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Mites Infesting Weeds In South Bengal With New Reports From India And Their Economic Importance

Zoology

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ABSTRACT

The examination of 33 species of weeds collected from South 24 Paraganas district of West Bengal ,India, for occurrence of phytophagous and predatory mites revealed the occurrence of a total of 23 species of mites belonging to 19 genera, 9 familie and 3 orders.This included 9 species of phytophagous and 14 species of predatory mites.The mites have been listed along with their hosts/habitats/localities, Relative abundance, economic importance etc. This also included two species of Bdellidae, the occurrence of which was earlier unknown from India

KEYWORDS:

Weeds, phytophagous mite, predatory mite, South 24 Paraganas, West Bengal, economic importance, New reports.

INTRODUCTION

The weeds are menace in any agricultural field as they deprive the crops from getting the nutrients from soil. This affects growth and yield of the crop .These weeds harbour many mites, some of which are plant feeders while some are predatory in nature.The weeds of South 24 Paraganas district have so far not been surveyed for occurrence of mites. In view of this , this topic was chosen to record the phytophagous and predatory mites from some weeds of this region and this paper presents the results thereof .Earlier to this work, some information on mites occurring on weeds were available (Dagar and Singh ,1979; Das, and Roychaudhuri,1979; Kumar *et al*. 1979; Mandal *et al* . 2012) but none of those covered the areas wherein the present study was conducted.

METERIAL AND METHODS

For studying the diversity of mites on weeds of South 24 Parganas , the places wherefrom collection was made were Narendrapur, Sonarpur, Baruipur, Kalyanpur, Canning and adjoining areas . The collection trip was conducted twice in a month and as such twelve collection trips were conducted during September 2016 to March 2017 .Weeds were examined in the field itself under a 20x hand lens and mites, whatever could be seen were collected with the help of a fine brush moistened with alcohol and preserved in alcohol. In many a cases, the weeds were brought in the laboratory in polythene bags covering the mouth tightly and then were examined under a stereo binocular microscope and the mites were collected therefrom. The mounting was done in Hoyer's medium .The mite specimens were identified by consulting the current up-dated literature.

RESULTS AND DISCUSSION

The identification of the collected mite specimens revealed the occurrence of a total of 23 species under 19 genera, 9 families, belonging to 3 orders and all those have been listed in Table No.1. In each case , their localities, host/habitat records, relative abundance and economic importance, if any have also been mentioned and that list is self explanatory . Out of those, 9 species under 8 genera, 3 families were phytophagous and 14 species ,11 genera, 6 families were predatory in nature. Among the phytophagous mites, *Oligonychus indicus, Tetranychus ludeni, Petrobia harti* were found to be moderately injurious pest on *Cynodon dactylon, Urena lobata, Oxalis corniculata* plants while *Amblyseius herbicolus , Amblyseius largoensis* were important predators on *Oligonychus indicus* on *Cynodon dactylon* , *Euseius ovalis* feeding upon *Petrobia harti* on *Oxalis corniculata*.There were several specimens of Oribatid mites which could not be identified and those were mostly fungivorous.

Table No.1 List of Mites collected from South 24 Paraganas of West Bengal during September 2016-March 2017

Phytophagous Mites						
Sl. no	**Order/ Family**	**Name of species**	**Host/habitat**	**Locality**	**Abandance Status**	**Economi importance**
1	Order-Prostigmata Family-Tarsonemidae	*Tarsonemus* sp. (undetermined)	*Urena lobata Abutilon indicum Echinochloa colonum Eleusine indica*	Narendrapur Kalyanpur	2	Recorded on undersurface of leaves, economic importance unknown.
2	Order-Prostigmata Family-Tenuipalpidae	*Brevipalpus euphorbiae* Mohanasundaram	*Panicu mrepens*	Baruipur	2	Stray occurrence,
3	Order-Prostigmata Family-Tetranychidae	*Eutetranycus maximae* Nassar & Ghai	*Chloris barbata*	Canning	3	Casual occurrence
4	Order-Prostigmata Family-Tetranychidae	*Hystrichonychus* sp.	*Eupatorium triplinerve Artemisia nilagirica Oxalis corniculata*	Narendrapur	2	This appears to be a new species.
5	Order-Prostigmata Family-Tetranychidae	*Oligonychus indicus* (Hirst)	*Cynodon dactylon*	Narendrapur	2	This was encountered on undersurface of leaves producing whitish patches.
6	Order-Prostigmata Family-Tetranychidae	*Petrobia harti* (Ewing)	*Oxalis corniculata Artemisia nilagirica Coleus forskohlii Eupatorium triplinerve*	Narendrapur	3	Huge population on under surface of *Oxalis corniculata* leaves. The infested leaves turned yellow, withered.
7	Order-Prostigmata Family-Tetranychidae	*Schizotetranychus andropogoni (*Hirst)	*Cynodon dactylon*	Narendrapur	3	The infestation produced while stippling on either side of mid rib.

8	Order-Prostigmata Family-Tetranychidae	*Tetranycus ludeni* Zacher	*Urena lobata*	Narendrapur	3	Occasionally encountered.
9	Order-Prostigmata Family-Tetranychidae	*Tetranychus urticae* Koch	*Abutilon indicum Cannabis sativa Mimosa pudica*	Narendrapur	2	Often this mite colonized on undersurface of leaves,feeding caused yellowish patches.

Predatory Mites

Sl. no	Order/ Family	Name of species	Host/habitat	Locality	Abandance status	Economic importance
1	Order-Prostigmata Family-Bdellidae	*Bdellodes dubitata* Womersley	*Cynodon dactylon*	Narendrapur	3	Occasionally encountered,This species reported here for the first time from India
2	Order-Prostigmata Family-Bdellidae	*Bdellodes grandiflora* Gupta	*Urena lobata*	Narendrapur	3	Occasionally encountered.This species reported here for the first time from India
3	Order-Prostigmata Family-Cunaxidae	*Cunaxa setirostris* (Hermann)	*Urena lobata*	Narendrapur	3	Occasionally encountered, economic importance unknown.
4	Order-Prostigmata Family-Stigmaeidae	*Agistemus fleschneri* Summers	*Urena lobata*	Narendrapur	3	Only occasionally encountered.
5	Order-Prostigmata Family-stigmaeidae	*Agistemus* sp.	*Urena lobata*	Narendrapur	3	Only occasionally encountered.
6	Order-Prostigmata Family-Tydeidae	*Pronematusfleschneri* Baker	*Cyperus rotundus Cynodon dactylon*	Baruipur Narendrapur	2	Occasionally encountered this is normally a egg feeder but such behaviour not seen.
7	Order-Mesostigmata Family-Ascidae	*Asca* sp.	*Eupatorium triplinerve*	Narendrapur	3	Occasionally encountered.
8	Order-Mesostigmata Family-Ascidae	*Lasioseius terrestris* Menon & Ghai	*Cynodon dactylon*	Narendrapur	3	Occasionally encountered.
9	Order-Mesostigmata Family-Phytoseiidae	*Amblyseius sherbicolus* (Chant)	*Cynodon dactylon Croton sparsiflorus*	Narendrapur	1	Abundantly available,found in association with Mealy bug on *Cynodon dactylon*.
10	Order-Mesostigmata Famiy-Phytoseiidae	*Amblyseius largoensis* (Muma)	*Cynodon dactylon Chloris barbata Eleusine indica Ruellia tuberosa*	Narendrapur Saltlake	1	Abundantly available,found in association with Mealy bug on *Cynodon dactylon*.
11	Order-Mesostigmata Family-Phytoseiidae	*Euseius ovalis* (Evams)	*Croton sparsiflorus Cyperus difformis Physalis minima Oxalis corniculata*	Narendrapur Saltlake	2 1	Good population in association with aphids.
12	Order-Mesostigmata Family-Phytoseiidae	*Neoseiulus cynodonae* (Gupta)	*Coccinia grandis Eleusine indica*	Narendrapur Baruipur	3	Occasionally encountered.
13	Order-Mesostigmata Family-Phytoseiidae	*Paraphytoseius orientalis* (Narayanan et al)	*Abutilon indicum Cynodon dactylon*	Narendrapur	3	On none of the plants,the population was high,found in association with Tingid bug
14	Order-Cryptostigmata	Oribitid mite undetermined	*Abutilon indicum Urena lobata Cynodon dactylon Panicumrepens*	Narendrapur	1	Good number of specimens were recovered on under surface of leaves in association with fungi.They are fungivorous.

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