

SEASONAL ACTIVITY OF THE FRUIT-STALK BORER,  
*ORYCTES AGAMEMNON* (BURM.) (COLEOPTERA-  
SCARABAEIDAE) IN SULTANATE OF OMAN

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Abstract

Robinson pattern moth trap was used for monitoring the seasonal activity of the fruit-stalk borer, *Oryctes agamemnon* (Burm.) for three successive years (1995 - 1997) in the Date Palm Research Station of wadi Quriyat (W. Q), Al-Dakhlyia Region , Sultanate of Oman. The results obtained revealed that , the fruit - stalk borer had one peak per year. The seasonal activity of the pest started in the first year from the second week of April until the third week of August and the maximum period of activity occurred during the first week of June. Whereas the seasonal activity started in the second year, from the first week of May until the second week of August and the maximum period of activity occurred during the second week of June. In the third year, the seasonal activity began in the first week of May until the second week of october and the maximum period of activity occurred during the first week of July.

INTRODUCTION

The fruit-stalk borers are considered to be among the most serious pests of date palm in the Gulf area . In Saudi Arabia , Talhouk (1982) and Hammad & Kadous (1989) indicated three *Oryctes* species: i. e. *Oryctes agamemnon* (Burm.) ; *O.boas* prell. and *O. elegans* Prell., but their geographic distribution is different. In Qatar, Al-Azawi (1986) stated that there is one species , *O.elegans*. In Sultanate of Oman, Mokhtar (1992) reported one species, *O. agamenon*.

Kadous *et al* (1982) in Saudi Arabia showed that the adult beetles of *O. elegans* destroyed the surface of the rachises , fruit- stalks and frond bases, while its larvae and developmental stages were found between the frond bases and trunks, where most of the damage occurred.

In Al-Dakhlyia Region , Sultanate of Oman, the fruit-stalk borer, *Oryctes agamemnon* (Burm.) is commonly occurred in the date palm orchards. The larvae are usually found inside the dead and weaken offshoots feeding on the different tissues of these off- shoots. The adult beetles bore into the leaves and the surface of the fruit-

stalks as well as the rachises which may break if the damage is sever. A few strands or all of them may be affected resulting in poorly developed fruits and decreased crop production. The present work was carried out for monitoring the seasonal activity of the fruit - stalk borer , *O. agamemnon* under field conditions of the Date palm Research Station of WAdi Quriyat (W.Q), Al- Dakhlyia Region, Oman Sultanate .

## MATERIALS AND METHODS

Robinson pattern moth trap (Robinson & Robinson, 1950) was used to monitor the seasonal activity of the fruit- stalk borer, *O.agamemnon* (Burm.)in the Date palm Research station of Wadi Quriyat (W.Q.) in an area of about 80 faddan cultivated with 5000 date palm trees (Commercial cultivars 11 cvs., Date palm Gene 167 cvs; and Male cultivars 19 cvs. ). The light trap was kept between the date palm trees in the station and protected from sun by a woody box . The trap was operated nightly from sun set to sun rise. The trapped beetles were collected, identified and counted at weekly intervals. The daily mean weather factors were recorded.

## RESULTS AND DISCUSSION

### A. First year(1995)

The results obtained in figure 1 revealed that,the adult beetles of *O.agamemnon* appeared in the 2nd week of April with one beetle/week under field conditions of 29°C and 41% R.H., then the population increased gradually afterwards in April. In May, the population increased sharply from 6-27 beetles/week in the 1st and last weeks of May at 33°C & 43% R.H. and 36°C & 37% R.H., respectively.

The maximum population of *O.agamemnon* occurred in the 1st week of June (39 beetles) at field conditions of 39°C & 44% R.H., then the population decreased gradually from the 2nd week of June until the 4th week (36-22 beetles/week) at field conditions of 36°C & 41% R.H. and 35°C & 43% R.H., respectively, while in July the minimum population was 7-8 beetles/week during the 2nd week to 4th week at 35°C & 59% R.H. and 37°C & 68% R.H., respectively. During August, the population of adult beetles decreased continuously from 5-1 insects/week in the first and third weeks at 36°C & 54% R.H. and 35°C & 60% R.H., respectively, whereas in late August no adult beetles were attracted to the trap. During September until December the light trap was free from any adults. The previous results indicated that

the seasonal activity of the adult beetles started from the 2nd week of April till the 3rd week of August and the maximum period of activity occurred during the 1st week of June and the pest had one peak per year.

### B. Second year(1996)

The results obtained in figure 2 showed that the adult beetles of *O.agamemnon* started to appear in the 1st week of May with a few number (7 beetles/week) in the light trap at 34°C & 43% R.H., the adult beetles population increased gradually to 37 beetles/week in the 4th week of May at 36°C & 52% R.H. In the 1st half of June the adult beetles population increased sharply and reached to maximum number by mid-June (139 beetles/week) at 35°C & 67%R.H., whereas in the 2nd half of June the adult beetles population started to decrease from 119-93 beetles/week at field conditions of 35°C & 52% R.H. and 37°C & 52 % R.H., respectively. In July the adult beetles population decreased sharply from 51 to 9 beetles/week in the 1st and 4th weeks at environmental conditions of 36°C & 53% R.H. and 36°C & 52% R.H., respectively.

During August, a continuous decreasing for the *oryctes* beetles population was observed and a few number of adult beetles (6-3 beetles/week) were found in the light trap during the 1st and 2nd weeks of August at 34°C & 55% R.H. and 36°C & 57% R.H., respectively. In the second half of August and until the end of April of the following year the light trap was found free from any *oryctes* beetles of the fruit-stalk borer.

The aforementioned results indicated that, the seasonal activity of the fruit-stalk borer, *O.agaemnon* started in the first week of May and lasted till the second week of August and the maximum period of activity occurred in the second week of June and the insect had one peak per year.

### C. Third year(1997)

The results in figure 3 showed that, the adult beetles of *O.agamemnon* started to appear in the 1st week of May with a few number (4 beetles/week) in the light trap at 30°C & 44% R.H. The adult beetles population started to increase gradually, reached 23 beetles/week in the last week of May at 34°C and 43% R.H. During June the adult beetles population increased sharply from 43 to 126 beetles/week in the 1st and 4th weeks of June at environmental conditions of 34°C & 46% R.H. and 36°C & 49% R.H., respectively. In July the adult populations reached a maximum

number (129 beetles/week) in the first week at 34°C & 50% R.H., then continuous decreasing for the insect population was observed in the 2nd to 4th week of July (98-37 insects/week) at field conditions of 34°C & 45% R.H. and 36°C & 58% R.H., respectively. During August, the population declined gradually in the light trap from 32 to 17 beetles/week in the 1st week and 4th week at 33°C & 49% R.H. and 35°C & 49 R.H., respectively. In September, the *O.agamemnon* population declined sharply from 13-5 beetles/week in the 1st and 4th weeks, respectively at field conditions of 33°C and 54% R.H. during September, whereas in October a few number of adult beetles (3-1 beetles/week were found in the light trap during 1st and 2nd weeks of October. In the second half of October and until the last week of December the light trap was found free from the fruit-stalk borer, *O.agamemnon*. The aforementioned results revealed that, the seasonal activity of the fruit-stalk borer, *O.agamemnon* started in the first week of May and lasted until the second week of October, the maximum period of activity occurred during the first week of July and the insect had one peak per year.

Talhok (1982) reported, several species of *Oryctes* spp. associated to date palm in Saudi Arabia and mentioned that, the adults of *Oryctes boas* appeared in winter in Jizan area, and those of *Oryctes agamemnon* and *Oryctes elegans* appeared as of April in Al-Kharj and Hofuf, but mainly in June-August, whereas Hammad and Kadous (1989) revealed that, the adults of the fruit-stalk borer, *O.elegans* Prell. were active in the Eastern Province of Saudi Arabia (Al-Hassa Oasis) from April until September and *O.agamemnon* and *O.boas* were found, but with very few numbers. Talhok (1991) mentioned that, there are at least 3 species of *Oryctes* in Saudi Arabia but their geographic distribution was different and adults appeared mostly in June till August.

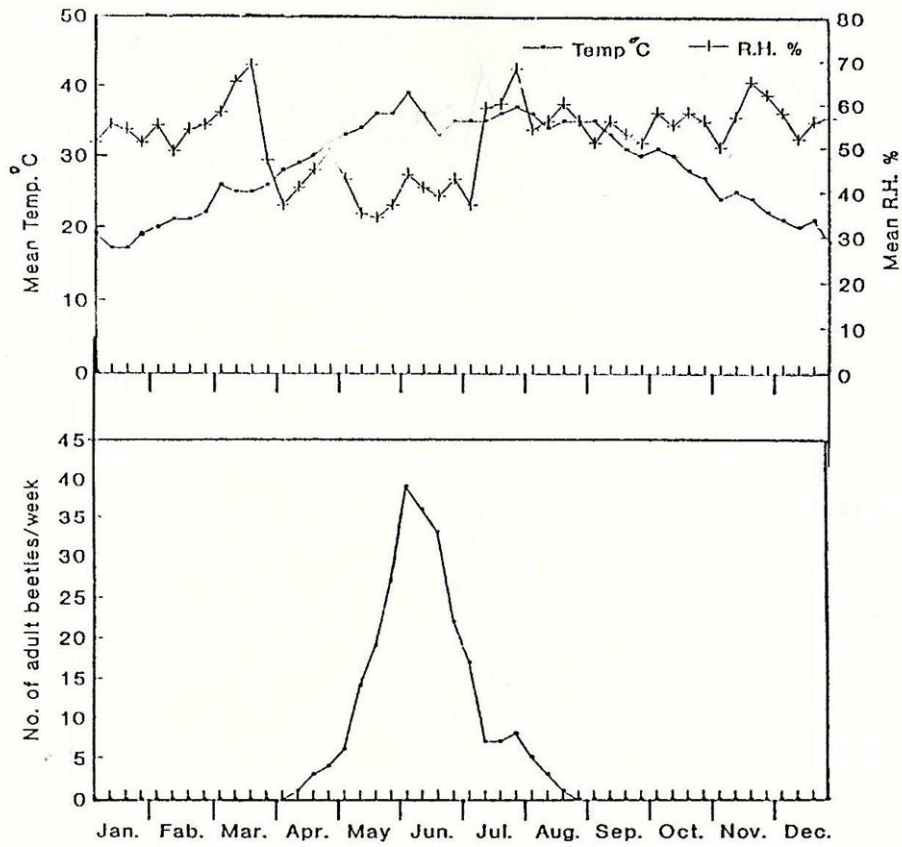


Fig. 1. Seasonal activity of the fruit-stalk borer, *O. agamemnon* in the Date palm Research Station of Wadi Quriyat, Al-Dakhlyia Region during 1995.

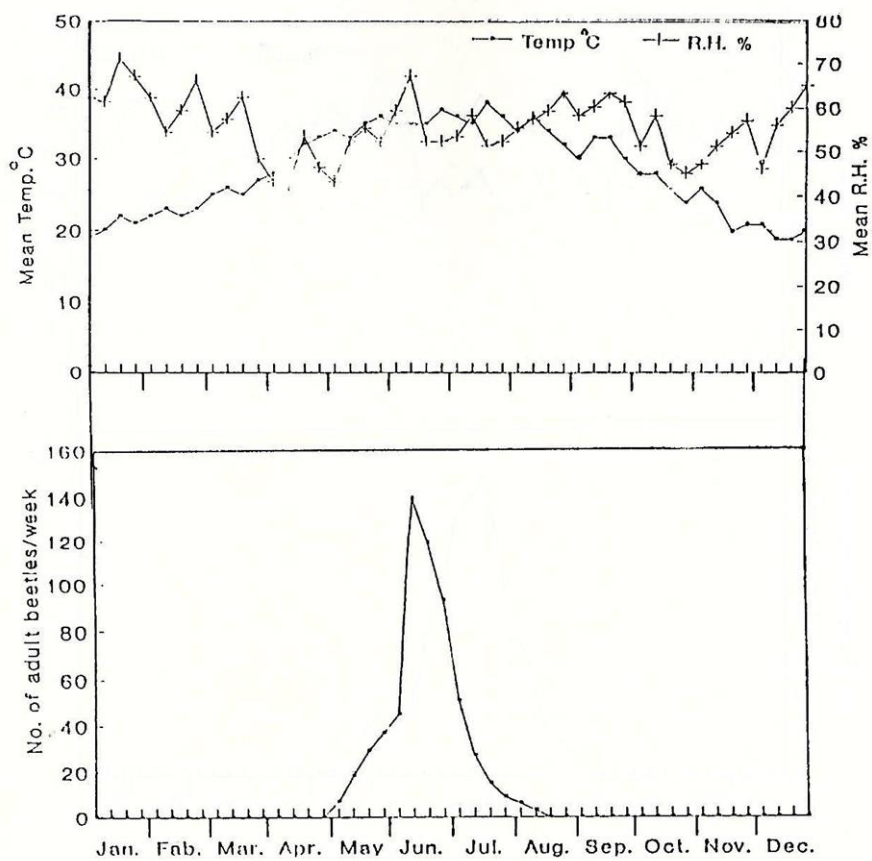


Fig. 2. Seasonal activity of the fruit-stalk borer, *O. agamemnon* in the Date palm Research Station of Wadi Quriyat, Al-Dakhlyia Region during 1996.

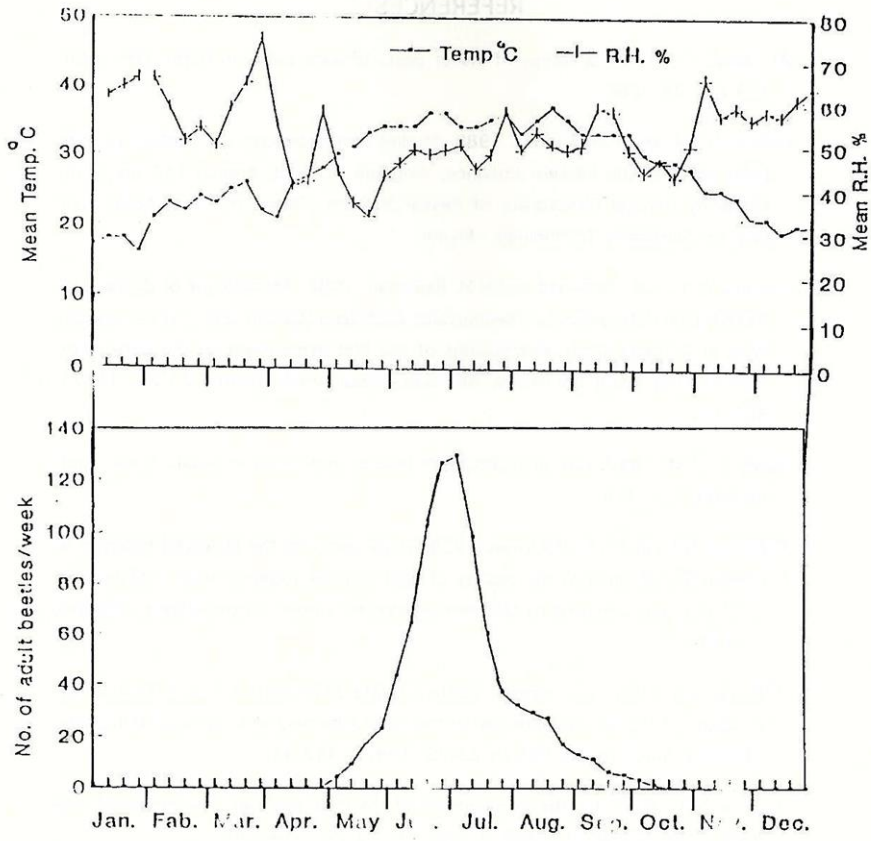


Fig. 3. Seasonal activity of the fruit-stalk borer, *O. agamemnon* in the Date palm Research Station of Wadi Quriyat, Al-Dakhlyia Region during 1997.

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**النشاط الموسمي لجعل عذوق النخيل (*Oryctes agamemnon* (Burm.)  
في سلطنة عمان**

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استخدمت مصيدة روبنسون الضوئية في رصد النشاط الموسمي لجعل عذوق النخيل (*Oryctes agamemnon* (Burm.) لمدة ثلاثة سنوات متتالية (١٩٩٥- ١٩٩٧) في محطة بحوث النخيل بوادي قريات بالمنطقة الداخلية في سلطنة عمان. أوضحت النتائج أن لجعل عذوق النخيل جيل واحد في العام. بدأ النشاط الموسمي لجعل عذوق النخيل في العام الأول من الأسبوع الثاني من إبريل وحتى الأسبوع الثالث من أغسطس، وكانت أقصى فترة للنشاط في الأسبوع الأول من يونيو. بدأ النشاط الموسمي في العام الثاني في الأسبوع الأول من مايو واستمر حتى الأسبوع الثاني من أغسطس، وكانت أقصى فترة للنشاط في الأسبوع الثاني من يونيو. بدأ نشاط الحشرة في العام الثالث من الأسبوع الأول من مايو وحتى الأسبوع الثاني من أكتوبر، وكانت أقصى فترة لنشاط جعل العذوق في الأسبوع الأول من يوليو.