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

SHAABAN ABD-RABOU

Plant Protection Research Institute, ARC, Dokki, Giza, Egypt

(Manuscript received 25 June 2006)

Abstract

This work included the survey of aleyrodids (Aleyrodoidae), coccids (Coccidae), diaspidids (Diaspididae) and pseudococcids (Pesudococcidae) (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, *Zizyphus spina-christi* (Rhamnaceae) 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 (Dekle,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 *Zizyphus 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: *Acaudaleyrodes rachipora* (Singh)
Common name: The black aleurodid
Parasitoid: *Encarsia davidi* Viggiani
Locality: Beni-Seuf
Material examined: 22 pupal case, October, 2004

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

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

4. Species: *Aleuroclava 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* (*tabaci* Complex) (Gennadius)
Common name: Cotton whitefly
Parasitoid: *Eretmocerus aegyptiacus* Evans and Abd-Rabou
Locality: Sohag
Material examined: 7 pupal case, November 2005

7. Species: *Siphoninius phillyreae* (Haliday)
Common name: Pomegranate whitefly
Parasitoid: *Encarsia inaron* (Walker)
Locality: Assuit
Material examined: 14 pupal case, March, 2006
Family : Coccidae (Soft scale insects)
8. Species: *Parasaissetia nigra* (Nietner)
Common name: Nigra soft scale
Parasitoid: *Metaphycus africans* Compere and *Scutellista cyaneae* (Mots.)
Locality: Sharkiya
Material examined: 15 females, July 2005
9. Species: *Eucalyptus tessellates* (Signoret)
Common name: Tessellated soft scale
Parasitoid: No parasitoids were recorded from this species.
Locality: Assuit
Material examined: 9 pupal case, March, 2006
Family : Diaspididae (Armored scale insects)
10. Species: *Hemiberlesia latania* (Signoret)
Common name: Latania scale
Parasitoid: *Aphytis mytilaspidis* (La Baron) and *Habrolepis aspidioti* Compere & Annecke
Locality: Sharkiya
Material examined:88 females, July 2005
Family : Pesudococcidae (Pesudo mealybugs)
11. Species: *Maconellicoccus hirsutus* (Green)
Common name: Hibiscus mealybug
Parasitoid: *Anagyrus kamali* Moursi
Locality: Giza
Material examined: 46 females, July 2005

During the present work eleven species of aleyrodids, 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 Halsely (1978) recorded the following species of whiteflies attacking Ziziphus all over the world : *Acaudaleyrodes rachipora* (Singh) , *Africaleurodes coffeacola* Dozier, *Aleurocanthus ziziphi* Priesner and Hosny

,*Aleurolobus marlatti* (Quaintance), *Aleuroclava* sp., *Aleuroclava porosus* (Priesner and Hosny), *Bemisia hancocki* (Corbett), *Bemisia tabaci* (Gennadius), *Jeannelaleyrodes graberi* (Cohic), *Siphoninius phillyreae* (Haliday) and *Tialeurodes rara* Singh. Abd-Rabou (2001) recorded *A. rachipora, A. ziziphi, A. marlatti* , *A. porosus* and *B. tabaci* attacking this plant in Egypt. While, Dekle (1976) recorded three armored scale insects attacking *Ziziphus spina-christt.* These are *Chrysopmphalus aonidum* (L.) ,*Howardi biclavis* (Comst.) and *Pinnaspis proteus* (Curtis) .

REFERENCES

1. Abd-Rabou, S. 2001. Whiteflies of Egypt: Taxonomy, biology, ecology and means of their control. Adv. Agric. Res. In Egypt, Vol. 3 (1): 1-74.
2. Baumer M. 1983. Notes on trees and shrubs in arid and semi-arid regions. Rome FAO. Forestry Division.
3. Bink-Moenen, R. M. 1983. Revision of the African whiteflies (Aleyrodidae) mainly bases on a collection from Tchad. Bible. Neder. Ent. Ver. Ams. pp.201.
4. Deckle, G. W. 1976. Florida armored scale insects. Florida department of Agriculture and Consumer Services, Doyle Conner, Commissioner, 345 PP.
5. Ismail A. E. 1998. Effect of soil amendments with some hardwood barks on reproduction of *Rotylenchulus reniformis* and growth of sunflower. Pakistan Journal of Nematology.16(2):137-144.
6. Mound, L. A. and S. H. Halsey. 1978. Whitefly of the world. A systematic catalogue of the Aleyrodidae (Homoptera) with host plant and natural enemy data. (British Museum) (Natural History) and John Wiley and Sons.340pp.
7. Noyes, J. S. 1982. Collecting and preserving chalcidid wasps Hymenoptera: Chalcidoidea. Journal of Natural History, 16:315-334.

الحشرات القشرية والذباب الأبيض و طفيلياتها التى تصيب النبق فى مصر

شعبان عبدربه

معهد بحوث وقاية النباتات- مركز البحوث الزراعية- الدقى - جيزة

تضمن هذا العمل حصر للحشرات القشرية المسلحة و الحشرات القشرية الرخوة و البق الدقيقى و الذباب الأبيض و الطفيليات المتخصصة على هذه الآفات على نبات النبق فى سبع محافظات مختلفة بمصر أثناء الفترة من ٢٠٠٣-٢٠٠٥ . أحدى عشر نوعا من الحشرات القشرية والذباب الأبيض بالأضافة إلى الأسماء العامية والتوزيع الجغرافى والطفيليات المصاحبة لهذه الآفات التى تم تسجيلها . وقد اتضح من العمل أن هذه الآفات يصاحبها ٩ طفيليات وأن أكثر الأنواع الحشرية التى تصيب النبق هى الذباب الأبيض تليها الحشرات القشرية المسلحة و الحشرات القشرية الرخوة و البق الدقيقى على الترتيب.