

THE SCALE INSECTS (HOMOPTERA : COCOIDEA) OF CITRUS IN
EGYPT.

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ABSTRACT

Twenty two species of scale insects (Homoptera :Coccoidea) were recorded so far from citrus spp., in Egypt . About half of these species are pests of economic importance, Whereas the rest are infrequent components of the citrus orchards fauna in the country, rarely reaching pest status. The history of introduction, the distribution and the status of these coccoids in Egypt are discussed .

INTRODUCTION

Citrus was introduced into Egypt in ancient times and cultivated here for many centuries. Along with the large expansion of the citrus cultivations in the newly reclaimed areas, there was extensive research on all aspects including entomology. The scale insects furnish the great majority of citrus trees in Egypt. The basis of our Knowledge of citrus scale insects in Egypt was the early studies by Hall (1926) who listed eleven species of scale

insects were found to infest and may cause damage to citrus in the country (Hall, 1924; Priesner & Hosny, 1940, and Ezzat, and Rashad 1962 and Ezzat and Hussein, 1967. The present paper is intended to review the data on the appearance, distribution and changes in pest status of citrus scale insects, with some notes on their parasites in Egypt .

Family Coccidae

1) Ceroplastes floridensis Comstock, 1881 (Florida wax scale):

This pest was recorded for the first time in Egypt by Hall in 1924. During last ten years, the population of this pest increased and it became one of the major pests of citrus especially in Delta region.

2) Ceroplastes rusci (L.) 1758 (Fig wax scale) :

This wax scale was collected from different host plants in Egypt such as; fig, guava, banana, citrus and ornamental plants, but it is rarely found on citrus.

3) Coccus hesperidum L., 1758 :

This species is a polyphagous and widely distributed in Egypt, but causing no damage to citrus or other fruit trees.

4) Coccus longulus (Douglas), 1887 :

This species is rarely found on citrus trees in Egypt.

Family Diaspididae

5) Aonidiella aurantii Maskell, 1879 (The red scale):

The red scale is widely distributed in Egypt on various hosts, but mainly injurious to citrus. It is a major pest of citrus in the country and cause considerable damage to citrus crop. There are two species of Aonytis parasitizing this pest: A. chrysomphali and A. mytilaspidis Krieger & Hosny (1940).

6) Aonidiella orientalis (Newstead), 1894 :

The oriental red scale, is usually found infested citrus trees in house gardens.

7) Aspidiotus hedrea (Vallot), 1901 :

This species is not of any economic importance in Egypt .

8) Chrysomphalus aspidium (L.), 1766 (The black scale) :

This species was widely distributed in all citrus growing areas, and it was considered as major citrus pest on citrus in the country during the 1930's. and 1940's. The frequency and the density of this species decreased and is considered as a minor citrus pest. This may be due to the role of the parasite, Habrolepis pascuorum Mercet in controlling the population of this pest Hafez (1970).

9) Hemiberlesia latania Signoret, 1869 :

Collected on citrus in Egypt for the first time 18 - 1 .40, it may be found in high density in house gardens, but it has never been known to cause any damage.

10) Lepidosaphes beckii Newman, 1869 :

This species is one of the most important pests of citrus and attacks all parts of the tree (Hall, 1922). It is distributed all over the country specially the coastal area.

11) Parlatoria crotonis Douglas, 1887 :

This species is usually found infesting ornamental plants, and rarely found in citrus orchards.

12) Parlatoria ziziphus (Lucas), 1853 :

Recorded by Leonardi, 1920 and Lindinger 1912 on imported citrus fruit (Hall 1923), but was recorded as a minor pest until the beginning of the 1970's. The population increased rapidly and it became a very serious pest, and has dispersed since then to all citrus areas. Now its status as a minor citrus pest in Egypt has been attributed to the good chemical control programme which applied after extensive studies to the Ecology and distribution of this pest.

13) Parlatoria oleae (Clovee), 1880 :

It is infrequent and does not damage citrus in the country, whereas it is a common pest on olive and deciduous fruit trees .

14) Mycetaspis personata (Comstock, 1883) :

Two active parasites keep the population of this pest under control, they are Aphytis chrysomphalus Merc. and Aspidiotiphagus lounsburyi Berl .

Family Margarodidae

15) Icerya aegyptiaca (Douglas, 1890) (The Egyptian mealy bug):

It is not a pest of citrus trees, but has occasionally been found on oranges, it has a very wide range of food plants in Egypt .

16) Icerya purchasi Maskell, 1878 (Cottony cushion scale):

The successful biological control with the ladybird Rodolia cordinalis with the aid of two other ladybird, Chilocorus bipustulatus and Coccinella septempunctata keeps the population of this pest within reasonable limits (Hall, 1924).

17) Icerya sychellarum (Westwood, 1855) :

The female of this species has been found on bananas imported from Madagascar (Hall, 1926), recently it is widely spreaded on various crops, but seldom encountered on citrus.

Family Pseudococcidae

18) Ferrisia virgata Cockerell, 1893 :

Collected on citrus 9.9.1948, for the first time . It is not of economic importance.

19) Nipaecoccus vastator (Maskell, 1895) :

Hall (1924) recorded this species on citrus. Now it is rarely found on citrus.

20) Nipaecoccus viridis (Newstead), 1895 :

This pest is recorded in Egypt on citrus, but it has been rarely found on citrus.

21) Planococcus citri (Risso, 1913) :

This species is highly polyphagous and widely distributed in the country, it is usually found in neglected citrus orchards and it is only a minor citrus pest.

22) Maconellicoccus hirsutus (Green, 1908) :

The hibiscus mealy bug was recorded on citrus, The damage caused by this pest varies greatly according to the host plant and the amount of damage done to poinsettias, citrus, oleander, mangoes is quite remarkable (Hall, 1924). This species is of great economic importance on guava and grapes especially in newly reclaimed areas, and this may be due to the transportation of infested seedlings to these area.

DISCUSSION

Considerable changes in the pest status and diversity of citrus scale insects have taken place in Egypt. During the first and second decades of this century, the black scale Chrysomphalus aonidum and the Cottony cushion scales

were the major pests of citrus. Following the successful control of Icerya, citrus orchards became infested and damaged by other coccoid pest, e.g. Aonidiella aurantii, Lepidosaphes beckii and Ceroplastes floridensis and parlatoria ziziphus as they became a severe pest during the late 1960,s, but within a short period its pest status was diminished .

During the 1960-80, the red scale and the oustershell scale L. beckii became the dominant scale pest, being a key target in the chemical control programme on citrus .

An analysis of the citrus coccid listed here shows that all of them are introduced species originating from other zoogeographical regions, or scale insects of cosmopolitan distribution. None of the indigenous components of the Mediterranean or Middle-Eastern Coccoidea fauna has adapted to citrus .

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• الحشرات القشرية التي تصيب أشجار الموالح في مصر •

ملخص عيسى

مع التوسع في زراعة أشجار الموالح وخاصة في الأراضي المستصلحة ظهرت الحاجة الى دراسة كل مايتعلق بحصول الموالح وخاصة الافات التي تصيبه . وتعتبر الحشرات القشرية من أهم الافات التي تصيب أشجار الموالح . وقد اشتملت هذه الدراسة على حصر للأنواع المختلفة من الحشرات القشرية التي تصيب أشجار الموالح كذلك توزيع ومدى انتشار كل آفة كما ذكرت بعض أنواع الطفيليات التي تلعب دورا في خفض نسبة الاصابة في بعض الانواع الى الحد الغير اقتصادي .

وقد وجد ان هناك اثنين وعشرون نوعا من أنواع الحشرات القشرية تصيب أشجار الموالح في مصر .

ثالث على النحو التالي :

الحشرات الرخوة : Soft scale insects

Ceroplastes حشرة الموالح الشمعية Ceroplastes floridensis حشرة التين الشمعية

rusci

Coccus longulus الحشرة الرخوة Coccus hesneridum

الحشرات القشرية المسلحة :

Aonidiella الحشرة القشرية الحمراء * Aonidiella aurantii الحشرة القشرية الشمعية

orientalis

Hemiberlesia latania حشرة اللاتانيا Aspidiotus hedrea

Parlatoria crotonis الحشرة القشرية السوداء * Chrysomphalus aonidum

Parlatoria ziziphus حشرة الزيتون Leaidosaphes beekii حشرة الموالح الحارثة

Eucetaspis حشرة الزيتون Parlatoria oleae حشرة البرمونيانس

personata

البق الدقيقي :

Icerya purchasi البق الدقيقي الاسترالي Icerya aegyptiaca البق الدقيقي المصري

Perisiana virgata بق الميلام Icerya aychellorum

Nippaecoccus vastatar Nippaecoccus viridis

Maconellicoccus بق الهيكس الدقيقي Planococcus citri بق الموالح الدقيقي

hirsutus