

Diversity of Agriculture Pest, Wari, Dir Upper, Khyber Pakhtunkhwa, Pakistan

Farzana Perveen, Haroon

Department of Zoology, Shaheed Benazir Bhutto University Sheringal, Dir Upper, Khyber Pakhtunkhwa, Pakistan

Correspondence: haroonsbbu@gmail.com

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ABSTRACT

Pests are the real enemy of human for their health, crops and for their wealth. A study was conducted on pest's diversity at Wari. A total of 39 pests was collected from the said area which is consisting of 6 Order, 13 genera and 14 species. The most abundant order is Hymenoptera and Orthoptera were found in maximum number 12/39 (30.77%) and least number of species are Hemiptera 1/39 (2.56%) and Lepidoptera 2/39 (5.13%). The aim of the present study to explore the pest fauna of Wari, Dir Upper, Khyber Pakhtunkhwa, Pakistan.

Keywords: Pests, Order, Hymenoptera, Orthoptera.

INTRODUCTION

The amount of damage in quality and quantity and health hazards due to insect infestation when converted into monetary concerns may run into millions of rupees to national exchequer annually. These losses could be prevented either by chemical or biological methods. Chemical methods pose many environmental hazards [1]. The natural enemies of the lepidopteran pests are important features of Integrated Pest Management programs. These pests of economic significance, such as *Thysanoplusiaorichalcea* and *Helicoverpaarmigera*, *Plutellaxylostella*, *Pierisrapae*, etc, are the main species. All of these pest species are attacked by various larval parasitoids and entomopathogenic fungi, which can affect their pest status to varying degrees. The larval parasitoids are mainly hymenopteran species that have been successfully introduced as biological control agents [2].

Therefore, biological methods, which are safe for the environment, are encouraged. During recent years, some plants have received global attention and their secondary metabolites have been formulated as botanical pesticides for plant protection since they do not leave residues toxic to the environment, have lower toxicity to mammals and medicinal properties for humans. The insecticidal activity of many plants-products has been reported extensively against stored-product pests. Different types of aromatic plant preparations such as powders, solvent extracts, essential oils and whole plants are being investigated for their insecticidal activity, including their action as repellents, anti-feedants and insect growth regulators [1]. Grasshoppers usually considered a pest of agricultural fields and pasture lands. The members of this tribe cause damage to many crops, i.e. maize and seedlings of cotton and also feeds on leaves of common weeds like bare and on cabbage leaves during winter [3].

Integrated Pest Management (IPM) is an approach to avoid and restrain vermin with least amount collision on human health, the environment and non target organisms [4]. The term Pest Management came about in the early 1960's, which then evolved into Integrated Pest Management (IPM). However, many aspects of IPM have been practiced since plants were first cultivated by humans. Discontent with a purely pesticide approach started the push to look for other ways to control pests [5]. The aim of this the present study was carried out at Wari, Dir Upper, Khyber Pakhtunkhwa, Pakistan.

MATERIALS AND METHODS

Study area

The present study was carried out at Wari, Dir Upper, Khyber Pakhtunkhwa, Pakistan, during June, July and August 2014. Wari is high mountain ranges and River Punjkora flowing from the Kohistan Mountains cross Sheringal, Dir, Termergara and reached to District Charsadda by means of Mountainous root.

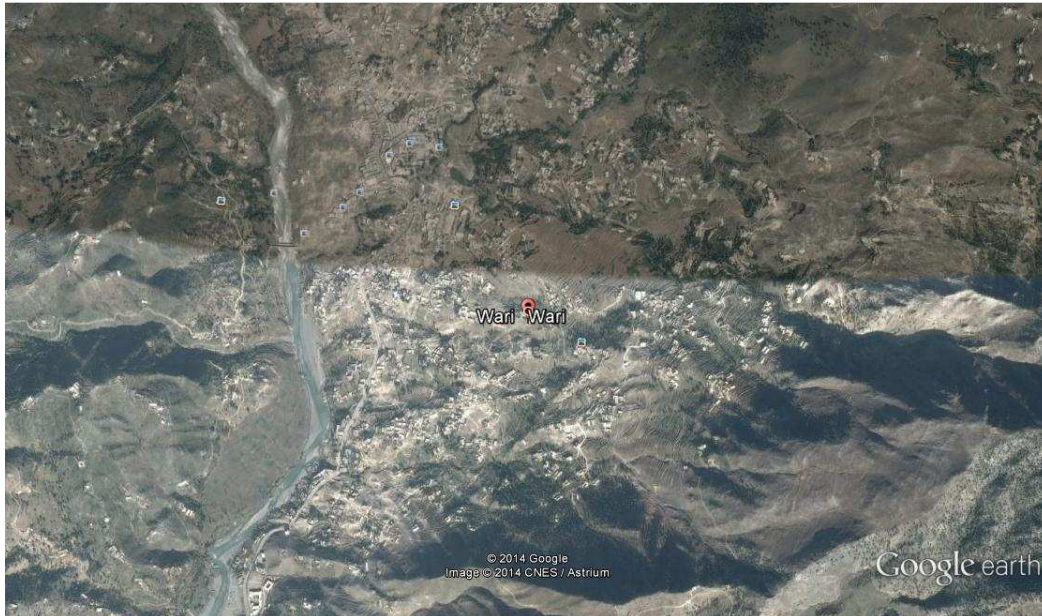


Figure 1. Map of Wari, Dir Upper [6]

Methods

The specimens were collected with the help of forceps and killed them in to Chloroform bottle. The collected species pained with thermopile for preservation. The species identified with the help of keys and available literature.

RESULTS AND DISCUSSION

Table 1. Collected species their numbers (N), Body Length (BL) and Body Width (BW).					
S. No	Scientific name	N	BL	BW	Abundance
1	<i>Typhaeustyphaeus</i>	2	3.5cm	2cm	5.13%
2	<i>Trichodescraboniforms</i>	5	2.5cm	1cm	12.82%
3	<i>Carinopspucilo</i>	2	3cm	1.8cm	5.13%
4	<i>Amegillaacreansis</i>	2	2cm	1cm	5.13%
5	<i>Vespa vorentalus</i>	3	2cm	0.4cm	7.69%
6	<i>Vespa crabro</i>	2	2.6cm	0.6cm	5.13%
7	<i>Schistocera gregaria</i>	2	5cm	1cm	5.13%
8	<i>Letriopterapunctatissima</i>	5	4cm	0.8cm	12.82%
9	<i>Cossuscosus</i>	2	5cm	1.8cm	5.13%
10	<i>Deroplatysdesiccanta</i>	1	6cm	0.8cm	2.56%
11	<i>Hymonopus coronatus</i>	2	5cm	0.7cm	5.13%
12	<i>Elasmughagrisea</i>	1	2cm	1cm	2.56%
13	<i>Pepsis heros</i>	5	2.4cm	0.6cm	12.82%
14	<i>Achctadomesticus</i>	5	1.9cm	0.5cm	12.82%

A total of 39 specimens was collected belong to 6 Order, 13 genera and 14 species from the said area. The collected species are *Typhaeustyphaeus*, *Trichodescraboniforms*, *Carinopspucilo*, *Amegillaacreansis*, *Vespa vorentalus*, *Vespa crabro*, *Schistocera gregaria*, *Letriopterapunctatissima*, *Cossuscosus*, *Deroplatysdesiccanta*, *Hymonopus coronatus*, *Elasmughagrisea*, *Pepsis heros* and *Achctadomesticus* respectively. The maximum species of

order Hymenoptera and Orthoptera 12/39 (30.77%) and minimum species were recorded from Hemiptera 1/39 (2.56%).

The pests usually attack on plants which are applicable for insects. They spend their life cycle in these plants. The adult lays egg, from egg, larvae hatch; they complete their larval stage in many instars and destroyed the crops (fruit, vegetable etc.). Caterpillars, maggots, grubs are the larvae of pests.

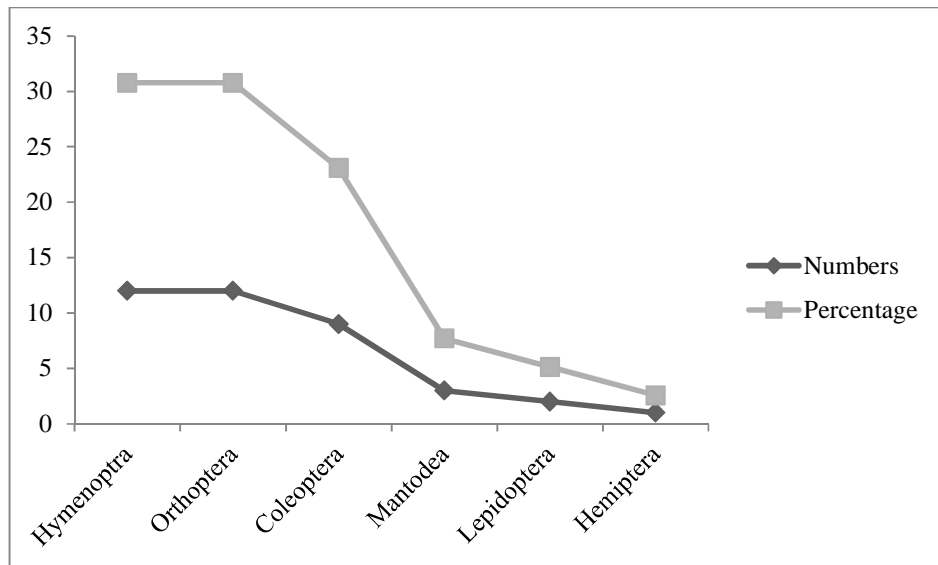


Figure 1. Order wise distribution

The pests are consisted of different orders, some insects are very hard like species of the order Coleoptera, Orthoptera and Mantodea. From the present survey, we investigate that the orders Hymenoptera and Orthoptera were found in maximum number 12/39 (30.77%) in each followed by Coleoptera 9/39 (23.07%) and Mantodea 3/39 (7.7%). The least number are Hemiptera 1/39 (2.56%) and Lepidoptera 2/39 (5.13%).

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