

# Phytophagous mites on date palms in Israel.

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## ACARIENS PHYTOPHAGES SUR PALMIERS-DATTIERS EN ISRAEL

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RESUME - Trois espèces de Tenuipalpidae et deux espèces de Tetranychidae ont été trouvées sur palmiers-dattiers en Israël. Les fruits étaient seulement infestés par des Tetranychidae. *Eutetranychus palmatus* ATTIAH, quoique largement répandu, n'a pas causé de dégâts discernables sur les fruits. *Oligonychus tylos* BAKER et PRITCHARD endommagea sérieusement les dattes d'une palmeraie mais a été contrôlé par des acaricides. *Oligonychus afrasiaticus* Mc GREGOR, fléau bien connu des palmiers-dattiers, a été trouvé dans plusieurs palmeraies, infestant des graminées mais non les arbres.

## INTRODUCTION

Dates are among the major crops produced in the inner, hotter and dryer parts of Israel. They may be attacked by several insect pests which are usually held in check by integrated control methods (KEHAT, SWIRSKI, BLUMBERG et GREENBERG, 1974). Mites (Acari), known to affect dates in other parts of the world, were not hitherto recorded from this crop in Israel. More recently, however, complaints were received concerning mite injury to dates, whose skins became hard and covered with webs. A survey and some observations on these pests were consequently undertaken. Five species of phytophagous mites were identified on the trees, and a sixth, known as a major pest of dates abroad, was found only on gramineous plants in date palm groves.

## TENUIPALPIDAE

### *Raoiella indica* HIRST.

ZAHER, Wafa et YOUSEF (1969), regarded this species as a pest of date palms in Egypt. They reported that infestation symptoms consisted of dark, reddish blotches on the leaves. The mite developed the year round, a single generation being raised in 3-4 weeks at 23-28°C.

The mite was common on palms growing near the Dead Sea and in the upper Arava Valley. At one plantation egg deposition took place only within colonies of the *Parlatoria* date scale, *Parlatoria blanchardi* (TARGIONI-TOZZETTI) (Homoptera : Diaspididae). Such eggs were found in 240 out of 398 (60.3 %) scale colonies examined, most (82 %) of the combined colonies occurring on the lower leaf surfaces. Practically no eggs were seen on these leaves elsewhere. We cannot offer any explanation for this phenomenon, nor did we see any damage clearly attributable to *R. indica*.

### *Phyllozetetranychus aegyptiacus* SAYED.

This species was also regarded by ZAHER et al. (1969), as a pest of date palms. Its damage was described as blotches

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with a dirty whitish appearance, which resulted from the mites' pale fan-shaped dorsal setae. Development of this mite occurred throughout the year, 31 days being required for completing a single generation at 25-28°C.

It was common on date palms all along the Arava Valley ; no associated injury was ever seen.

*Tenuipalpus pareriphyoides* MEYER and GERSON.

This species has so far only been found at En Yahav, about 150 km north of the Red Sea. It closely resembles another tenuipalpid which infests date palms, namely *T. eriophyoides* BAKER, differing from it by a series of subtle but consistent characters (MEYER et GERSON, 1981).

### TETRANYCHIDAE

*Eutetranychus palmatus* ATTIAH.

Formerly this spider mite had only been known from Egypt, whence it was found on date palms (ATTIAH, 1967). It was common on these as well as other Palmae (*Hyphaene*, *Washingtonia*) all over the Arava Valley, also infesting ornamental palms in the town of Elat. The mites developed throughout the year on leaves, moving onto fruits during June-July. Mite feeding on dates produced some exudates which later became covered by dust. Shed skins (molts) were found on infested fruits, but no webs, as *E. palmatus* does not spin. Very little economic damage has so far been attributed to this mite, notwithstanding its presence and feeding on date fruits.

*Oligonychus afrasiaticus* Mc GREGOR .

An occasional serious pest of dates, *O. afrasiaticus* is known from various African and Middle Eastern countries (CARPENTER et ELMER, 1978). It has been reported to feed on leaves and fruit and to overwinter in sheltered tree parts. Infestation of dates was stated to take place during June-July. Affected fruits become reddish-brown and their skins display numerous minute cracks which produce gum-like exudations. The mites, which remain active even at 45°C, spin copious amounts of whitish webs in which dust accumulates (GHARIB, 1967 ; HUSSAIN, 1969).

This mite was often collected from Bermuda grass, *Cynodon dactylon*, growing in date palm groves in the Arava region, as well as elsewhere. *O. afrasiaticus* was also obtained from another grass, *Imperata cylindrica*, but it has not yet been found on date palms.

*Oligonychus tylus* BAKER and PRITCHARD.

Hitherto this mite was only known from Mauritius, where it was collected from *Panicum maximum* (Gramineae) (BAKER et PRITCHARD, 1960). In 1979 subeconomic infestations of *O. tylus* were found at one grove near the town of Elat. The infestation grew during the subsequent season, and about four tons of unmarketable dates (mostly



Figure 1. Dates fruits damaged by the mite *Oligonychus tylus*. Note shrivelled and discolored skins.

of the variety Deglet Noor) had to be destroyed. Affected fruits became hard, with shrivelled, cracked skins (figure 1) which were covered by thin webs.

Regular observations conducted in 1981 showed that mites began to occur on the fruits during June. Infestation started near the calyx, the greyish webbing (in which mites live) then slowly spreading and gradually enveloping entire fruit bunches. No natural enemies were seen on these affected tree parts, and chemical control had to be considered. A single spray of Dicofol (Kelthane) (0.15 %), combined with Tetradifon (Tedion) (0.15%), was applied exclusively on infested fruit bunches during late July. This spray completely controlled the mite and eliminated its damage for the entire season.

*O. tylus* has not so far been found on any other plants in or around the groves, nor is any information available as to its mode of overwintering.

### DISCUSSION

The appearance of *E. palmatus* and *O. tylus* on dates is probably of recent occurrence, as neither species was seen during the studies conducted and summarized by KEHAT et al. (1974). Judging from its limited distribution, *E. palmatus* is probably on indigenous species whose populations may be increasing, possibly encouraged by access to irrigated palms (commercial and ornamental) grown in southern Israel. The source of *O. tylus* is more problematic. Its current known

disjunct distribution suggests that this species may actually be masquerading under another name(s) in other countries. Work to determine its mode of overwintering is underway.

The failure of *O. afrasiaticus* to attack local date palms is probably only a respite. Its populations may be held in check by an as yet undetermined biotic or abiotic factor and consequently they do not build up to numbers large enough to require other hosts. Another possibility, that locally-grown date varieties are immune to mite attack, is rather remote. The distribution and abundance of *O. afrasiaticus* on *C. dactylon* in Israel suggests that it has been here for many years. The possibility that this mite could

become a serious pest of date palms must therefore be considered.

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#### BIBLIOGRAPHIE

- ATTIAH (H.H.). 1967.  
The genus *Eutetranychus* in U.A.R., with descriptions of three new species (*Acarina* : *Tetranychidae*).  
*Bull. Soc. Entomol. Egypte*, 51, 11-16.
- BAKER (E.W.) et PRITCHARD (E.A.). 1960.  
The tetranychoid mites of Africa.  
*Hilgardia*, 29, 455-574.
- CARPENTER (J.B.) et ELMER (H.S.). 1978.  
Pests and diseases of the date palm.  
*U.S.D.A. Agric. Handb.*, n° 527.
- GHARIB (A.). 1967.  
*Paratetranychus (oligonychus) afrasiaticus* (Mc GREGOR) (*Tetranychidae*).  
*Entomol. Phytopath. Appl. (Teheran)*, 26, 27-30 (French); 44-53 (Iranian).
- HUSSAIN (A.A.). 1969.  
Biology of *Paratetranychus afrasiaticus* Mc GR., infesting date palms in Iraq.  
*Bull. Soc. Entomol. Egypte*, 53, 221-225.
- KEHAT (M.), SWIRSKI (E.), BLUMBERG (D.) et GREENBERG (S.). 1974.  
Integrated control of date palm pests in Israel.  
*Phytoparasitica*, 2, 141-149.
- MEYER (M.K.P. SMITH) et GERSON (U.). 1981.  
Some false spider mites (*Prostigmata* : *Tenuipalpidae*) from Israel.  
*Israel J. Entomol.*, 15.
- ZAHER (M.A.), WAFI (A.K.) et YOUSEF (A.A.). 1969.  
Biological studies on *Raoiella indica* HIRST and *Phyllotetranychus aegyptiacus* SAYED infesting date palm trees in U.A.R. (*Acarina* - *Tenuipalpidae*).  
*Z. angew. Entomol.*, 63, 406-411.



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