Journal of Spices and Aromatic Crops 6 (1) : 55-56 (1997)

Miscellany

Is the cardamom whitefly *Kanakarajiella cardamomi* (David and Subramaniam) a vector of Nilgiri Necrosis Virus disease of cardamom *Elettaria cardamomum* Maton?

The vector and mode of transmission of the Nilgiri Necrosis Virus (NNV) disease affecting cardamom, *Elettaria cardamomum* Maton is unknown so far. More than 70 whitefly borne viral diseases have been reported on cultivated plants and weeds from tropical and subtropical regions (Cohen 1990). Muniappa (1980) in his critical review listed 65 viral diseases transmitted by whiteflies. The present studies were carried out to determine whether the cardamom whitefly, *Kanakarajiella cardamomi* (David and Subramaniam), an important pest on cardamom, acts as a vector of the NNV disease.

Cardamom seedlings with characteristic symptoms of NNV disease were collected from Munnar, Idukki District (Kerala, India) and maintained under insect - free caged conditions at the Indian Cardamom Research Institute, Myladumpara, Kerala. A culture of virus-free *K. cardamomi* was also maintained on 'Mysore' seedlings under laboratory conditions separately. Infecting assays were performed on 12-18 month old 'Mysore' seedlings by the method adopted by Cohen *et al.* (1989). Twenty five non viruliferous adult whiteflies were starved for 1 h and allowed to feed on NNV diseased plants under caged conditions. After 24 h and 48 h of acquisition access period, these whiteflies were transferred to the second leaf of healthy seedlings for 24 h and 48 h of inoculation access period. Male and female adults were tested separately. The experiment was replicated thrice, with each replication having 15 plants. Inoculated plants were maintained under insect-free caged conditions and observed at weekly intervals for NNV symptoms up to 120 days after inoculation.

In the present study with 24 h and 48 h of acquisition feeding and 24 th and 48 th of transmission feeding, no transmission was observed up to 120 days. This warrants elaborate studies with varying periods of acquisition and transmission access using different stages of *K. cardamomi* to rule out its role as a vector of NNV disease on cardamom.

Acknowledgements

Thanks are due to the Indian Council of Agricultural Research, New Delhi for the financial support for conducting the study. Thanks are also due to the authorities of Spices Board, Cochin and the Indian Cardamom Research Insti-

tute, Myladumpara, Kerala for encouragement and facilities provided.

References

Cohen S 1990 Epidemiology of whitefly transmitted viruses. In : Gerling D (Ed.) Whiteflies : Their Bionomics, Pest Status and Management (pp. 211-225). Intercept Ltd., United Kingdom.

Cohen S, Duffus J E & Liu H Y 1989 Acquisition, interference and retention of cucurbit leaf curl viruses. Phytopathology 79 : 109-113.

Muniappa V 1980 Whiteflies. In : Harris K F & Maramorosch K (Eds.) Vectors of Plant Pathogens (pp. 39-85). Academic Press, New York.

(S SELVAKUMARAN[1], B VASANTHARAJ DAVID & D KUMARESAN[2], Jai Research Foundation, P B No. 30, GIDC, Vapi - 396 195, Gujarat, India. [1]Indian Institute of Spices Research, Marikunnu, Calicut - 673 012, Kerala, India. [2]Regional Research Station, Indian Cardamom Research Institute, Perumparai - 624 212, Tamil Nadu, India.)