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EFFICIENCY OF SOME INSECTICIDES IN CONTROLLING THE CHAFF SCALE INSECT, *Parlatoria pergandii* (COMSTOCK) INFESTED THE ORNAMENTAL PLANT, *Yucca aloifolia,* (LILIACEAE) AT CAIRO GOVERNORATE, EGYPT.

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ABSTRACT

An experiment was carried out at Kasr El Kobba, Cairo in Egypt on June 27, th , 2001 to evaluate the effect of some insecticides on the chaff scale insect, *Parlatoria pergandii* (Comstock) infested Yuka plant, *Yucca aloifolia* (Liliaceae). The most effective scalicdes on this pest was Sumicidin 0.05%, followed by Masrona oil 1.5% while the least effective scalicides was Masedine (Malathion) 0.250%. The percentages of mortality of the three scalicides in the whole experiment were 77.04, 71.83% and 47.62%, respectively.

Keywords: Scaleinsect, *Parlatoria pergandii*, chemical control, ornamental plant, Egypt.

INTRODUCTION

Nowadays there is a growing interest for increasing the cultivation area, the production and improving the quality and the quantity of ornamental plants in Egypt.

Ornamental plants are subjected to the infestation by a wide range of insect pests, among of them is the sucking pests such as aphids and scale insects.

Surveys of aphids, scale insects and mealybugs on different ornamental plants in different localities in Egypt were carried out by Dawood (1971), Shaheen (1974), Nada (1986), Assem (1982, 1990) and Hanafi (1997). Dekel (1976) surveyed scale insects infested ornamental plants in Florida, USA. Sota et.al. (1994) Studied the effectiveness of 15 insecticides, insect growth regulators and mineral oils against the scale insect species; *Lepidasaphes beckii* and *Parlatoria pergandii* on citres orchards in Spain during 1990-1993.

MATERIALS AND METHODS

A chemical control experiment on the chaff scale insect, *Parlatoria pergandii* (Comstock) was conducted at the botanical garden, Hadek EL-Kobba palace, Cairo governorate, Egypt on June 27, th ,. 2001 on Yuka plant, *Yucca aloifolia,* heavily infested with *P. pergandii.* The effectiveness of the tested scalicides was carried out in three replicates. Each replicate consisted of four trees. These trees were homogenous in their size 10-12 years old and 1-1.5 m high, shape and rate of infestation with this scale insect. The trees received the regular agricultural practices before, during and

after spraying applications. Treatments were sprayed by the sprayer back motor, twenty litter tank. Climatic factors during spraying applications were temperature 29-31 ^{0}C and 66-69% R.H. Each sample consisted of four infested leaves per replicate (12 leaves / treatment). Pre–treatment count samples were picked up immediately before spraying application. Four post–treatment counts were taken one month, three months, six months and nine months after spraying application. The reduction percentages in *P. pergandii* immature stages, adult females and the total number of the insect were estimated according to Henderson and Tilton equation (1955). Statistical

Analysis of the data was carried out using the least significant differences among treatments L.D.S. Significance was considered when "F" value was significant There was no phytoxic effect were recorded for any of the tested scalicides. The treated insecticides were as follow The treated insecticides were as follow: -

1- Sumicidin, at a rate of 0.050%
2- Masedine (Malathion) 57% EC, at a rate of 0.250%
3- Masrona miscible oil, at a rate of 1.5%

RESULTS AND DISCUSSIONS

As shown in Table (1) the percentage of reduction on the total stage of *P. pergandii* after one month from treatment by same insecticides was the highest with Sumicidin (87.56%) followed by Mosron oil (64.16%) and Masodine (53.00%) with a highly significant difference.

Table (1): The effectiveness of some insecticides on *P. pergandii* after one month from treatment (at July , 27 th , 2001).

Insecticides	The percentage of reduction			
	Immature stages	Adult females	Total	
Sumicidin	93.18	81.94	87.56	a
Masodine	60.56	45.44	53.00	c
Masrona oil	79.15	49.05.	64.16	b

Means with the same letter in the same column are not significantly different at 5%.

Also, the percentage of reduction on the immature stages as well as the adult females of the insect recorded the same arrengement with highly significant differences (Table 1).

Table (2): The effectiveness of some insecticides on *P. pergandii* after three month from treatment (at September , 27 th , 2001).

Insecticides	The percentage of reduction			
	Immature stages	Adult females	Total	
Sumicidin	87.58	84.42	86.0	a
Masodine	64.14	58.18	61.16	c
Masrona oil	80.96	65.36	73.16	b

Data in Table (2) showed that, the percentage of reduction on the total stages of the insect after three months of treatment was highly significant differences.

Sumicidin – recorded the highest percentage of reduction (86.00%) followed by Masrona oil-(73.16%) and Masodine- (61.16%)

Table (3): The effectiveness of some insecticides on *P. pergandii* after six month from treatment (at December , 27 th , 2001).

Insecticides	The percentage of reduction			
	Immature stages	Adult females	Total	
Sumicidin	84.16	83.04	83.66	b
Masodine	44.38	40.62	47.50	c
Masrona oil	89.65	86.35	88.00	a

Data in Table (3) showed that, the percentage of reduction on the total stages of the insect after six months of treatment was highly significant differences.

Masrona oil – recorded the highest percentage of reduction (88.0%) followed by Sumicidin (83.66%) and Masodine- (47.50%).

Table (4): The effectiveness of some insecticides on *P. pergandii* after nine month from treatment (at March , 27 th , 2001).

Insecticides	The percentage of reduction			
	Immature stages	Adult females	Total	
Sumicidin	54.97	47.03	51.00	b
Masodine	38.48	29.18	33.83	c
Masrona oil	74.89	49.23	62.06	a

Data in Table (4) showed that, the percentage of reduction on the total stages of the insect after six months of treatment was highly significant differences.

Masrona oil – recorded the highest percentage of reduction (62.06%) followed by Sumicidin (51.00%) and Masodine- (33.83%).

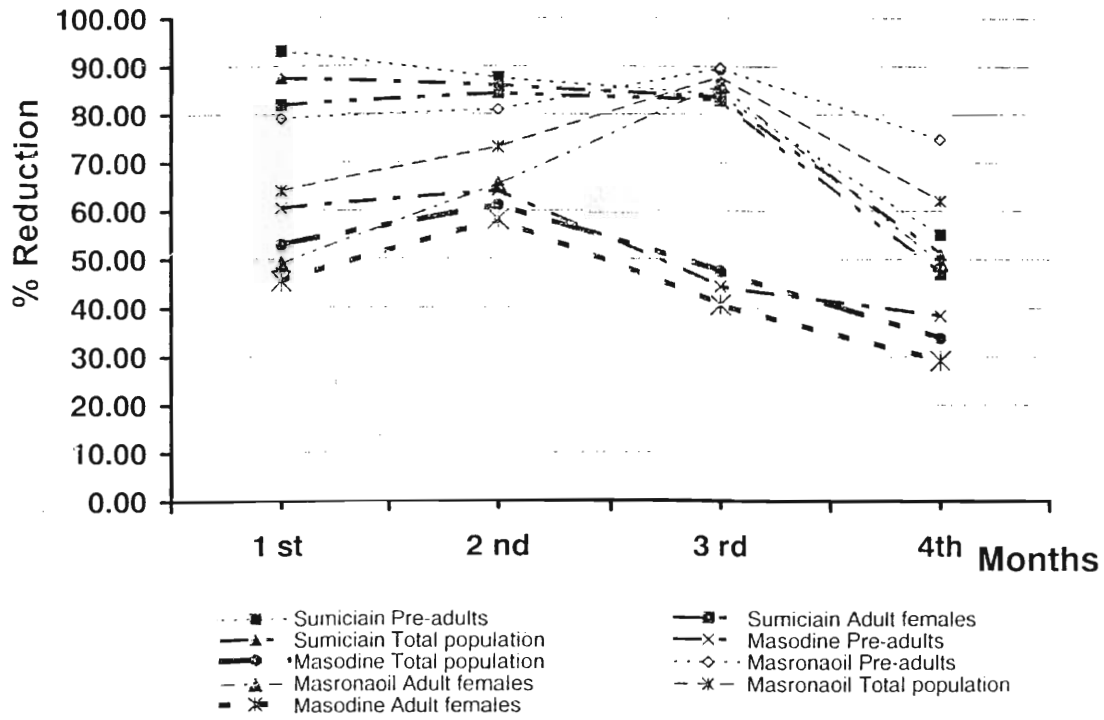
Table (5): Mean effectiveness of some insecticides on *P. pergandii*

Insecticides	The percentage of reduction			
	Immature stages	Adult females	Total	
Sumicidin	79.97	74.11	77.04	a
Masodine	51.89	43.36	47.62	c
Masrona oil	81.16	62.50	71.83	b

Data in Table (5) showed that, the percentage of reduction on the total stages of the insect after six months of treatment was highly significant differences.

Sumicidin recorded the highest percentage of reduction (77.04%) followed by Masrona oil (71.83%) and Masodine (47.62%).

Fig (1) The effectiveness of some scalicides on the pre-adults, adult females and the total population of the chaffscale insect, *Parlatora pregandii* (Comstock) infested *Yucca aloifloia* (Liliaceae) at Kasr El-Koba palace, Cairo governarate, Egypt



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كفاءة بعض المبيدات الحشرية في مكافحة حشرة بارلاتوريا برجانديای والتي تصيب نبات اليوكا في مصر .

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أجريت هذه التجربة في الحديقة النباتية بقصر القبة بالقاهرة في ٢٧ يونيو عام ٢٠٠١ لتقييم كفاءة بعض مبيدات الحشرات القشرية علي حشرة بارلاتوريا برجانديای التي تصيب نباتا اليوكا من نباتات الزينة وقد أظهرت النتائج أن اكثر المبيدات كفاءة هو مبيد السوميثدوين ٠,٠٥٠% يليه الزيت المعدني القابل للاستحلاب مصرونا اويل ١,٥% وكان اقل المبيدات كفاءة هو مبيد ماسودين ٠,٢٥% وكانت نسبة الإبادة ٧٧,٠٤% ، ٧١,٨٣% ، ٤٧,٦٢ % للمبيدات الثلاثة علي التوالي . ولم تلاحظ أي تأثيرات ضارة لأي من هذه المبيدات الثلاثة.