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A citrus pest in the East Mediterranean region of Turkey, *Polyphagotarsonemus latus* (Banks) (Acarina, Tarsonemidae)

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Summary

The broad mite ***Polyphagotarsonemus latus*** was detected on citrus seedlings grown in greenhouses and citrus orchards in the Çukurova region in Turkey in 1992. It was later observed on several other host plants throughout the region. In this study its description, host plants and observation of the damage caused by ***P. latus*** were given.

Introduction

The broad mite, ***Polyphagotarsonemus latus*** (Banks) also known as the yellow tea mite and the tropical mite is distributed in the field throughout the tropics and in greenhouses in temperate regions on a wide range of agricultural crops, ornamentals, and wild plants (Jeppson et al., 1975). It is reported as a pest of cotton, tea, rubber, citrus, tobacco, potato, bean, pepper, gerbera, dahlia, zinnia and chrysanthemum (Hambleto, 1938, cited in Jeppson et al., 1975). Brown and Jones (1983), reported tea, cotton, coffee, jute, chiles, tomato and avacado as host plants, but in temperate and subtropical areas such as California, it is usually found attacking only greenhouse plants.

In Turkey, ***P. latus*** was first detected on protected crops in Antalya province (Tunç and Göçmen, 1994). In the East Mediterranean region ***P. latus*** was first on the young citrus trees in the greenhouses in 1992. Later it was observed on citrus seedlings and orchards thourghout the region. In this study the description of the pest, host plants and type of damage are given.

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Materials and Methods

In both young citrus trees and citrus orchards, a new mite was detected and the identified as ***P. latus*** by Prof T. Jones* in 1992. Since the first determination of ***P. latus*** studies were conducted on distribution, host plants and type of damage of this pest in the East Mediterranean region of Turkey.

Furthermore the specimens collected from different locations were prepared on slides and morphological characteristics were drawn under the binoculer microscope.

Results

Description

P. latus is so small that it is only possible to detect it by mean of a hand lens. The eggs of the broad mite are oval and elongate, the upper surface is studded with longitudinal rows of tubercles (Fig. 1 a) that have high refractive index and are white, in contrast to the general body of the egg, which is transparent. Lower surface of the eggs are flat and in 71 ± 1.2 µm length.

Newly hatched larva have 3 pairs of legs and they have white strip which is started from head to at the end of abdomen on the dorsal side (Fig. 1 b). The larvae resemble the adult in appearance, the nymphs remain enclosed within the skins of the quiescent larvae until the adult is formed (Fig. 1 c). That means nymphal stages are not mobile, only larvae and adult stages are mobile.

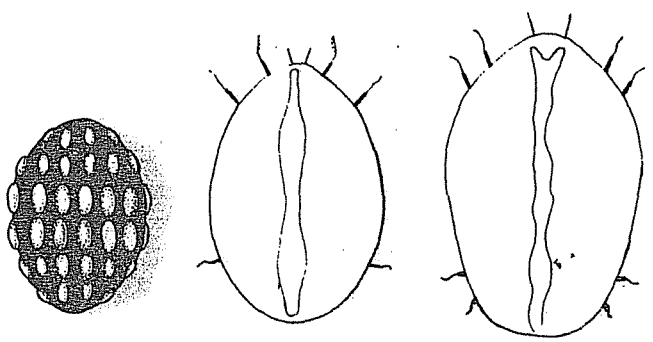

Fig. 1. Eggs (a), nymph (b) and adult (c) of ***Polyphagotarsonemus latus***

Young females become round shape and their size reach to 179 ± 3.4 µm in length and 86 ± 1.9 µm in width. They have 4 pair of legs and they also have white band on the dorsal side of body (Fig. 2). The adult female is large, oval and broad, yellowish or light amber colour. The adult male is short, broad, tapers at the posterior

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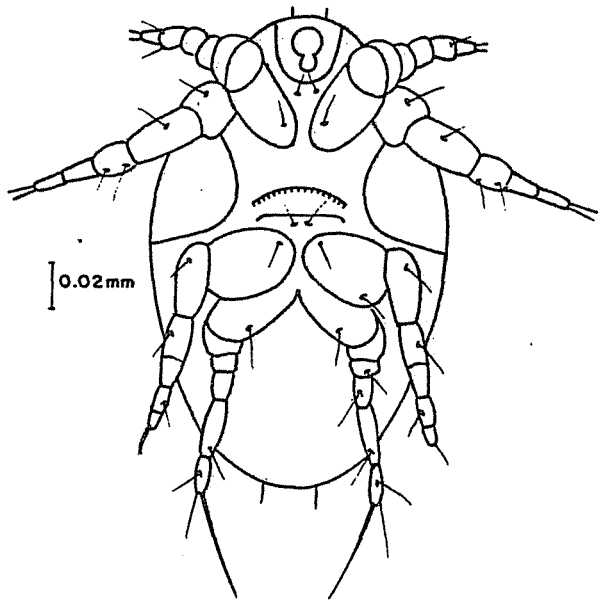

Fig. 2. ***Polyphagotarsonemus latus,*** ventral view of female

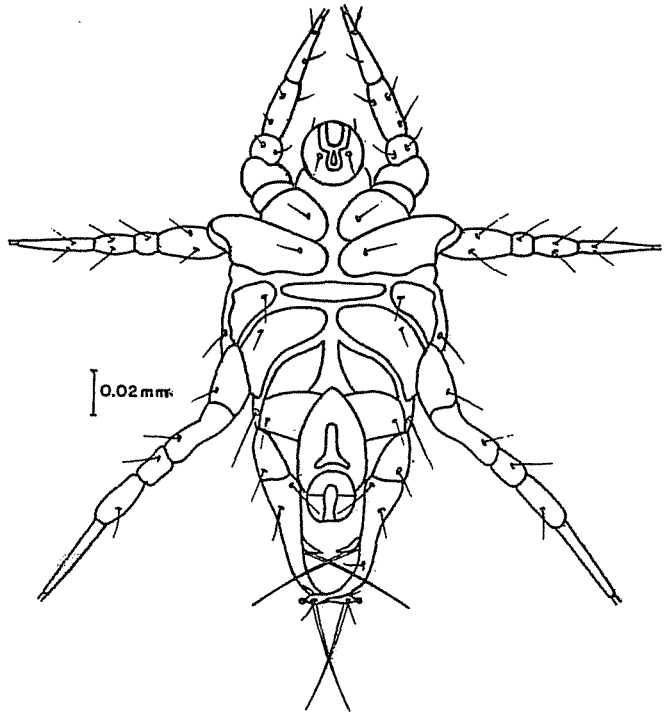

Fig. 3. ***Polyphagotarsonemus latus,*** ventral view of male

and, has long legs. Males are in 120 ± 1.6 µm length and 69 ± 1.5 µm width, and in whitish-pink colour. At the apex, on the ventral side of the male a suckerlike organ used to hold and carry the female pupa (Fig. 3).

Distribution, host plants and damage

According to the survey results, ***P. latus*** is widely distributed in the East Mediterranean region of Turkey. During the studies the host plant range is also examined. Citrus (orange, lemon, grapefruit, and mandarin), vine, mulberry, cotton, rubber, peach, pumpkin, cucumber, tomato, bean, and cabbage were determined as host plants of this pest. ***P. latus*** was especially widespread on citrus in Adana, İçel and Hatay. As a result of early feeding on fruits, the surface tissue scarred, and craks during the fruit grows which shows a typical pattern. The broad mite also feed on young, expanding leaves causing them to curl and rossettelike growth. In dense populations of the pest resulted in flower drop and fruit fall.

Discussion

The most important damage manner occured during the spring time on citrus in both qualitatively and quantitatively. It is a new species and no study were done on ***P. latus*** in Turkey. The optimum developing temperature for ***P. latus*** is 20-22°C (Brown and Jones, 1983). In the East Mediterranean region the ecological conditions are suitable for ***P. latus*** between march and may, so during this time the damage will be important on citrus. Therefore, to judge the pest status of ***P. latus*** further studies should be done on the biology, ecology, plant-pest relations and economic threshold.

Acknowledgement

The authors wish to thank Prof. T. Jones for identification of the species.

Özet

Türkiye'nin Doğu Akdeniz Bölgesi'nde yeni bir turunçgil zararlısı, *Polyphagotarsonemus latus* (Banks) (Acarina, Tarsonemidae)

Polyphagotarsonemus latus Doğu Akdeniz Bölgesi'nde 1992 yılında seralardaki turunçgil fidanlarında ve turunçgil bahçelerinde saptanmıştır. Zararlının tüm Doğu Akdeniz Bölgesi turunçgil bahçelerinde bulunduğu belirlenmiş olup, zararlının tanımı ve konukçuları ile zarar şekli üzerindeki gözlemler verilmiştir.

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