

First record of araneidae and tetragnathidae from wheat crop of District Dadu, Sindh, Pakistan

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Abstract

Taxonomic studies started in the month of November 2017 to April 2018. 527 spiders were collected and sorted into two families such as Araneidae and Tetragnathidae, two genera such as Argiope and Tetragnatha and three species namely *Argiope trifasciata*, *A. Pradhani* and *Tetragnatha javana*. Orb web spiders are central job in wheat crop of district Dadu and orb-web species of above families are first time recorded from wheat crop of Dadu district, Sindh, Pakistan.

Keywords: Orb-web spider, wheat, araneidae, tetragnathidae and dadu

1. Introduction

Spiders are generalist, predator and biological control agents [1]. They maintain the nature and its world and specially insect's ecological equilibrium [2]. Spiders belong to Kingdom-Animalia, Phylum-Arthropoda, Class-Arachnida and Order- Araneae. Their rank is 7th number according to biodiversity [3]. 42751 varieties have been researched, 110 families and genera up to 3859 [4]. Spiders are carnivorous as well as rapacious; they are using the insects as food in regulate to survive [5]. Family araneidae and tetragnathidae are the web building spiders and also can control and maintain the ecosystem and most of the spider fully developed in the adult form during the harvesting the wheat crop [6]. Araneidae, Tetragnathidae spiders trapped the insects through web and web is the five times stronger than the piano wire.

Spider's knowledge has been unnoticed among the peoples of Sindh Province. In Pakistan the present knowledge, discussion, science, ecology, biology and genetics about wheat spider fauna is highly restricted. Moreover, the predatory studies, biological studies, ecological studies and possible issues are painfully panic. Before took the important efforts to approximation important functions of spiders to reduce the rate of pest population in the wheat field of district Dadu, Sindh, Pakistan.

2. Materials and Methods

527 wheat spiders were collected during the field work of district Dadu with four localities such as Dadu, Mehar, Johi and KN-Shah from the wheat crop from the month of November 2017 to April 2018. Number of specimen were captured by Hand picking method from the Stems, foliages, leaves

Specimens were sealed in bottles having 70% alcohol mixed with few drops glycerin. Total specimens were moved to laboratory present in bottles filled with 70% alcohol mixed few drop glycerin. Preserved spiders were kept in petridishes then Spiders were examined one by one under binocular microscope with help brush and forceps. Taxonomical keys

were used for examination and taxonomic studies up to families and genera with species [3]. Different parameters such as body length, abdomen length, carapace length, abdomen width, carapace width and legs of adult spiders were calculated in mm. In the last examined spiders permanently preserved in vials filled 70% alcohol mixed with few drops glycerin and tagged with family, time date, locality and collector name.



Fig 1: Pictures captured during the research work.

3. Results and Discussion

During taxonomic study of spiders from wheat crop of district Dadu along with four localities namely Dadu, Mehar, Johi and KN-Shah were visited from the cultivation of crop during November-2017 up to harvestation during the April-2018. 527 specimens were captured from tillers, foliage, stems and leaves and sorted out into two families such as Araneidae with one genus and two species and Tetragnathidae with one genus and one species. The identification applied on the basis upon the morphology with the help of taxonomical keys [3].

During the present research, status of male and female collected spider from wheat crop is given below (table no. 01), monthly Status of Collected Wheat Spiders is given below (table no. 02), status of collected wheat spider at species level is given below (table no.03), Diversity of spiders collected from district Dadu, Sindh, Pakistan is also given below (04).

Pakistan has logically marvelous spider fauna. The normal research on the taxonomic position of spider is done from Sindh province and also recorded 26 different species with 09 families having the 22 genera [3], 961 spiders were collected with four families and five genera with six species from the wheat field of Sindh [6]. And also work has been done on the spider from Punjab [7] and from Cambridge University [8].

Table 1: Male and Female collected spider from wheat crop

Male	Female
156	371

Table 2: Monthly Status of Collected Wheat Spiders.

Month	Collected Spiders	% of Collected Spiders
November-2017	0	0
December-2017	17	3.225
January-2018	53	10.056
February -2018	78	14.800
March-2018	268	50.85
April-2018	111	21.06

Table 3: Status of collected Spiders at species Level

Species	Collected Spiders	% of Collected Spiders
<i>Argiope trifasciata</i>	151	28.65
<i>Argiope pradhani</i>	312	59.20
<i>Tetragnatha javana</i>	64	12.144

Table 4: Diversity of spiders collected from district Dadu, Sindh, Pakistan.

Family	No. of genera	No. of Species	% Of Species
Araneidae	02	02	87.85
Tetragnathidae	01	01	12.144

4. Conclusion

During the taxonomy of spiders from wheat crop of district Dadu, Sindh, Pakistan, all identified species are first time recorded and all wheat spiders are identified on the basis of arrangement of eyes, tarsal claws and length of legs from wheat crop of Dadu district. This project will provide foundation data and consciousness among local peoples as well as farmers about the spider fauna of district Dadu, which will be supportive to begin and evaluate the prospect management exercise for wheat field in this district. These

studies will also good quality calculation in the scientific literature of Pakistan.

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6. References

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