SUMMARY

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1- During the survey study, 28 species and 25 genera of mites belonging to 14 families were collected from date palm trees at different governorates of lower and upper Egypt .

2- The mites are classified according to their habits into three categories :

(a)- The phytophagous mites were: *Oligonychus afrasiaticus* McGregor, *Eutetranychus orientalis* (Klein) (*Tetranychidae*), P*hyllotetranychus aegypticus* Sayed, *Raoiella indica* Hirst., *Brevipalpus phoenicis, (Tenuipalpidea), Mackiella phoenicis* Keifer and *Retracrus johnstoni* Keifer (Eriophyidae).

(b)- The predaceous mites were: *Phytoseius plumifer, Amblyseius swirskii* (A-H), *Amblyseius cydnodactylon* Shehata and Zaher (Phytoseiidae), *Agistemus exsertus* Gonzalez (stigmaeidae), *Saniosulus nudus* (Eupalopsellidae) and *Cheletogenes ornatus* Summers (Cheyletidae) and *Hemisarcoptes malus* Shimer (Hemisarcoptidae).

(c)- Mites of uncertain feeding habits were: *Tarsonemus stifer* Ewing, *Tarsonemus smithi* Ewing, *Tarsonemus noxius* Humic. (Tarsonemidae), *Tydeus californicus* (Banks), *Pronematus ubiquitus* (McGregor) (Tydeidae), *Tyrophagous putrescentiae* McGregor, *Calogylyphus redikorzevi* (Zach), *Rhizoglyphus robini* Claparede (Acaridae), *Heterodispus elongatus* Jac. (Scutacaridae),

Brennandania silvestris and *Bakerdania pectiniger* Mahunka (Microdispidae); *Siculobata sicula* Grandjean, *Zygoribatula sp.* and *Scheloribates* sp (Oribatidae).

3- The population fluctuation of the eriophyid mite, *Mackiella phoenicis* Keizer, the tenuipalpid mite, *Raoiella indica* Hirst, *and Phyllotetranychus aegypticus* sayed; the tetranychid mite Oliganychus afrasiaticus McGregor and the tydied mite *Tydeus californicus* Banks were studied.

4- The population fluctuation of the eriophyid mite *M. phoenicis* has one annual peak of abundance in september during June 1999 to May 2001.

5- A significant positive correlation was found among the monthly average temperature (33.7 to 33.9°C) and also with the monthly average relative humidity (80 to 85 % R.H) for abundance peak of *M. phoenicis*.

6-The population fluctuation of the tenuipalpid mite *R. indice* has one annual peak of seasonal abundance in August (185 and 230 motile stages of mites) during two successive years.

7- A positive correlation existed among both the average temperature and the relative humidity with the population of the tenuipalpid mite, *R.indicae*.

8- *R .indicae* eggs have one annual peak of abundance in August during two successive years of study.

9- The population fluctuation of *O. afrasiaticus* and its eggs have one annual peak of abundance in October.

10- The average monthly temperature and relative humidity were positively affecting with the population of *O. afrasiaticus* and its eggs.

11- The populalion fluctuation of *P. aegypticus* and its eggs have two annual peaks of abundance in June and October during the two successive years of the study.

12- The population of *P. aegyptiacus* and its eggs were positively correlated with temperature and the relative humidity during two successive years.

13-The population fluctuation of eggs and motile stages of *T. Californicus* has one annual peak of seasonal abundance in October during the two successive years.

14-A sigificant positive correlation was found between temperature and relative humidity with the population density and the eggs of *T. californicus* .

15-The biology of *O. afrasiaticus* was investigated at temperature of 27 ± 2°C and relative humidity 75 ± 2%.

16- The larval and deutonymphal periods were longer than the protonymphal stage of *O. afrasiaticus*.

17-The total mean durations of egg and immature stages (developmental time) were 12.36 and 11.1 days for females and males, respectively.

18-The pre-oviposition, oviposition and post- oviposition periods were 2.5,20-60 and 3.80 days for females.

19-The generation time for females of *O. afrasiaticus* was 14.86 days. The mean total fecundity (eggs/ female) were 22.50 with a daily rate of 1-48 eggs.

20- Effect of the biocide (vertimec 1.8%) compared with acaricide, kelthane and kz oil against *O. afrasiaticus* under field conditions showed that the biocide vertimec induced almost the same percent reduction over 90% as the recommended acaricide kelthane. Therefore, the biocide vertimec could be used instead of these acaricide for its safety to evironment and beneficial species, No phytotoxicity was observed with any treatments.