Entomology

# Systametic study of orb web spider (Arachnaearchnida) of wheat crop from district Dadu Sindh Pakistan

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**Abstract**

All spiders are predators, feeding almost entirely on other arthropods, especially insects. Some spiders are active hunters that chase and overpower their prey. These typically have a well-developed sense of touch or sight. Other spiders instead weave silk snares, or webs, to capture prey. The feeding nature of Spider they are carnivore due to this nature they are Biological control agent that means they control pests naturally.

**Keywords:** spinnerets, predator, taxonomy, dadu

## Introduction

Phylum Arthropoda, its Class is Arachnida and Order- Araneae has position in group of spiders on the 7th among animals. Spiders (order Araneae) possess eight legs, mostly six to eight eyes, chelicerae possess fangs able to inject venom and on the posterior side of the abdomen silk producing organ called spinnerets are present. Spiders can be found every part of world with exclusion of Antarctica, having excellent habitation ability except sea colonization and in air. All spiders are predators, feeding almost entirely on other arthropods, especially insects. Some spiders are active hunters that chase and overpower their prey. These typically have a well-developed sense of touch or sight. Other spiders instead weave silk snares, or webs, to capture prey. Webs are instinctively constructed and effectively trap flying insects. Many spiders inject venom into their prey to kill it quickly, whereas others first use silk wrappings to immobilize their victims. Argiope varies from all araneids but (except Gea), which have posterior eyes row in manner strongly well built procurved. The posterior median lateral eyes are large in size than Anterior lateral eyes have ship and boat shaped tapetum in lateral half a vast formed taptum in the median half. The boss situated on the anterior features of chelicerae is comparatively little and the chelicerae are a great deal weaker than in Araneus, and are from time to time disposed posteriorly in manner at distal end. Size of female larger than the size of male; carapace enclosed with silvery types hairs, The abdomen is larger, notched, irregular in front structure a hump on every side, spot in black in colour and yellow in colour (or orange); abdomen of female is shelter formedthat of males and juveniles larger than wide. The metatarsus and tarsus parts of legs are longer in sized than patella and tibia of the females, front legs from time to time black and from time to time with a short band of orange in color situated on the femur, remaining have femora reddish in color or yellow in color and remaining part is black in color. Each and every one builds a nearly perpendicular and vertical orb-web, which have stabilimentum or one pair of stablimenta crossing. Full adult female make the web half meter to one meter in diameter approximately, generally 1-2 meters above the ground. A few orb web spiders namely garden Orb-web Spiders, their making work of web only at night time but Argiope set up and making the web at every time. On the other hand, they generally remake their web at mid- night time if needed. During the day Cross spiders generally only repair their webs if scratched but at least level. The female spiders lay their eggs in a silk pouch which is close and protected by their web after that she will take out a few amount of liquid and color their eggs pouch into dark green type color.

## Study area

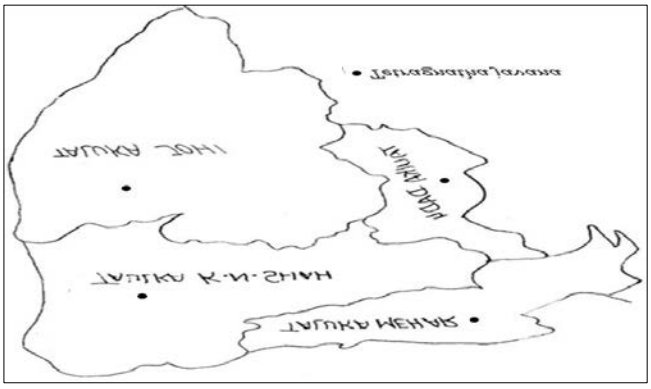

**Fig 1:** Surveyed District Dadu-Sindh Pakistan

## Research Methodology

Wheat spiders were captured from the wheat field by two methods employed, one of the simplest method to captured large number of wheat spiders is known as Hand picking method from the leaves, Stems, foliages and another method is known as the Pitfall trapping method to collect also number of wheat Spiders from the ground of wheat Field. A pitfall trapping method refers the digging of hole in the ground and fixing bottles with ground surface level filled 70% alcohol with

4% to 5% of glycerin about 03 inches for the preservation of spiders and also prevent the cannibalism among the spiders.

## Results

Overall 327 Wheat spiders were collected during the survey of district Dadu it having four Talukas namely, K.N.Shah, Johi, Mehar, Dadu and Dadu from the wheat field during the winter session to spring session in the month of November 2017 to April 2018.

**Fig 2:** 2 Showing the ventral and dorsal side of male *Argiope trifascita*

**Table 1:** 1 Measurements of female *Argiope trifasciata* in (mm) measurements (mm)

| Parameters | Female (n=5) | | |
|---|---|---|---|
| | Range | Mean | S.D |
| Length of body | 10-22 | 16.22 | 4.3 |
| Length of carapace | 4-8 | 6.02 | 1.41 |
| Width of carapace | 3-6 | 5.0 | 1.26 |
| Length of abdomen | 6-12 | 10.2 | 3.05 |
| Width of abdomen | 5-8 | 7.4 | 1.62 |

**Table 2:** Measurements of leg (mm)

| Legs | I | II | III | IV |
|---|---|---|---|---|
| Femur | 12 | 11 | 8 | 10 |
| Patella + Tibia | 10 | 10 | 7 | 9 |
| Metatarsus | 9 | 8 | 5 | 8 |
| Tarsus | 2 | 1.8 | 0.9 | 1.5 |
| Total | 33 | 30.8 | 20.9 | 28.5 |

**Table 3:** 10 Showing the percentage of Male and Female Spiders

| Male | Female |
|---|---|
| 89 | 299 |

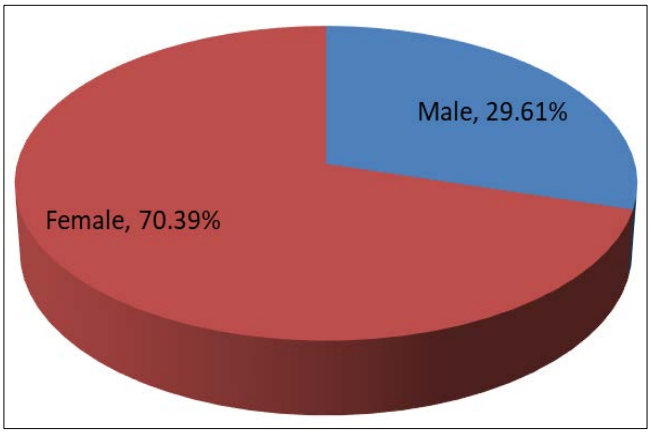


**Fig 3:** 1 Pie chart showing the percentage of Male and Female Spiders

**Table 4**

| Taluka | % |
|---|---|
| K.N. Shah | 14.99 |
| Mehar | 24.85 |
| Dadu | 21.82 |
| Johi | 38.33 |

## Remarks

In corresponding pests insect's administration synthetic control of pests irritation is normal yet pesticides chemicals and sprays are dangerous, harmful and hazardous to human beings, properties of human beings, domesticated animals and the environment, Because of nonappearance of powerful elective methods for pests insects control the utilization of pesticides chemicals has expanded which left intense effects on both man's welfare and condition, so spiders are naturally biological pest controlling agents.The Government should organize seminar conference for awareness among biological control agents. I am highly thankful to supervisor and colleagues, specially Mr Muhammad Luqman Bugti, He guided and support me in this research publication.

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