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INCIDENCE OF COCONUT ERIOPHYID MITE *ACERIA GUERRERONIS* KEIFER (ERIOPHYIDAE: ACARI) IN DIFFERENT COCONUT CULTIVARS AND HYBRIDS

The coconut eriophyid mite *Aceria guerreronis* Keifer was first reported as a serious pest in Kerala during 1997-98. Subsequently, the devastating effects of these mites were noticed in Coimbatore and Theni districts of Tamil Nadu and Bangalore in Karnataka (Sathiamma *et al.,* 1998 and Mohanasundaram *et al*., 1999).

They are microscopic, having elongate worm like body and migrate to the young coconut between one to six months after fertilization of the flower and establish colonies under the perianth of the coconut buttons and developing nuts. The feeding of the mite causes scarring of the growing nut resulting in nut deformation and reduced

Table 1. The extent of mite damage in exotic coconut cultivars

Sl. No.	Genotype	Damage nuts in each category (%)					Total no. of nuts	Damaged nuts (%)
		1	2	3	4	5		
1	BSI	18.3	20.3	33.6	13.7	13.7	131	81.6 (64.60)
2	Borneo	27.9	16.2	30.6	14.4	10.8	111	72.0 (58.05)
3	Calangute	63.8	7.8	14.2	9.4	4.7	127	36.2 (36.99)
4	Ceylon	31.7	34.1	29.1	5.0	0.0	79	68.3 (55.73)
5	Co.china	90.1	5.6	4.3	0.0	0.0	69	9.90 (18.34)
6	Fiji	87.0	11.2	1.8	0.0	0.0	54	12.9 (21.05)
7	Gonthembli	75.5	16.9	3.7	3.9	0.0	53	24.5 (29.67)
8	Guam	41.9	23.6	12.6	16.9	5.0	112	58.0 (49.60)
9	Java	69.0	21.4	9.6	0.0	0.0	42	30.9 (33.77)
10	Jamaica	74.5	16.3	1.8	3.8	3.6	55	25.4 (30.26)
11	Kalpawangi	47.1	36.5	12.9	3.5	0.0	85	52.9 (46.66)
12	Kenya	51.8	40.2	8.0	0.0	0.0	160	48.1 (43.91)
13	Kudat	26.2	35.0	22.8	7.6	8.4	172	73.8 (59.21)
14	Lono	18.9	35.6	31.1	12.2	2.2	90	81.1 (64.23)
15	MYD	23.8	41.7	30.9	3.6	0.0	84	76.2 (60.80)
16	MOD	28.0	41.0	26.0	5.0	0.0	100	72.0 (58.05)
17	MGD	30.7	48.2	18.2	2.9	0.0	104	75.9 (60.66)
18	Navasi	39.4	25.3	25.2	10.0	0.0	38	60.5 (57.06)
19	New Guinea	83.3	11.2	5.5	0.0	0.0	36	16.7 (24.12)
20	PO	80.0	8.8	11.2	0.0	0.0	45	20.0 (26.53)
21	PL	80.7	10.5	8.8	0.0	0.0	57	19.3 (26.06)
22	PPT	53.9	16.3	9.5	10.4	9.9	202	46.0 (42.71)
23	Seychelles	29.2	26.5	23.6	13.8	6.9	72	70.8 (57.29)
24	SSt. Apricot	91.7	5.3	3.0	0.0	0.0	38	8.30 (16.74)
25	SSt. Green	49.4	34.1	3.3	13.2	0.0	182	50.5 (45.29)
26	St. Vincent	24.4	33.7	13.3	19.4	9.2	98	75.5 (60.33)
27	Sanramon	48.8	32.0	2.2	17.0	0.0	41	51.2 (45.69)
28	Siam	66.2	14.7	13.3	5.8	0.0	68	33.8 (35.55)
29	Thembli	69.6	20.3	5.0	5.1	0.0	79	30.4 (33.46)
30	Zanzibar	45.4	32.3	15.0	7.3	0.0	33	54.5 (47.58)
	CD (0.05)							8.10

copra yield. Severe infestation by the mite during early stages of nut development results in heavy yield loss and reduction in fibre content. Because of the rapid proliferation and easy dispersal of mites through wind, they spread to the neighbouring garden at faster rate causing seri-

Table 2. The extent of mite damage in indigenous coconut cultivars

Sl. No.	Genotype	Damage nuts in each category (%)					Total no. of nuts	Damaged nuts (%)
		1	2	3	4	5		
1	Andaman Ordinary	32.3	30.8	15.4	21.5	0.0	65	67.7 (55.37)
2	Andaman Dwarf	14.7	41.2	27.9	16.2	0.0	68	85.3 (67.45)
3	Andaman Giant	32.0	35.9	32.1	0.0	0.0	19	78.0 (62.0)
4	Andaman Nicobar	65.5	22.4	6.9	5.2	0.0	58	34.5 (35.97)
5	Andaman Ranguechan	56.2	25.9	14.3	3.6	0.0	39	43.8 (41.44)
6	Ayiramkachi	9.8	59.0	23.7	7.5	0.0	215	90.2 (71.76)
7	Baboor	41.9	23.6	12.6	16.9	5.0	112	58.0 (49.60)
8	Basanda	30.0	25.0	25.0	20.0	0.0	40	70.0 (56.79)
9	Bansahybrid	57.1	17.9	14.2	10.8	0.0	28	42.9 (40.92)
10	Benaulim	46.3	39.0	9.8	4.9	0.0	41	53.6 (47.06)
11	Bengal	77.5	15.0	2.5	5.0	0.0	40	22.5 (28.32)
12	Bombay	93.6	3.4	3.0	0.0	0.0	29	6.4 (14.65)
13	COD	91.2	4.4	4.4	0.0	0.0	126	8.8 (17.26)
14	CGD	34.0	21.3	21.3	23.4	0.0	47	65.9 (54.24)
15	Chingalpet	89.6	10.4	0.0	0.0	0.0	48	10.4 (18.81)
16	Gangabondam	70.7	6.3	10.4	7.1	5.5	113	29.2 (32.71)
17	Godavari	61.6	21.2	13.0	4.2	0.0	99	38.3 (38.23)
18	Gudiyatham	86.1	13.9	0.0	0.0	0.0	36	13.9 (21.89)
19	Indupali	80.5	7.8	5.2	6.5	0.0	77	19.5 (26.21)
20	Kappadam	44.2	13.5	13.5	21.5	7.3	52	55.8 (48.33)
21	Kaithathali	81.0	15.8	3.2	0.0	0.0	95	18.9 (25.71)
22	Kadiripadu	10.9	68.7	20.4	0.0	0.0	70	89.1 (70.71)
23	Komadan	44.7	38.5	13.4	3.4	0.0	61	55.1 (47.93)
24	Kulithalai	73.3	8.1	10.5	8.1	0.0	86	26.7 (31.11)
25	Laccadive Dwarf	76.9	23.1	0.0	0.0	0.0	26	23.0 (28.66)
26	Laccadive Micro	92.6	1.4	6.0	0.0	0.0	74	7.4 (15.79)
27	Laccadive Ordinary	22.6	42.1	21.0	9.8	4.5	133	77.4 (61.62)
28	Laccadive Small	20.0	75.6	4.4	0.0	0.0	45	80.0 (63.44)
29	Malrosapuram	39.4	25.3	25.3	10.0	0.0	38	60.5 (51.06)
30	Mysore	54.2	17.8	15.8	8.4	3.8	107	45.8 (42.59)
31	Nadora	61.4	18.6	5.7	14.3	0.0	70	38.6 (38.41)
32	Omalur	72.5	20.3	7.2	0.0	0.0	69	27.5 (31.63)
33	Pollachi	39.5	44.3	13.9	2.3	0.0	43	60.4 (51.0)
34	Selam	86.5	8.1	5.4	0.0	0.0	37	13.5 (21.56)
35	Spicata	90.5	5.0	3.7	0.8	0.0	120	9.5 (17.95)
36	Tanjore	59.6	23.0	15.5	1.9	0.0	52	40.4 (39.47)
37	WCT	27.7	59.8	10.4	2.1	0.0	94	72.3 (58.24)
	CD (0.05)							15.41

Table 3. The extent of mite damage in coconut hybrids

Sl. No.	Genotype	Damage nuts in each category (%)					Total no. of nuts	Damaged nuts (%)
		1	2	3	4	5		
1	Kerasree	74.4	18.3	7.3	0.0	0.0	82	25.6 (30.40)
2	Kerasoubhagya	72.9	12.2	9.5	5.4	0.0	148	27.0 (31.31)
3	Keraganga	70.6	16.6	7.9	4.9	0.0	102	29.4 (32.83)
4	Anandaganga	70.0	10.0	14.7	5.3	0.0	46	30.09 (33.21)
5	Lakshaganga	80.6	6.0	7.4	6.0	0.0	62	19.4 (26.13)
	CD (0.05)							11.70

ous threat to the economy of the coconut growers. To identify the susceptible and tolerant cultivars of coconut against mite incidence, the available coconut cultivars and hybrids at the Regional Agricultural Research Station, Pilicode, Kasaragod District, which was under natural infestation, were screened. The nuts present in each cultivar during June and July 2001 were observed for the damage. The nuts from three trees in each genotype were observed for the mite damage. The nuts from each tree were divided into five categories as given below according to visible surface damage, similar to the method of Moore *et al*. (1989).

1. Nuts with no mite damage (0%)
2. Nuts with superficial mite damage (1-10%)
3. Nuts with significant mite damage but not much smaller (11-25%)
4. Nuts with significant mite damage, smaller and with some distortion (26-50%)
5. Nuts very heavily attacked, very much reduced in size and often greatly distorted (50-100%)

The total number of nuts and the percentage of damaged nuts in each category were assessed. The presence or absence of mites was also recorded. The extent and influence of mite attack in each cultivar is shown in Table 1, 2 and 3.

Among the different exotic coconut cultivars screened for mite damages, Strait Settlement (Apricot) has recorded significantly minimum mite damage (8.3%) followed by Cochin China (9.9%), Fiji (12.9%) and New Guinea (16.7%). The genotype British Solomon Island has recorded the highest percentage of nut damage by mites followed by Lono (81.1%). The percentage of mite damage in hybrids ranged from 19.4 to 30.0. Lakshaganga recorded minimum incidence (19.4%) as compared to the maximum mite damage in Anandaganga (30.0%). The cultivars Ayiramkachi (90.2%) and Andaman Dwarf (85.3%) were more susceptible to mite damage among indigenous cultivars whereas genotypes Bombay (6.4%), Laccadive Micro (7.4%), Chowghat Orange Drawf (8.8%) and Spicata (9.5%) were less susceptible to mite attack.

In practice, it was found that most yield loss resulted from severe damage such as category 4 and 5 (Moore *et al.,* 1989). The present investigation indicated that most of the infested nuts were in the damage category of two and three. Even though Lakshaganga recorded lowest damage among hybrids, Kerasree was found to be better as the percentage of nuts damage by mite in the category of 4 and 5 was nil and the percentage of mite damage was only 25.4%. Among the exotic cultivars, Strait Settlement (Apricot), Cochin China, Fiji and in indigenous cultivars Bombay, Laccadive Micro, Chowghat Orange Dwarf were found to be tolerant to mite infestation. The observations were made under natural conditions. Therefore, detailed studies are required to breed coconut cultivars resistant to mite infestation.

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