# Record of soft scale (*Coccus hesperidium* Linn.) and its parasite (*Coccophagus ceroplastae* (Howard) on cardamom (*Elettaria cardamomum Maton*)

JASVIR SINGH, TAMIL SELVAN[1] & D KUMARESAN[1]

*Indian Cardamom Research Institute, Regional Station*
*Saklespur - 573 134, Karnataka, India.*

ABSTRACT

A soft scale (*Coccus hesperidium*) is reported to occur on cardamom (*Elettaria cardamomum*) for the first time from Saklespur, Karnataka, India. The pest was parasitised by a hymenopteran, *Coccophagus ceroplastae* in the field.

Key words: cardamom, *Coccophagus ceroplastae, Coccus hesperidium, Elettaria cardamomum*, parasite, scale insect.

Cardamom (*Elettaria cardamomum* Maton) is attacked by many species of scale insects among which *Saissetia coffeae* Wlk., *Mytilaspis* sp., *Diaspis* sp. and *Chinonaspis* sp. cause considerable damage (Siddappaji & Reddy 1973; Nair 1975; Nayar, Ananthakrishnan & David 1983; Narasimham 1987; Kumaresan, Regupathy & Baskaran 1988).

In April 1991, during the course of pest surveillance on cardamom at Indian Cardamom Research Institute, Saklespur, a patch of about 80 plants was severely infested by a soft scale *Coccus heperidium* Linn. (Coccidae : Homoptera). The pest infestation was observed on both the surfaces of leaves and pseudostems. The pest population was more on the upper leaf surface than the lower as reported by earlier workers on other scale insects (Siddapaji & Reddy 1973; Nair 1975) and was higher on the midrib (Figs. 1a and 1b). The population declined from the bottom to the top leaves; a similar declining trend in population on the pseudostem towards the top was also observed (Table 1). This is the first record of *C. hesperidium* on cardamom.

*C. hesperidium* has been reported on areca palm, tea (Nair 1975) and coconut (David & Kumaraswamy 1988). In general, scale infestation reduced the vigour of the plant due to continuous sucking of sap. A secondary effect of infestation was development of sooty mould on the plant surface interfering with photosynthesis. Severly attacked leaves turned yellow and dried up subsequently. Small brown ants also

[1]Indian Cardamom Research Institute, Myladumpara, Idukki - 685 553, Kerala, India.

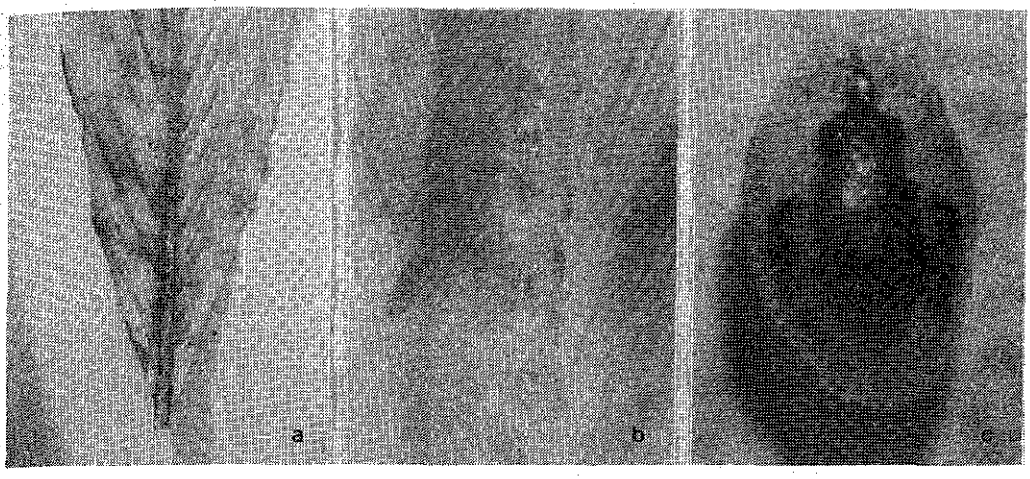


Fig. 1. Infestation of soft scale, *Coccus hesperidium* on cardamom
a. Infested cardamom leaf b. Enlarged view of (a) c. Parasitised scale

**Table 1. Distribution of soft scale, *Coccus hesperidium* on cardamom**

| Position of leaf from base | No. of scales on upper leaf surface | No. of scales on lower leaf surface | Total scales |
|---|---|---|---|
| First | 554.60 ± 14.37 | 408.60 ± 5.74 | 963.20 ± 17.26 |
| Second | 680.00 ± 7.86 | 529.80 ± 7.78 | 1209.80 ± 5.54 |
| Third | 447.80 ± 9.53 | 308.60 ± 8.51 | 756.40 ± 11.97 |
| Fourth | 324.00 ± 7.12 | 201.20 ± 5.25 | 525.20 ± 10.03 |
| Fifth | 344.20 ± 14.13 | 269.00 ± 6.35 | 613.20 ± 18.80 |
| Sixth | 309.60 ± 4.78 | 145.00 ± 13.24 | 454.60 ± 16.54 |
| Seventh | 235.00 ± 4.60 | 186.20 ± 3.83 | 421.20 ± 7.92 |
| Eighth | 163.80 ± 7.49 | 66.60 ± 3.78 | 230.40 ± 10.04 |
| Ninth | 116.80 ± 5.31 | 65.60 ± 2.35 | 181.40 ± 5.08 |
| Tenth | 65.20 ± 7.76 | 55.00 ± 1.64 | 120.20 ± 8.34 |
| Pseudostem | | | 1057.80 ± 79.56 |
| Total | | | 6549.40 ±100.31 |

Values indicate mean ±SD of 10 observations

visited the scales. A hymenopteran parasite, *Cocophagus ceroplastae* (Howard) (Aphelinidae) was also recorded on the scales killing about 30-40% of population. The parasitised scales became puffy and appeared dark in the centre and transparent at the margins (Fig. 1c). The adult parasite emerged by making a rough circular hole on the host scale.

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