SCALE INSECTS AND WHITEFLIES (HOMOPTERA: COCCOIDEAE AND ALEYRODOIDEAE) AND THEIR PARASITOIDS ON THE CHRIST THORN, ZIZIPHUS SPINA-CHRISTI L. IN EGYPT

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Abstract

This work included the survey of aleyrodids (Aleyrodidae), coccids (Coccidae), diaspidids (Diaspididae) and pseudococcids (Pseudococcidae) (Homoptera) and their parasitoids on Ziziphus spina-christi L. in different locations in Egypt during 2003-2005. Eleven species of these pests were recorded as well as their common names, hosts, distribution and parasitoids of the species are given. Nine parasitoid species recorded are attacking the aforementioned pests. Whiteflies are the largest group attacking Ziziphus spina-christi followed by the coccids, diaspidids and pseudococcids, respectively.

INTRODUCTION

The Christ thorn or jujube, Ziziphus spina-christi (Rhamnaeae) has a comprehensive, worldwide coverage on tropical, subtropical, temperate and boreal tree species of major economic importance and lesser-known species of local importance. The fruit is edible and occasionally sweet, but the flavor and texture are inferior to other Ziziphus spp. which have been domesticated in Africa and especially in northern India. It has been reported that applying Christ thorn bark in larger doses reduces nematode activity in cereal fields and leads to significant increase in the yield of sunflowers (Ismail, 1998). It now also covers in detail many of the pests that damage these trees (Baumer, 1983). Mound and Halsey (1978) recorded 11 species of whiteflies attacking Ziziphus spp. While Abd-Rabou (2001) recorded 5 whitefly species attacking this plant. Three armored scale insects were found associated with Ziziphus spp (Dekei,1965).

The aim of the present work is to collect, record and identify the whiteflies and scale insects and their parasitoids associated with christ thorn, Ziziphus spina-christi in Egypt.

MATERIALS AND METHODS

A survey was carried out all over Egypt during 2003-2005. Infested leaves of Ziziphus spina-christi with any of the prospective insect groups were examined in the field, using a pocket lens. Leaves were collected and placed separately in paper labeled bags for further examination in the laboratory. Identification of aleyrodids, coccids, diaspidids and pseudococcids were made by examining their pupal case and
mounted adults in Canada balsam, according to Bink-Moenen (1983). Materials were also kept in a well-ventilated container until the emergence of any parasitoids. Identification of parasitoids was made by examining their mounted adults in Hoyer’s medium (Noyes, 1982).

RESULTS AND DISCUSSION

Family: Aleyrodidae (whiteflies)
1. Species: Acaulaleurodes rachipora (Singh)
   Common name: The black aleurod
   Parasitoid: Encarsia davidi Viggiani
   Locality: Beni-Suef
   Material examined: 22 pupal case, October, 2004

2. Species: Auleurocanthus ziziphi Priesner and Hosny
   Common name: Ziziphus whitefly
   Parasitoid: Encarsia lutea (Masi)
   Locality: Aswan
   Material examined: 34 pupal case, November, 2005

3. Species: Auleurobius mariotti (Quaintance)
   Common name: Mignonette whitefly
   Parasitoid: Encarsia elegans Masi
   Locality: Assuit
   Material examined: 55 pupal case, March, 2006

4. Species: Aeurocanthus porosus (Priesner and Hosny)
   Common name: Porosus whitefly
   Parasitoid: No parasitoids were recorded from this species.
   Locality: Qena
   Material examined: 10 pupal case, December, 2004

5. Species: Bemisia afer (Priesner & Hosny)
   Common name: Sycamore whitefly
   Parasitoid: Encarsia lutea (Masi)
   Locality: Sharkiya
   Material examined: 23 pupal case, July 2005

6. Species: Bemisia (toxaci Complex) (Gennadius)
   Common name: Cotton whitefly
   Parasitoid: Encarsia aegyptiacus Evans and Abd-Rabou
   Locality: Sohag
   Material examined: 7 pupal case, November 2005
7. **Species**: *Siphoninus philyreae* (Halliday)
   **Common name**: Pomegranate whitefly
   **Parasitoid**: *Encarsia inaron* (Walker)
   **Locality**: Assuit
   **Material examined**: 14 pupal case, March, 2006

8. **Family**: Coccidae (*Soft scale insects*)
   **Species**: *Purusaissetia nigra* (Nietner)
   **Common name**: Nigra soft scale
   **Parasitoid**: *Metaphycus africans* Compere and *Scutellista cyanaeae* (Mots.)
   **Locality**: Sharkiya
   **Material examined**: 15 females, July 2005

9. **Species**: *Eucalyptus tessellatus* (Signoret)
   **Common name**: Tessellated soft scale
   **Parasitoid**: No parasitoids were recorded from this species.
   **Locality**: Assuit
   **Material examined**: 9 pupal case, March, 2006

10. **Family**: Diaspididae (*Armored scale insects*)
    **Species**: *Hemiberlesia latania* (Signoret)
    **Common name**: Latania scale
    **Parasitoid**: *Aphytis mytilaspis* (La Baron) and *Habrolepis aspidioti* Compere & Annecke
    **Locality**: Sharkiya
    **Material examined**: 88 females, July 2005

11. **Family**: Pseudococcidae (*Pseudo mealybugs*)
    **Species**: *Macroplicococcus hirsutus* (Green)
    **Common name**: Hibiscus mealybug
    **Parasitoid**: *Anagrus karali* Moursi
    **Locality**: Giza
    **Material examined**: 16 females, July 2005

   During the present work eleven species of aleyrodid, coccids, diaspidids and pseudococcids associated with nine parasitoids were collected from *Ziziphus* trees in seven governorate (Assuit, Aswan, Beni-Seuf, Giza, Qena, Sharkiya and Sohag). Whiteflies (7 species) is the largest group attacking *Ziziphus spina-christi* followed by the coccids (2 species), diaspidids (1 species) and pseudococcids (1 species), respectively. Mound and Halsey (1978) recorded the following species of whiteflies attacking *Ziziphus* all over the world: *Acauleleyodes rachipora* (Singh), *Africaleurodes coffeacola* Dozier, *Aleurocanthus ziziphi* Priesner and *Hosny*


REFERENCES

الحشرات القشرية والذباب الأبيض وطفيلياتها التي تصب النقص في مصر

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تضمن هذا العمل حصر الحشرات القشرية السالحة والحشرات القشرية الرخوة والذباب الدائري والذباب الأبيض وطفيليات المشخصة على هذه الآفات على نبات النبق في مساحات مختلفة بمصر لبعض الفترة من 2002-2003. أدى عشر رؤوس من الحشرات القشرية والذباب الأبيض بالإضافة إلى الأسماء العامة والتوزيع الجغرافي والطفيليات المصلحة لهذه الآفات التي تم تسجيلها. وقد أضحى من العمل أن هذه الآفات بهبّها 9 طفيليات وأن أكثر الأنواع الحشرية التي تصب النقص هي الذباب الأبيض في الحشرات القشرية السالحة والحشرات القشرية الرخوة والذباب الدائري على الترتيب.