

3

SURVEY OF INSECT PESTS INFESTING SUGARCANE IN EGYPT, WITH NEW RECORD OF ONE SPECIES

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Abstract

A survey study concerning insect pests infesting sugarcane from different localities in Egypt was conducted during 2004-2007. The results indicated the presence of 27 insect species, belonging to 16 families and 6 orders. These species distributed in 6 governorates. One of them, namely sycamore fig whitefly *Bemisia afer* (Prisener and Hosny) as a new record in Egypt on sugarcane .

INTRODUCTION

Sugarcane is an important cash crop of Egypt. It is mainly grown for sugar and sugary production. It is an important source of income and employment for the farming community of the country. It also forms essential item for industries like sugar, chip board, paper, barrages, confectionery, uses in chemicals, plastics, paints, synthetics, fibre, insecticides and detergents.

Sugarcane is a long duration crop of 10-18 months and therefore is liable to be attacked by a number of insect pests. According to an estimate, sugarcane production declines by 20.0 and 19.0 % by insect pests . The world sugarcane crop is infested by about 288 insects of which nearly two dozen causes heavy losses to the quality as well as quantity of the crop. A large variety of insects feed on sugarcane. Many are only occasional feeders but in most regions where this crop is grown insect pests are in significant factor in the economics of sugarcane production. The most pests of sugarcane are local species that have moved onto sugarcane from the habitat surrounding where the crop is cultivated. Pests of sugarcane can be grouped according to various criteria such as geographic distribution taxonomic grouping, severity of damage caused and feeding habit. Pests of sugarcane have been grouped by feeding habit ,i.e. pests that feed on stalks of sugarcane, on the subterranean parts of stools, on the plant sap feeders and on the leaves of sugarcane (Purseglove 1979).

Worldwide, sugarcane as an agroecosystem contains many insect species, both in aerial (above ground) and subterranean (below ground) habitats. Important pest species that inhabit the above ground part of sugarcane are in the following orders and families: Lepidoptera (Pyralidae, Noctuidae, and Castniidae), Homoptera (Aleyrodidae, Aphididae, Cercopidae, Coccidae, Delphacidae, Diaspididae, and Pseudococcidae), and Orthoptera (Acridoidea). Soil sugarcane insect pests are

represented by Coleoptera (Curculionidae, Elateridae, and Scarabaeidae), Isoptera (Mastotermitidae, Rhinotermitidae, and Termitidae), Hymenoptera (Formicidae), Diptera (Stratiomyidae), Heteroptera (Cicadidae, Cydnidae, Margarodidae, and Pseudococcidae), and Orthoptera (Gryllidae and Gryllotalpidae). Readers are encouraged to refer to Williams *et al.* (1969).

Major insect pests of sugarcane in Egypt can be divided into two groups, i.e. the stemborers (Lepidoptera: Pyralidae) and soil pests (Coleoptera: Curculionidae, Elateridae, and Scarabaeidae). Also, recently piercing sucking mouth parts ((Aleyrodidae, Coccidae and Pseudococcidae). The Main insects of sugarcane in Egypt are: Stalk borer/ striped stem borer (lesser sugarcane stem borer) *Chilo agamemnon* Blez. , purple stem borer, (greater sugarcane worm) *Sesamia cretica* (Led.), european corn borer , *Ostrinia nubilalis*(Hub.), soft Scale Insect, *Pulvinaria tenuivalvata* (Newstead), dangerous Insect, The leaf midrib miner, *Cosmopterix pararufella* Riedl (Lepidoptera: Cosmopterigidae) new insect in Egypt 2003 (Ebieda, 2007).

Many workers have been recorded and studied the pests and their IPM including parasitoid and predators e.g. Abd-Rabou,2000, 2002a,b, 2004,2007a,b), Abd-Rabou and Abd.El-Samea, 2005, 2006, Ebieda, 2007, Ebieda et al.1998, El-Mandarawy, 1997, Maareg et al., 1993, Maareg at al., 1992, El-Khouly et al. 2004, El-Serwy, 2004, Karam and Abu-Elkhir, 1992.

This work was aimed to survey of pests infesting sugarcane in Egypt with emphasis on distribution.

MATERIALS AND METHODS

A survey of sugarcane pests was carried out all over Egypt during 2004-2007. All immature stage and adults of different species inhabiting sugarcane field were examined in the field, using a pocket lens then identified and recorded. In addition, different parts of the infested sugarcane plants and soil under the sugarcane plants were collected randomly and placed separately in paper bags for further examination in the laboratory. Identification of sugarcane pests was made by examining the adults and larvae in different media using the suitable keys of insect classification depending on the kind of pest.

RESULTS AND DISCUSSION

I. List of sugarcane pest species and their distribution in Egypt:

I. Homoptera

Family Aclerdidae

1. *Aclerda takahshii* (Kuwana) recorded in Daqahlya in April, 2004.

Family Aleyrodidae

2. *Bemisia tabaci* (Genna.), recorded in Qena in April 2006.

3. *B. afer* (Prisener and Hosny) recorded here for the first time and collected from Qena in December, 2007.

Family Aphididae

4. *Rhopalosiphum maidis* F., recorded in Qena in May 2006.

Cicadellidae

5. *Empoasca decipiens* Paoli, recorded in Qena in May 2006.

Coccidae

6. *Pulvenaria tenuivalvata* (Newstead) in Giza in October, 2007.

7. *Pulvinaria elongate* Newstead in Alxandria in October, 2007.

Diaspididae

8. *Melanaphis sacchari* (Zehn.), recorded in Qena in May 2006.

9. *Odonaspis saccharicaulis* recorded in Aswan in December 2006.

10. *Aulacaspis mmadiunensis* recorded in Sohag in December 2006.

Pseudococcidae

11. *Saccharicoccus sacchari* Ckll., recorded in Qena in July 2005.

II. Hemiptera

Pentatomidae

12. *Nezara viridula* L., recorded in Sohag in June 2006.

III. Hymenoptera

Formicidae

13. *Monomorium pharaonis* L., recorded in Sohag in August 2007.

IV. Lepidoptera

Cosmopterigidae

14. *Cosmopterx pararufella* Riedl recorded in Giza in June 2007.

Noctuidae

15. *Sesamia cretica* (Led.), recorded in Qena in April 2004.

16. *Spodoptera exigua* (Hub.), recorded in Qena in October 2007.

17. *Spodoptera littoralis* (Boisd.), recorded in Daqahlya in August 2006.

18. *Agrotis ipsilon* (Hub.), recorded in Daqahlya in July 2005.

Pyralidae

19. *Eldana saccharina* Walker recorded in Qena in October 2004.

20. *Chilo agamemnon* Bleszynski, recorded in Qena in June 2004.

V. Coleoptera**Scarabaeidae**

21. *Heteronychus licas* Klug recorded in Qena in October 2005.

22. *Pentodon algerinum* (Herbst) recorded in Qena in October 2005.

VI. Orthoptera**Acrididae**

23. *Anacridium aegyptium* (L.) recorded in Qena in August 2005.

24. *Euprepocnemis plorans* (Charp) recorded in Qena in August 2005.

25. *Thisoicetrus littoralis* (Rambur) recorded in Qena in May 2005.

Gryllidae

26. *Gryllus bimaculatus* Degeer, recorded in Qena in August 2005.

Gryllotalpidae

27. *Gryllotalpa gryllotalpa* L., recorded in Qena in June 2007.

This list included 27 species belonging to 16 families and 6 orders .. These species distributed in 6 governorates, Alexandria, Aswan, Daqahlyya, Giza, Qena and Sohag . Maareg et al. (1997) recorded, *A. takahshii* *A. mmadiunensis* and *O. saccharicaulis* attacking sugarcane for the first time in Egypt.. While Tantawi, 1983 recorded *E. saccharina* for the first time in Egypt. Also El-Serwy (2004) recorded *C. pararufella* infested sugarcane. *P. tenuivalvata* recorded as a key pest of sugarcane by Watson and Foldi, (2001). In (1992) Karam, and Abu-Elkhir recorded *P. elongata* as a second scale insect pest on sugarcane . During the present work *B. afer* recorded here for the first time in Egypt infested sugarcane.

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حصر للآفات الحشرية التي تصيب قصب السكر في مصر مع تسجيل نوع جديد

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تم فى هذا البحث عمل حصر للآفات الحشرية التي تصيب قصب السكر فى أماكن مختلفة من محافظات مصر المختلفة فى الفترة من ٢٠٠٤-٢٠٠٧. وقد بينت النتائج أن قصب السكر يصاب ب٢٧ نوعا من الآفات التي تنتمى ل ١٦ فصيلة و ٦ رتب وتوجد هذه الأنواع ٦ محافظات. ومن خلال العمل أيضا تم تسجيل حشرة الجميز البيضاء كأفة تصيب قصب السكر لأول مرة فى مصر.