CHAPTER 10

SIGNIFICANT FINDINGS AND RECOMMENDATIONS

1. In all the agricultural crops which does not have human interference in the form of pesticide spray the species diversity and abundance of the spiders is higher as compared to the fields receiving heavy pesticide inputs.
2. Habitat diversification in the form of intercropping promotes the colonization of the spiders in Pigeonpea and Castor crops. In the paddy crop the weeds occurring inside the fields also provide refuge to the spiders.
3. Field margins should be broad and herbaceous vegetation and trees provide refuge to the spiders during the lean periods or during the post harvest season.
4. Growing of Alfalfa crop along the adjacent fields provides refuges to both Hunting spiders as well as to the Web building spiders during the post harvest season. Alfalfa is an annual crop and it acts as a reservoir of spiders which can colonize the crop field immediately after the sowing of the crop.
5. Bund in the paddy provides refuges to ground hunting spiders of the family Lycosidae. Thus promoting a higher population of the spiders in the paddy fields.
6. Abiotic factors like high humidity, and vicinity of water near the crop fields provides ideal habitat for spiders which are more prone the problem of desiccation like Tetragnathidae and Oxyopidae.
7. Human Disturbance in the form of regular survey into the interior of the field, Grazing of the crops, Pesticide input into the paddy, Pigeonpea and castor fields should be kept to minimum as these anthropogenic

activities causes damage to the webs of the web builders. Pesticides cause high mortality in spiders and promote their emigration from the fields.

8. Combination of Avian and Arthropod predators in the field can bring down the population of the caterpillars in the field which cause extensive damage to the crops.
9. Functional responses of *Oxyopes shweta* (Tikader) to 3rd instar *Spodoptera litura* shows that the females are more voracious feeders than males and exhibit Type II functional response. While the males exhibit a combination of Type I and II responses. This increase in the feeding potential of the female spider is correlated with the nutrition needed for the production of bigger egg clutch.
10. The numerical response studies involving a combination of the male and female spiders , only males and only females shows cooperative feeding in this spider species and no intraguild predation in the form of Cannibalism. Thus these spiders are effective in the control of the larval lepidopteran pests.
11. The prey preference studies shows that the in a two prey choice systems involving 3rs instar spodoptera litura and juvenile *Clavigralla horrens.* The males of *Oxyopes shweta* prefer *Clavigralla horrens* to the *Spodoptera* larvae. The probable reason to this is the body size of *Clavigralla* is smaller as compared to *Spodoptera litura* larva.

    The females show preference towards the *Spodoptera* larvae than to *Clavigralla* juveniles, showing that the *Spodoptera* larvae are nutritionally more profitable than *Clavigralla.*

Future Line of Work

1. Serological analysis involving ELISA Based Studies and DNA – PCR based studies on spiders to accurately estimate the diet breadth of the spiders in the fields.
2. Understanding the territorial behaviour of the Dominant spiders in the agroecosystems which are resistant to the pesticides.
3. Incorporating the spiders in the field with and without insecticide input and analysis the crop output in both the crops.
4. To know the prey of the spiders during the post harvest season particularly the web building spiders.
5. Evaluation of the intraguild predation in the field and to assess the damage control potential of the spider assemblages.
6. Coordinated Approach involving the impact of insectivorous birds and the arthropod predators involving Spiders, Predatory beetles and Bugs on the pest complex in various agroecosystems.