

SEASONAL ABUNDANCE OF *BRACHYCAUDUS SCHWARTZI* BORNER (HOMOPTERA: APHIDIDAE) ON PEACH AND APRICOT TREES AT NORTH SINAI GOVERNORATE, EGYPT

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Abstract

The present study showed that *Br. schwartzi* was recorded on the lower surface of both peach and apricot leaves. It is the most dominant aphid especially on peach trees at North Sinai Governorate. The seasonal abundance of *Br. schwartzi* showed two peaks of infestation on peach trees 84 and 52 individuals/ leaf at the 1st week of May and the 4th week of August, respectively. Only one peak was recorded on apricot trees with 44 individuals/ leaf. The population density was higher on peach trees during the all counts. Some scattered and small colonies were found infesting stems under the soil level during winter, may be to avoid low temperatures above the soil during winter. There were positive and negative correlations between the mean number of counted aphids and each of temperature and relative humidity respectively.

INTRODUCTION

Stone fruit trees such as peach and apricot are usually attacked by different species of aphids which suck the leaf sap and may transmit different virus diseases. In Egypt, the peach aphid *Brachycaudus schwartzi* Börner, was recorded for the first time infesting peach and apricot trees at North Sinai Governorate (Shahinaz, 2001). This aphid is the most injurious species especially of peach leaves, attacking their lower surface and the spring colonies cause severe curling and distortion of them.

This aphid was also recorded infesting peach trees in England (Theobald, 1927 and Blackman and Eastop, 1994). It lives without host alternation on *Prunus* spp. and *Prunus serotina* is the only recorded host of this aphid. Also, Pussard (1932), Bodenheimer and Swirski (1957), Zuniga (1967), Krczal and Kunze (1974), Darwish (1983) and Bueno and Foureaux (1997) mentioned that, this species infests peach trees in France, Israel, Chile, Germany, Hungary and Brazil, respectively. No detailed data on the seasonal abundance of this aphid species were found in the available literature. Therefore, the present study aimed to cover some aspects of the seasonal abundance of this aphid species on two host plants at North Sinai Governorate.

MATERIALS AND METHODS

Weekly samples were taken during the period from the beginning of February 2005 until the end of January 2006 from the leaves of both peach and apricot trees at El-Sheikh Zowaid region, North Sinai Governorate. Sampling took place as soon as the newly fresh leaves appeared to record the first date of aphid infestation and follow its fluctuation all over the year. Five randomized trees of both hosts were chosen of the same size and age in areas not relieved any application of pesticides. Twenty leaves of different sizes representing the different sites of each tree were picked at weekly intervals.

Counting of aphids took place in the field on the same day of sampling with the aid of 20X lens. Mean number of aphids (alatae and apterae) per leaf was determined. The cumulative data of aphid were utilized to illustrate their abundance of the two hosts.

The relationship between the weekly mean number of aphids and the corresponding weekly mean temperature and relative humidity was calculated. The simple correlation coefficients were calculated according to Svab (1973).

RESULTS AND DISCUSSION

Aphid individuals started to attack peach and apricot trees as soon as the new leaves appeared. It attacks the lower surface of leaves, feeding along the midrib. The aphid was noticed to be the most injurious and dominant species found on peach trees. Figs. (1 & 2) illustrate the seasonal abundance of *Brachycaudus schwartzi* Borner infesting peach and apricot trees, respectively during the period from the beginning of February 2005 till the end of January 2006. Data obtained together with close field observations revealed the following points:

a- On peach trees (*Prunus persicae*)

Fig. (1) showed that, the occurrence of the aphid on the leaves began from the 4th week of February till the 3rd week of October. The mean number of aphids ranged between 1.0 and 94.0 individuals per leaf. The population density of *Br. schwartzi* showed two peaks, a higher peak (94.0 insects per a leaf) occurred at the 1st week of May at an average of 21.5 C° and 43.6 % R.H., after which the population density declined gradually reaching 2.0 insects per a leaf on the 4th week of June. The

second peak was noticed at the 4th week of August (52.0 individuals per a leaf) at an average of 29.2 C° and 60.4 % R.H., then the population decreased gradually and disappeared in the 4th week of October.

b- On apricot trees (*Prunus armeniaca*)

Careful view of Fig. (2) showed that, the mean number of *Br. schwartzi* ranged between 1.0 and 44.0 individuals per a leaf. The insects began to attack the leaves from the first week of March and increased gradually until reaching its climax (44.0 insects per leaf) on the 1st week of May at an average of 21.5°C and 43.6 % R.H., then the infestation declined gradually and disappeared on the 3rd week of June.

The alatae forms were more abundant at the beginning of infestation and during peak period. Throughout the sampling period no sexual forms were found. The trees were found free of aphid infestation from the beginning of November to the end of January, but some scattered colonies were found on the stems under the soil level, may be to avoid low temperature above the soil during winter.

It worth to mention that, while the total number of *Br. schwartzi* showed a positive and high significant correlation with daily mean temperature ($r = 0.72$), it showed a negative and high significant correlation with the relative humidity ($r = -0.54$).

These results are in agreement with the finding of El-Kady *et al.* (1969) on *Pterochloroides persicae*; Ismail *et al.* 1990 on *Eriosoma lanigerum* and Blackman and Eastop (1994).

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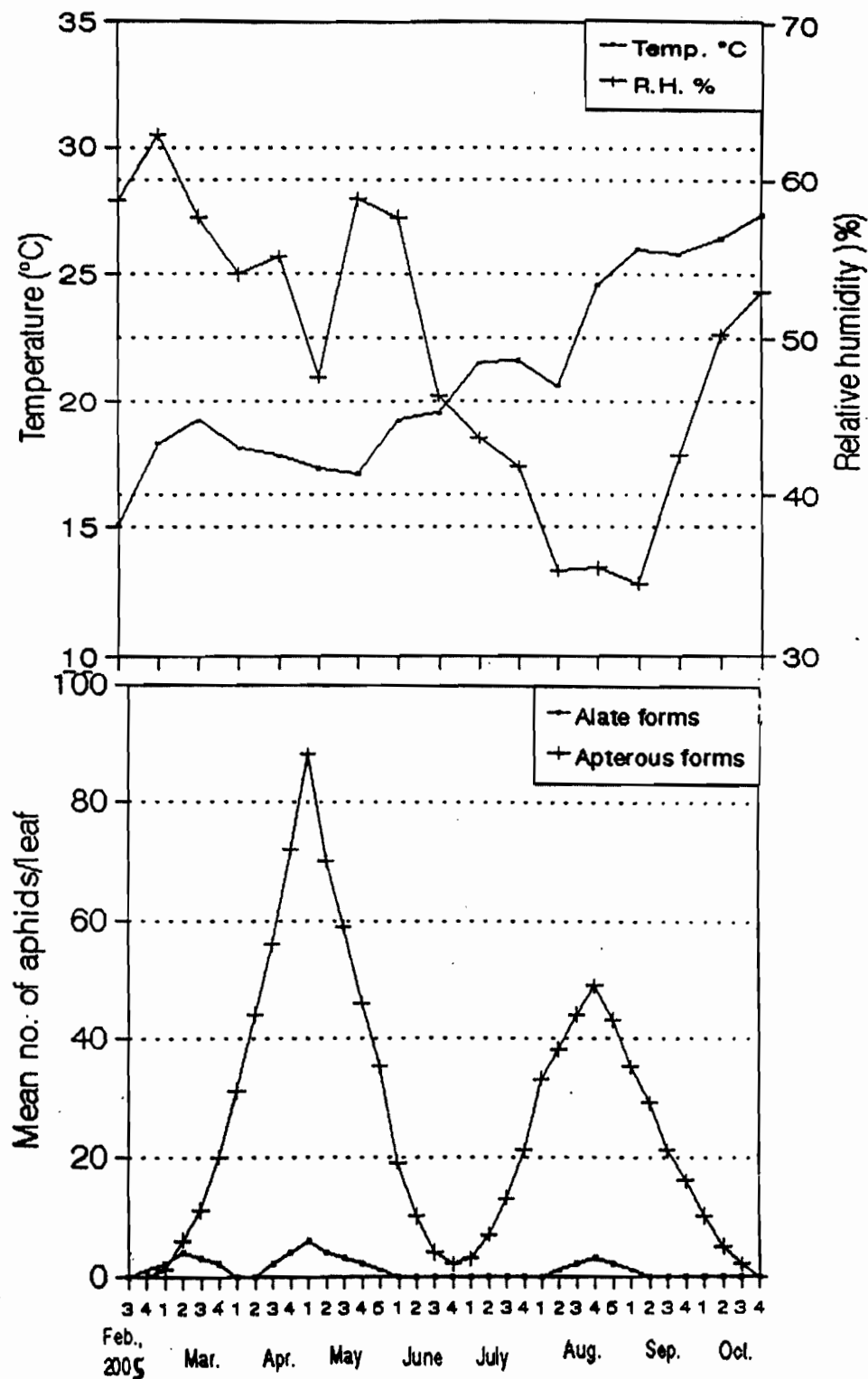


Fig . 1 . Seasonal abundance of *Br . Schwartzi* Borner Per leaf of Peach tyees during 2005 at North Sinai Governorate .

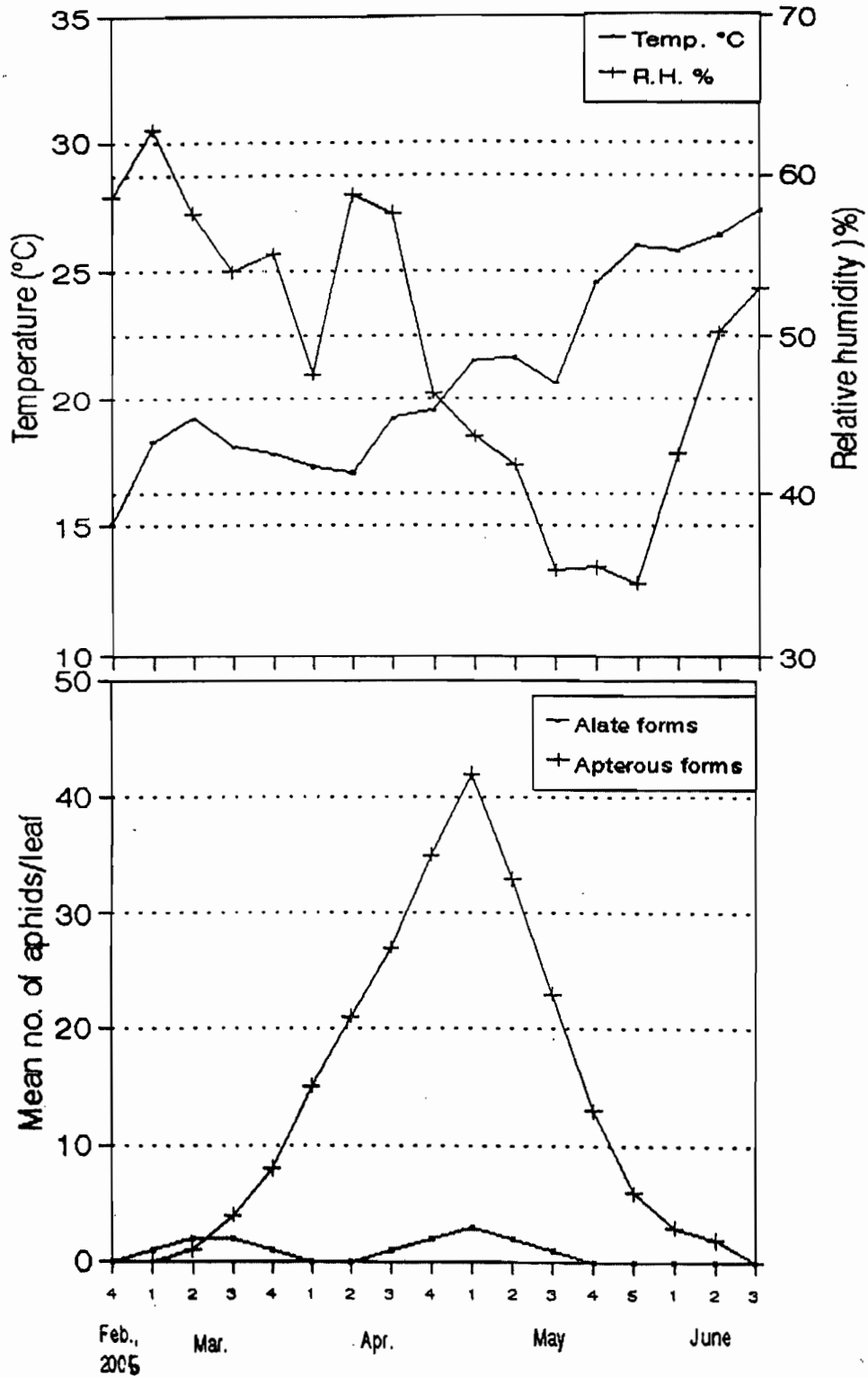


Fig . 2 . Seasonal abundance of *Br. Schwartzi* Borner Per leaf of apricot trees during 2005 at North Sinai Governorate

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التواجد الموسمي لحشرة المنّ *Brachycaudus Schwartzi* Borner

على أشجار الخوخ والمشمش في شمال سيناء مصر

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تبدأ الحشرة في إصابة أشجار الخوخ والمشمش بمجرد ظهور الأوراق الجديدة حيث تصيب الأسطح السفلية لها ويلاحظ أن هذه الحشرة تحدث الضرر الأكبر على أشجار الخوخ وتستمر الإصابة لكل من المحصولين بداية من شهر فبراير ٢٠٠٥ حتى شهر يناير ٢٠٠٦. تبدأ الإصابة بالنسبة لأشجار الخوخ من الأسبوع الرابع من شهر فبراير حتي الأسبوع الثالث من شهر أكتوبر وتصل لأعلي معدلاتها خلال الأسبوع الأول من شهر مايو (٩٤ فرد/ ورقة) والأسبوع الرابع من شهر أغسطس (٥٤ فرد/ ورقة). أما بالنسبة لأشجار المشمش فتبدأ الإصابة من الأسبوع الأول من شهر مارس حتي الأسبوع الثالث من شهر يونيو وتكون في أعلي معدلاتها (٤٤ فرد/ ورقة) في الأسبوع الأول من شهر مايو.