



Diversity of Mites on Some Tropical Fruit Trees in South 24 Parganas District of West Bengal and Their Economic Importance

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ABSTRACT

The present paper reports the occurrence of 27 species of mites under 19 genera, 11 families, 4 orders. The relative abundance, host-habitat records, period of occurrence, abundance status and remarks regarding economic importance are highlighted.

KEYWORDS : Mites, Fruit trees, South 24 parganas, West Bengal, Survey.

1. Introduction

The district South 24 pargana is very famous for growing important fruits tree like litchi, guava, mango, banana along with several others. These trees are regularly attacked by a number of mites which have not been surveyed so far hence an

attempt has been made here to survey and document that collection made during April 2015 to March 2016. Although various authors from India contributed on this topic from time to time covering studies on various aspects like survey, bioecology, management, etc, but so far as mites of South 24 parganas district is concerned, not much documentation has been made about those and nor has any study been made and Keeping that gap of knowledge in view, the present study was taken up and the results thereof are embodied here.

Some of the earlier works done on fruit tree mites from India are Gupta (1980) on leaf curl disease of Litchi, Gupta et al; (1971) on citrus mite, Gupta and Dhooria, (1975) on mites of fruit trees of Punjab, Gupta (1985, (1991); contributed substantially on Indian fruit tree mites. Gupta (2012); in his book on mites of agricultural importance dealt with mites occurring on 40 types of fruit trees in India and reported over 150 species of mites including both polyphagous and predatory ones occurring on various fruit trees.

2. Materials and Method

The surveys were conducted in different places of South 24 parganas, viz. Narendrapur, Baruipur, Sonarpur, Gosaba, Sagar islands, etc. Mites were collected with the help of fine brush, dipped in alcohol and were preserved in 70% ethanol. The mites were mounted in Hoyer's medium. The mites were identified by the junior author (SKG) himself. Wherever possible, the status of mites and their economic importance were highlighted.

3. Result and Discussion

The identification of mites revealed the occurrence of 22 species of mite under 11 families, 19 genera, 4 orders. All those have been listed in Table-1 along with their host, location, status, remark and economic importance either as pest or as predators.

A perusal to Table-1 indicates that there were 5 species of mites which were abundantly available, 3 species of mites were moderately abundant and 5 species were of rare occurrence were moderately abundant, - species were only casual in nature.

This species of mite which were found to be more serious pests doing considerable damage were Panonychus citri on papaya, Oligonychus mangiferous on mango and black berry. Aceria litchii on Litchi and Aceria gurreronis on coconut. The others were of relatively less important. Among the predatory mites Amblyseius largoensis, Paraphytoseius orientalis, Euseius alstonae, Euseius ovalis were more effective predators. The others were of not much economic importance.

Earlier to this no attempt was made to document the mites occurring on fruit trees in south 24 pargana. Therefore this is a maiden approach to document the mites species from that area. Gupta (1985, 1992 and 2012) listed many mites occurring on fruit trees in west Bengal as well as India as a whole 4 species of predatory mites(*) the occurrence of which were not known earlier.

4. Acknowledgement

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Order- Prostigmata		PHYTOPHAGOUS MITES			
FAMILY-1 Tetranychidae	HOST	LOCATION	STATUS	REMARK	
1	<i>Oligonychus mangiferous</i> (Rahman and Sapra)	Mango, litchi	Narendrapur	1	These mites colonized on upper surface of leaves feeding induced browning of leaves caussing dry & defoliation.
2	<i>Panonychus citri</i> (Mc Gregor)	Papaya, Lemon	sonarpur	1	Very severely infested papaya, making the leaves yellowish specially at the petiolar region. The population sometimes reached 60-70 mites per leaf.
3	<i>Tetranychus fijiensis</i>	wax apple	sonarpur	2	Occasionally recorded, leaves turned brownish.
4	<i>Schizotetranychus cajani</i>	papaya	Narendrapur	2	Causes appearance of slipplop

5	<i>Eutetranychus orientalis</i>	Jackfruit	sonarpur	3	Stray occurrence. No damage done. A good population was
	(Klein)				noticed on upper surface of leaf & midrib region.
6	<i>Tetranychus utricae</i>	coconut	Baruipur	1	Leaf becomes enveloped in web leaves turned brown &
					defoliated.
	FAMILY-2 Tenuipalpidae				
7	<i>Brevipalpus levis</i>	LITCHI	Baruipur	2	produced brown patch
8	<i>Brevipalpus phoenicis</i>	CITRUS	sonarpur	1	Produced brown patch
	(Gejj.)				
9	<i>Brevipalpus essigi</i>	Litchi	Baruipur	2	casually occurred, no damage.
	FAMILY-3 Eriophyidae				
10	<i>Aceria litchi</i>	Litchi	sonarpur	1	produced brown erineum.
	(Keifer)				
11	<i>Aceria guerreronis</i>	coconut	Narendrapur	1	Occurred underneath the perianth
	FAMILY-4 Tarsonomidae				
12	<i>Tarsonimus sp</i>	FIG, LITCHI	Narendrapur	3	Produced v-shaped brown patch

PREDATORY MITE					
SERIAL NO	NAME OF MITE	HOST/HABITAT	LOCATION	STATUS	REMARK
	ORDER- MESOSTIGMATA				
	FAMILY-1 Phytoseiidae				
1	<i>Amblyseius largoensis</i>	Mango	Narendrapore	1	Good predator of immature stage
	(Muma)				of <i>Tetranychus</i> , abundantly found.
2	<i>Amblyseius herbcicolus</i>	coconut	NARENDRAPORE	2	casual occurrence, fed on nymphs.
	(Chant)				
3	<i>Amblyseius orientalis</i>	Banana	Narendrapore	3	Rarely occurred
	(Ehara)				
4	<i>Euseius ovalis</i>	Banana	Narendrapore	2	Very efficiently predator of <i>Oligonychus indicus</i> ,
	(Evans)				feeding on all stages but population was moderate.
5	<i>Euseius alstoniae</i>	Papaya	Narendrapore	1	Abundantly found, feed on Eggs of <i>O.indicus</i>
	(Gupta)				
6	<i>Euseius finlandicus</i>	Guava, Mango	NARENDRAPORE	2	Occasionally feed on eggs of Tetranychids.
7	<i>Euseius prasadi</i>	Guava, Mango	Narendrapore	2	Occasionally occurred, no
					Economic importance
8	<i>Euseius kapuri</i> *	papaya	saltlake	2	As above
9	<i>Paraphytoseius orientalis</i> *	papaya	Narendrapore	1	Abundantly found
10	<i>Scapulaseius suknaensis</i>	Mango	Sonarpore	2	Occasionally occurred.
11	<i>Neoseiulus fallacis</i>	FIG	NARENDRAPORE	2	As above
	ORDER- Astigmata				
	FAMILY-1 Tydeidae				
12	<i>Parapronematus sp</i>	Banana	Narendrapore	3	Egg predator
	(GUPTA)				
	FAMILY- Acaridae				
13	<i>Tyrophagus putrescentiae</i>	GUAVA	NARENDRAPORE	3	Rarely occurred
	ORDER- PROSTIGMATA				
	FAMILY - Bdellidae				
14	<i>Bdella maldahensis</i>	Ber	SONARPORE	3	Casually occurred, no economic importance.
	FAMILY- Stigmaeidae				
15	<i>Agistemus industani</i> *	wax apple	Narendrapore	2	occasionally occurred.
	FAMILY- Cunaxidae				
16	<i>Cunaxa croceus</i> *	Papaya	Narendrapore	2	Occasionally occurred, no such economic importance.

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12	Tarsonimus sp	FIG, LITCHI	Narendrapur	3	Produced v-shaped brown patch

5.Reference

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