

**STUDIES ON POME-FRUIT TREES INSECTS IN A.R.E.
5-POPULATION FLUCTUATIONS OF THE PUBESCENT ROSE
CHAFFER *TROPINOTA SQUALIDA* SCOP. (COLEOPTERA:
SCARABAEIDAE) ON APPLE AND PEAR TREES**

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Abstract

Population fluctuations of *Tropinota squalida* Scop. adults (Coleoptera: Scarabaeidae) in apple and pear orchards were investigated at Oseim (Giza Governorate) in 1994 and 1995. Beetles attacked flowers throughout spring between late February and late April having only one annual generation with a single peak (11.9-16.4 beetles/tree) by early April. Infestation was relatively higher on pear than on apple. Beetles were active during day-time especially on sunny warm early spring days. For both years of investigation, the effect of temperature on *T.squalida* population was insignificantly positive, while that of relative humidity was insignificantly negative.

INTRODUCTION

The pubescent rose chafer, *Tropinota squalida* Scop. (Coleoptera: Scarabaeidae) is a threatening pest in fruit orchards in many parts of the world (Ibrahim and Salati, 1986). It was reported from Italy (Sabatinelli and Schembri, 1995) and Spain (Mozos *et al.*, 1998). Adults of *T. squalida* fed on flowers, pollen grains and soft fruits, especially apple and pear (Bebic, 1954). It had one generation per year from February to May in Italy (Mindó, 1966) and from mid-March to mid-July in France (Guennelon, 1959). In Egypt, this pest was distributed all over the country all the year round (Alfieri, 1976). Homam (1994) recorded *T.squalida* on 24 host plants. He added that infestation on apple and pear flowers occurred during March and early April with a peak in late March representing only one generation a year.

MATERIALS AND METHODS

Population fluctuations of *T.squalida* was investigated in apple and pear orchards about 5 feddans in area each, with approximately 9 years old trees, located at Oseim (Giza governorate) during 1994 and 1995. For each orchard, 10 random trees were in-

spected for infestation weekly from the early inflorescence stage until complete fruit setting. Beetles were visually traced on the trees and collected by hand. Infestation degree ID (mean No. of adults/tree) was used as a parameter for the assessment of adult population. The effect of daily-mean temperature and daily-mean relative humidity on adult population was studied by calculating the simple correlation coefficients (r).

RESULTS AND DISCUSSION

Population fluctuations of *T.squalida* on apple and pear trees at Oseim, Giza Governorate, during 1994 and 1995 are shown in Table 1 and represented graphically in Fig. 1. Infestation took place on apple and pear trees between mid-February and late April. For both crops and during both years of study, adult population tended to decline gradually throughout the 2nd half of April and beetles disappeared completely by early May.

Infestation on Apple Trees: In 1994, flowers began to be attacked during the 3rd week of February. Infestation increased gradually until the 4th week of March (ID = 11.5 beetles/tree) and reached a peak during the 1st week of April (ID = 13.7 beetles/tree). In 1995, infestation began by late February and continued until late April. Infestation peak took place during the 2nd week of April (ID = 11.9 beetles/tree).

Infestation on Pear Trees: During both years of investigation, adults of *T.squalida* attacked pear flowers from the 4th week of April. Peak of beetles abundance took place during the 1st week of April (ID = 12.8 and 16.4 beetles/tree in 1994 and 1995, respectively).

Effect of Daily-Mean Temperature and Relative Humidity: For both years of investigation effect of daily-mean temperature on the population fluctuation of *T.squalida* adults was insignificantly positive, while that of daily-mean relative humidity was insignificantly negative.

At Osime, Giza Governorate, adult beetles of *T. squalida* prevailed in apple and pear orchards during flowering season between late February and late April. Adults population was relatively higher on pear than on apple (ID = 12.8 –16.4 and 11.9-13.7 beetles/tree, respectively). However, only one generation of this insect pest was of possible occurrence during the prevalence period with a distinct peak by early April. Beetles disappeared completely from apple and pear orchards by early May. Such result coincides with the findings of Fadel (1993) who reported only one peak of *T. squalida* on rose flowers in Egypt. In Egypt also, Homam (1994) stated that this insect pests at-

Table 1. Infestation degree (ID*) of *T.Squalida* on apple and pear trees at Oseim, Giza Governorate, in 1994 and 1995.

Date of sampling		ID* on			
Month	Week	Apple trees		Pear trees	
		1994	1995	1994	1995
Jan.	1st - 4th	0.0	0.0	0.0	0.0
Feb.	1st & 2nd	0.0	0.0	0.0	0.0
	3rd	0.1	0.0	0.0	0.0
	4th	0.2	0.1	0.1	0.1
Mar.	1st	0.7	0.4	0.8	0.4
	2nd	1.7	1.3	1.6	1.4
	3rd	2.0	2.6	4.4	3.6
	4th	11.5	9.4	6.2	11.2
Apr.	1st	13.7	9.4	12.8	16.4
	2nd	10.9	11.9	9.1	9.5
	3rd	5.7	2.0	4.2	2.4
	4th	0.3	0.3	0.8	0.2
May-Dec.	1st - 4th	0.0	0.0	0.0	0.0

ID* = Mean No. of adults / tree.

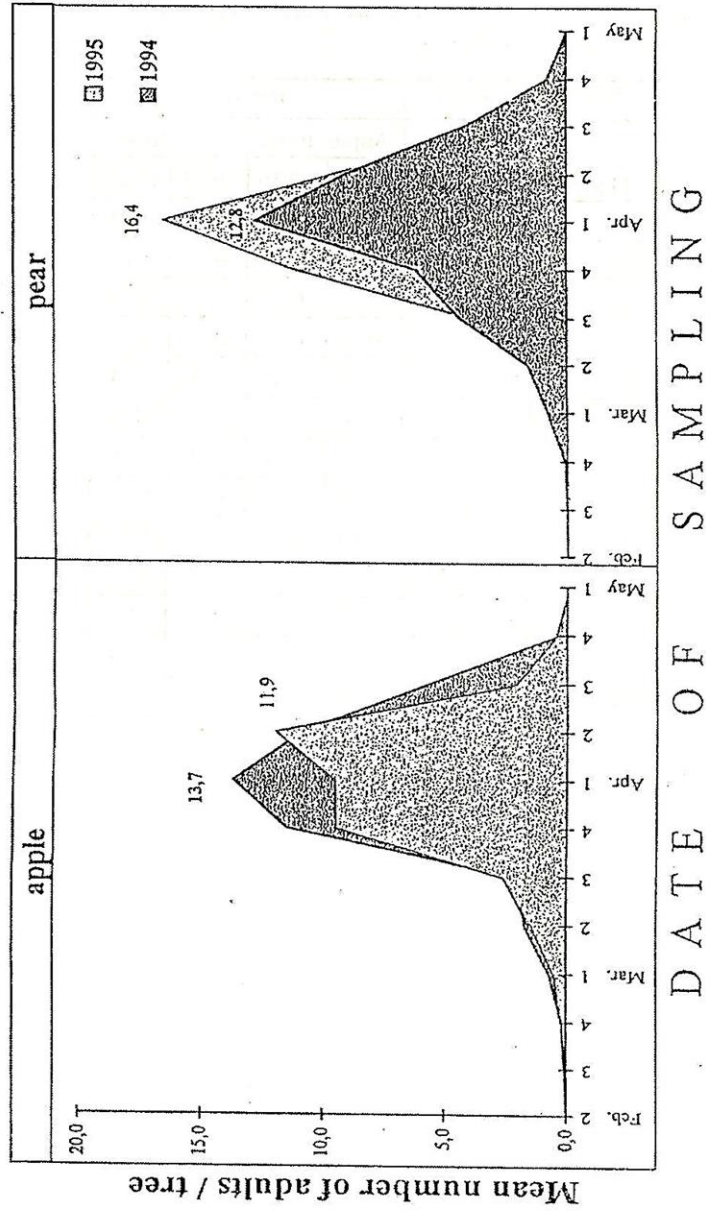


Fig. 1. Infestation degree of *T. squalida* on apple and pear trees at Oseim, Giza Governorate, in 1994 and 1995.

tacked apple and pear flowers during March and early April with a peak by late March . Mindo (1996) pointed out that, in Italy , adult beetles of *T. squalida* occurred from February till May. In contardiction with the current results, Guennelon (1959) mentioned that, in France, *T. squalida* adults remained active in apple and pear orchards until mid-July .

Frequent field observations indicated that adult beetles of *T.squalida* were active during the daytime especially on sunny warm early spring days. The effect of both temperature and relative humidity on their activity was statistically insignificant .

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دراسات علي حشرات التفاحيات بجمهورية مصر العربية ٥- تذبذبات تعداد جعل الورد الزغبى علي أشجار التفاح و الكمثري

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درست تذبذبات تعداد الحشرات الكاملة لجعل الورد الزغبى (فصيلة سكارابيدى ، رتبة غمديه الأجنحة) في بساتين التفاح و الكمثري بمنطقة أوسيم بمحافظة الجيزة خلال العامين ١٩٩٤ و ١٩٩٥ . سجلت الإصابة في الفترة بين أواخر فبراير و أواخر أبريل حيث بلغ تعداد الحشرات الكاملة ذروته في أوائل أبريل في بساتين التفاح (١١.٩ و ١٣.٧ حشرة بالغة / شجرة في العامين ١٩٩٤ ، ١٩٩٥ علي التوالي) ، و في بساتين الكمثري (١٢.٨ و ١٦.٤ حشرة بالغة / شجرة في العامين ١٩٩٤ ، ١٩٩٥ ، علي التوالي). وكان التعداد علي أشجار الكمثري أعلي منه علي أشجار التفاح . ولوحظ زيادة نشاط الحشرات الكاملة خلال النهار في الأيام الدافئة المشمسة لفصل الربيع . وظهر من نتيجة التحليل الأحصائي عدم وجود تأثير معنوي لكل من المتوسط اليومي لدرجة الحرارة و المتوسط اليومي للرطوبة النسبية علي تعداد الحشرات الكاملة لجعل الورد الزغبى علي أشجار كلا المحصولين خلال عامي الدراسة .