



Deutscher Tropentag, October 8-10, 2003, Göttingen

“Technological and Institutional Innovations
for Sustainable Rural Development”

Tetranychus evansi in Africa — Status, Distribution, Damage and Control Options

MARKUS KNAPP¹, IVY G. M. SAUNYAMA², IBRAHIMA SARR¹, GILBERTO J. DE MORAES³

¹*International Centre of Insect Physiology and Ecology (ICIPE), Kenya*

²*Plant Protection Research Institute (PPRI), Zimbabwe*

³*University of Sao Paulo, Brazil*

Abstract

The tomato red spider mite *Tetranychus evansi* BAKER and PRITCHARD is of South American origin and was found for the first time in continental Africa on tobacco in Zimbabwe in 1979. It is specialized on Solanaceae and is currently the most important dry season pest of tomatoes in southern Africa. However, it has never been identified correctly from this host until 1998. Currently it is known to occur in South Africa, Namibia, Mozambique, Zimbabwe, Zambia, Malawi, Kenya, Democratic Republic of Congo, Somalia, Morocco and Tunisia. Densities of more than 1500 motile *T. evansi* on the three terminal leaflets of tomato leaves have been found in experimental fields in Zimbabwe and yield losses of up to 90% have been recorded from field trials. Most indigenous natural enemies do not feed on *T. evansi*. Control with acaricides often fails in African small-holder environments due to the lack of proper equipment and application techniques. Field experiments in Zimbabwe showed that pruning and staking of tomatoes increases the efficiency of acaricide applications, reduces mite populations and significantly increases tomato yields. A second strategy to control *T. evansi* is classical biological control. Surveys on natural enemies have been started in the mite's probable area of origin in north-eastern Brazil in 2000. So far, 14 species of predatory mites and a predatory gall midge (*Cecidomyiidae*) have been identified as potential candidates for introductions into Africa. Investigations into the biology of several candidates are currently ongoing and the first releases in Africa are planned to start in 2005. The third control strategy is host plant resistance. Laboratory screening of more than 280 accessions of cultivated tomato and its wild relatives has revealed 13 accessions where mite reproduction is greatly reduced. Investigations on resistance mechanisms and field trials to confirm the resistance are currently in progress.

Keywords: Africa, biological control, integrated pest management, spider mites, *Tetranychus evansi*