29. *Andrallus spinidens*  
30. *Halyomorpha halys*  
31. *Nezara viridula*  
32. *Flatormensis sp.*

33. *Acanthocephala sp.*  
34. *Planococcus citri*  
35. *Callitettix versicolor*  
36. *Riptortus pedestris*  

37(a) *Teratodes monticollis*  
37(b) *Teratodes monticollis*  
38. *Gryllotalpa sp.*  
39. *Hexacentrus sp.*

40. *Athalia lugens*  
41. *Schizocephala bicornis*  
42. *Argiope sp.*  
43. *Ectobius sp.*  
44. *Plecia sp.*

**References**

1. Aland SR, Mamlayya AB, Gaikwad SM Bharmal DL, Bhawane GP. Diversity of insects with special reference to order Hymenoptera in Amba reserved forest of Kolhapur district, Western ghats, Maharashtra, India. Biological Forum. 2010;2(2):59-64.

2. Dadmal SM, Khadakkar S. Insect faunal diversity collected through light trap at Akola vicinity of Maharashtra with reference to Scarabaeidae of Coleoptera. Journal of Entomology and Zoology Studies.
3. Dhaliwal GS, Dhawan AK, Singh R. Biodiversity and ecological agriculture: Issues and perspectives. Indian Journal of Ecology. 2007;34(2):100-109.

4. Jagdale P, Magdum S. Diversity and abundance of Coleopteran insects belonging to family Scarabaeidae, Geotrupidae, Hybosoridae from Nashik, Maharashtra, India. International Journal of Engineering Development and Research. 2017;5(4):413-420.

5. Mahajan DM, Patil RD. Plant and insect species diversity: A case study of Western Satpuda (Maharashtra). Indian Forester. 2014;140(3):312-316.

6. Nikam KN, More SV. Diversity of Insects from Jangamhatti area, Chandgad, Kolhapur district of Maharashtra. Biolife. 2016;4(1):209-212.

7. Rajgurav GD, Khandagle AJ, Morey R. Study on spider diversity in Ambegaon tehsil, Pune, Maharashtra. Asian Journal of Agriculture & Life Sciences. 2018;3(1):19-23.

8. Salunke RN, More SV. Diversity of Insect pest in agricultural and forest areas from Chandgad Tahsil, Kolhapur district of Maharashtra. Indian Journal of Scientific Research. 2017;13(1):263-267.

9. Vairale AB. Diversity of spiders in eco-system of tahsil Sangrampur district Buldhana (Maharashtra State). Vidyabharati International Interdisciplinary Research Journal., 2017;6(1):107-111.

10. Wankhade V, Manwar N, Malu A. Preliminary studies on diversity of order Coleoptera at Sawanga-Vithoba lake region, district Amravati, Maharashtra, India. Journal of Entomology. 2014;11(3):170-175.