

## **EXECUTIVE SUMMARY OF THE MINOR RESEARCH PROJECT**

### **“ Biosystematic studies of predatory mites inhabiting medicinal plants”**

UGC Lr No. MRP(S)-224/12-13KLCA043/UGC-SWRO dt.29.3.2013

Dr. Mary Anithalatha Sadanandan

PG & Research Dept. of Zoology

Medicinal plants now a days are being cultivated in the fields to meet the increasing demand for pharmaceutical industries. Pests affect the commodities of human beings and cause economic loss. Like any other plants, medicinal plants too have to bear the devastating attacks of injurious pests. In order to eradicate or minimize the pest problems several control methods such as chemical, cultural, mechanical, autocidal, genetic, behavioural and biocontrol have been largely practiced. Generally the pests are controlled by applying synthetic pesticides. The indiscriminate use of synthetic pesticides causes residues in the crop besides development of pesticide resistance in pests.

Predatory mite have received considerable recognition globally owing to their potential as biocontrol agents of phytophagous mites, and more recently of insect pests like thrips, aphids , scale insects, mealy bugs *etc.*, Despite the rich diversity of predatory mites in Indian subcontinent, very little work has been carried on the biosystematics of these mites in South India especially in Kerala.

During the present study, predatory mites harbouring 25 species of medicinal plants belonging to 22 genera and 15 families were collected and examined for studying their taxonomic characters . A total of 33 species belonging to 15 genera and 5 families were collected under 2 suborders viz., Mesostigmata and Prostigmata. . The predatory families recorded during the study were Phytoseiidae, Cheyletidae, Cunaxidae, Bdellidae and Stigmaeidae. Phytoseiidae included 24 species , Cheyletidae - 2 species, Cunaxidae - 3 species, Bdellidae - 2 species and Stigmaeidae - 2 species

However the species diversity of Mesostigmata was remarkable, as the family Phytoseiidae constituted the largest family of predatory mites comprising 24 species out of the total 33 recovered during the study. These 24 species recovered could be categorised under 3 sub families viz., Amblyseinae , Phytoseiinae and Typhlodrominae This observation clearly revealed the prevalence of phytoseiid mites on medicinal plants of Kerala.

The suborder Prostigmata, though was recognized to exhibit the maximum family diversity, its species diversity was comparatively very low than Mesostigmata. The recovered families under Prostigmata were Cheyletidae, Cunaxidae, Bdellidae and Stigmaeidae, of which Cunaxidae supported the maximum number of species. During the present study, 3 species of cunaxid mites categorised under 2 genera viz., *Cunaxa* and *Neocunaxoides* were recovered. Under the family Cheyletidae two species were identified which belongs to genera *Hemichelytia* and *Chelytomimus* .The family Bdellidae was found represented by two species under the genus *Bdella* . Two species of family Stigmaeidae were under the genus *Agistemus* . All the above families of mites still remain as relatively unstudied group in India except certain isolated examples

(Gupta, 1985; 1986 and 1991), despite their significant predatory role. Further studies may reflect their potential in the field of biological control of pests.

### ***Publication***

Mary Anithalatha Sadanandan. 2015. Survey of predatory mites (Family : Phytoseiidae ) on medicinal plants in Kozikode and Wayanad districts of Kerala , India . *Utter Pradesh Journal of Zoology*. 35(1):21-23.