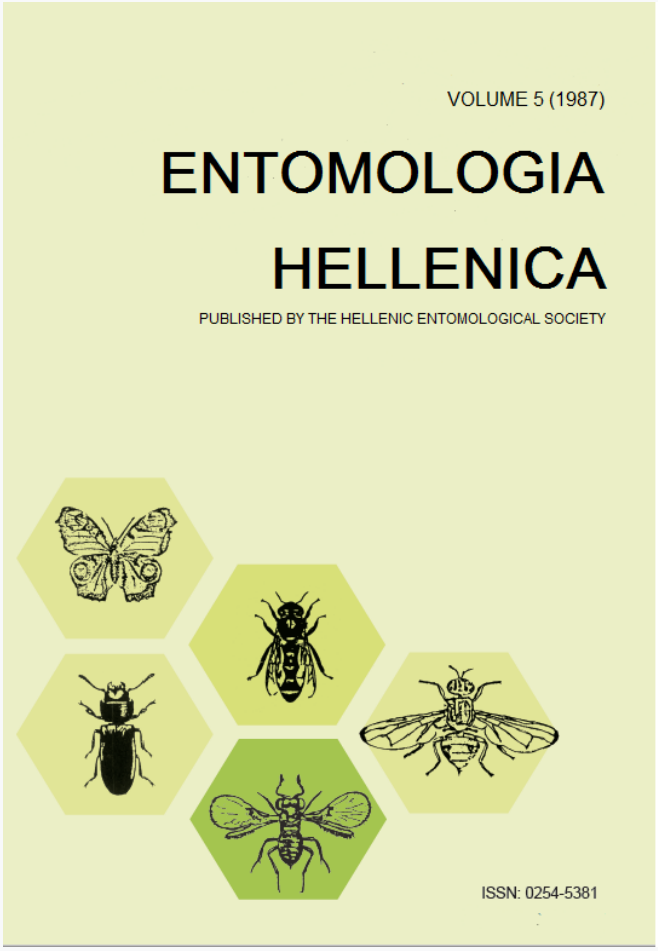
ENTOMOLOGIA HELLENICA

Vol 5 (1987)



First record of Polyphagotarsonemus latus (Banks 1904) (Acari: Tarsonemidae) on greenhouse peppers in Crete

N.E. Roditakis, N.I. Drossos

doi: 10.12681/eh.13945

To cite this article:

Roditakis N., & Drossos N. (1987). First record of Polyphagotarsonemus latus (Banks 1904) (Acari: Tarsonemidae) on greenhouse peppers in Crete. *ENTOMOLOGIA HELLENICA*, *5*, 35–36. https://doi.org/10.12681/eh.13945

ENTOMOLOGIA HELLENICA 5 (1987): 35-36

First Record of *Polyphagotarsonemus latus* (Banks 1904) (Acari: Tarsonemidae) on Greenhouse Peppers in Crete[1]

N.E. RODITAKIS and
N.I. DROSSOS[2]

Plant Protection Institute,
711 10 Heraklion Crete, Greece

The broad mite, *Polyphagotarsonemus latus* Banks (Acari: Tarsonemidae), was first noticed on greenhouse pepper cv Cleopatra and Sonar in Ierapetra (Southeastern Crete) in 1984. During 1984 there were scattered mite infestations in a few greenhouses but in the following years it has become an increasingly important pest of peppers. The mite has been also found on cucumber cv Cnossos, aubergine cv Flaska and *Solanum aviculare* (indigenous of Amazonios) in the greenhouses of the Ierapetra Experimental Station. It attacks the growing points, young foliage, stem flowers and fruits. The growing points and bud are distorted (Fig. 1b), the young leaf margins down curl, the apical leaves crinkle, the leaf veins fuse and distort (Fig. 1d) and the color changes to dark green, the fruits and stem crack and turn russet, mis-shape resembling like a fruit or stem scab (Fig. 1c) and finally the small leaves and flowers fall off. Severely affected plants have little or no young growth, remain stunt and all fruitlets are aborted. The general look of the infested plants is similar to those affected by hormone weedkiller (Gellatley 1969). Affected plants could not recover easily and the symptoms persisted for many weeks in spite of the acaricide treatments applied by the growers. In an artificial infestation of young pepper plants cv Sonar by 100-200 individuals, the symptoms of broad mite damage appeared in eight to ten days under growth chamber conditions (24±0.5°C, 60±5% R.H., 12.000 Lux for 16 hours daily).

In Greece, the broad mite was first recorded on cotton leaves in 1969 (Hatzinikolis 1970) and later on citrus trees (Hatzinikolis 1985). In Britain, it

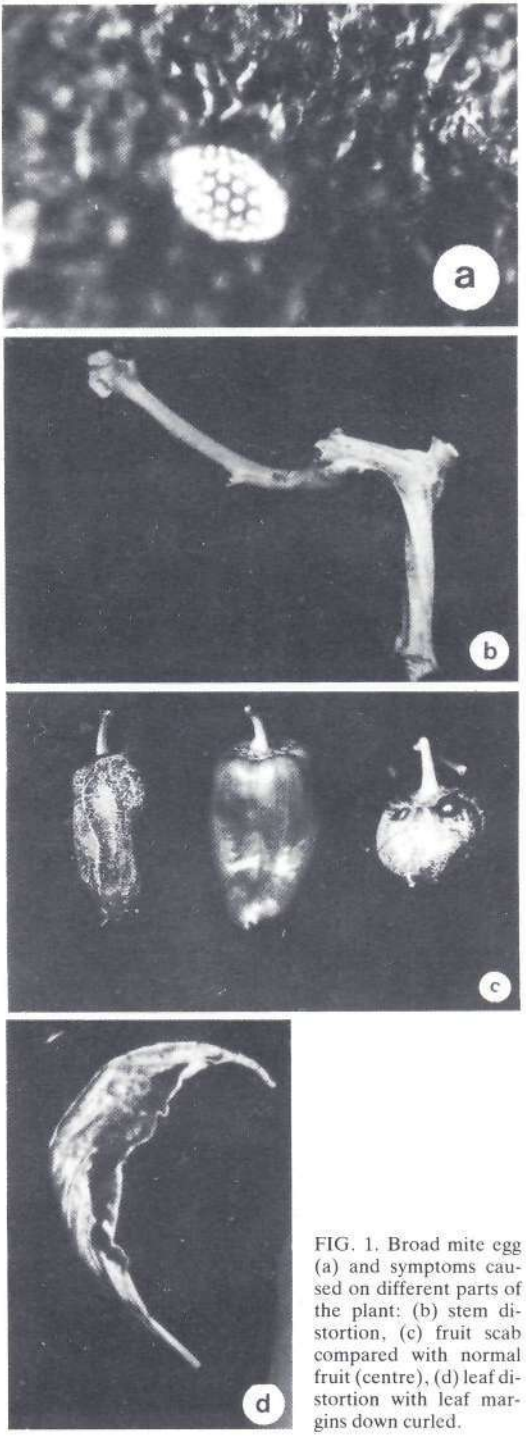


FIG. 1. Broad mite egg (a) and symptoms caused on different parts of the plant: (b) stem distortion, (c) fruit scab compared with normal fruit (centre), (d) leaf distortion with leaf margins down curled.

[1]Received for publication March 4, 1987.

[2]Agricultural Experimental Station, 722 00 Ierapetra Crete, Greece.

causes serious problems since 1978 (Cross 1979). It has been also noticed in several other countries of Europe (Laffi 1982, Hugon 1983, Martin 1983). According to Basset (1981) the spread of *P. latus* in many greenhouse plants in Britain was caused by the absence of acaricide treatments in greenhouses where biological control against the two spotted spider mite *Tetranychus urticae* was applied and the predator *Phytoseilus persimilis* was introduced by French bean leaves which was a recorded host of broad mite (Gellatley 1969).

The female longevity varies between 7-18 days depending mainly on temperature. The mean number of eggs/female is 40-50 (Martin 1983, Laffi 1982, Brown and Jones 1983). According to Hugon (1983) the life cycle of broad mite is completed in 441, 205 and 98 hours at 14, 24 and 30°C, respectively. The developmental rate of various stages of the mite increased with the temperature but declined at about 35°C (Li Lung-Shu et al. 1983). The broad mite has been recorded on a wide range of hosts: tea plant, beans, tomatoes, cucumber, peppers, aubergines, citrus, zerbera, fuchsia, jasminum, magnolia, cotton, jute, coffee, avocado etc. (Gellatley 1969, Hatzinikolis 1970, 1985, Ciampolini et al. 1979, Kabbir 1979, Cross 1979, Laffi 1982, Brown and Jones 1983, Li Lung-Shu et al. 1985).

Acknowledgment

I wish to thank Dr. N.E. Malathrakis for useful suggestions on the manuscript, Dr. Macfarlane for the confirmation of the identification and E. Papamatheaki for typing.

References

Basset, P. 1981. Observations on broad mite *Polyphagotarsonemus latus* (Acarina: Tarsonemidae) attacking cucumber. Proceedings 1981. B.C.P.C. 2: 99-102.

Brown, R.D. and V.P. Jones. 1983. The broad mite on lemons in southern California. California Agriculture 38: 21-22.

Ciampolini, M., P. Rota and S. Tumino. 1979. Un nuovo pericoloso acaro delle Solanaceae in serra. Inform. Agrario 46: 8075-8077.

Cross, J.V. 1979. Broad mite *Polyphagotarsonemus latus* (Banks), causing damage to peppers. Plant Path. 28:55.

Gellatley, J. C. 1969. The broad mite *Hemitarsonemus latus* Banks (Acarina: Tarsonemidae). The Agric. Gaz. of New South Wales 80: 96-97.

Hatzinikolis, E. N. 1970. Neuf especes d'acariens signalées pour la premier fois en Grèce. Annals Phytopath. Inst. Benaki 9: 238-241.

Hatzinikolis, E. N. 1985. Citrus mites and their economic importance in Crete. First conference on tree crops, Chania (Kriti), Abstracts p. 54.

Hugon, R. 1983. Biologie et ecologie de *Polyphagotarsonemus latus* (Banks) ravageur sur agrumes aux Antilles. Fruits 9: 635-646.

Kabbir, A.K.M.F. 1979. Bioecology and behaviour of yellow jute mite. Recent Advances in Acarology 1: 519-523.

Laffi, F. 1982. Presenza di *Polyphagotarsonemus latus* (Banks) su semenzai di peperone in Emilia - Rom. Infor. Fitopath. 11: 55-57.

Li Lung-Shu, Li Yun-Rui and Ru Gen-Sheng. 1985. The effect of temperature and humidity on the growth and development of the broad mite *Polyphagotarsonemus latus*. Acta Entom. Sinica 28: 181-187 (English summary).

Martin, M. 1983. Resumen de los primeros estudios sobre biologia, evolution y control de arana blanca (*Polyphagotarsonemus latus*). Bol. Inform. 6: 101-108.

KEY WORDS: *Polyphagotarsonemus latus*, Tarsonemidae, Greenhouse peppers

Πρώτη Διαπίστωση του *Polyphagotarsonemus latus* (Banks 1904) (Acari: Tarsonemidae) στην Πιπεριά Θερμοκηπίου στην Κρήτη

Ν. Ε. ΡΟΔΙΤΑΚΗΣ και Ν.Ι. ΔΡΟΣΣΟΣ

Ινστιτούτο Προστασίας Φυτών Ηρακλείου, 711 10 Ηράκλειο και Σταθμός Γεωργικής Έρευνας Ιεράπετρας, 722 10 Ιεράπετρα, Κρήτης

ΠΕΡΙΛΗΨΗ

Το μικροσκοπικό άκαρι *Polyphagotarsonemus latus* Banks σημειώθηκε για πρώτη φορά το 1984 στην πιπεριά θερμοκηπίου στην περιοχή της Ιεράπετρας. Στην αρχή παρατηρήθηκε σε σποραδικές κηλίδες και μέχρι το 1986 εξαπλώθηκε σε όλα τα θερμοκήπια της πιπεριάς προκαλώντας σημαντικές ζημιές. Το άκαρι αυτό αναφέρθηκε για πρώτη φορά στην Ελλάδα από το Χατζηνικολή σε φύλλα βαμβακιού (1969) και στα ξυνά (1985). Προσβάλλει τις αναπτυσσόμενες κορυφές, νεαρά φύλλα, άνθη και καρπούς προκαλώντας τα παρακάτω συμπτώματα: 1. στο στέλεχος παραμόρφωση, αποχρωματισμό γκρι ή καφέ και εσχάρωση, 2. στους καρπούς παραμόρφωση και εσχάρωση, 3. στα νεαρά φύλλα τα συμπτώματα συγχέονται με εκείνα της επίδρασης ορμονικών ζιζανιοκτόνων και 4. στα άνθη προκαλεί ανθόρροια. Τα προσβεβλημένα φυτά δύσκολα αναλαμβάνουν παρά τους επανειλημμένους ψεκασμούς με ακαρεοκτόνα.