

INSECTS AND MITES ASSOCIATED WITH PEANUT PLANT AT ISMAILIA GOVERNORATE IN BOTH NEW RECLAIMED AND OLD VILLAGE LANDS

GHADA S. REFAEI AND WALAA R. ABOU-ZAID

Plant Protection Research Institute, ARC, Dokki, Giza

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Abstract

In the present study, an intensive survey of insect and mite species associated with peanut plant at Ismailia Governorate in both new reclaimed and old village lands was carried out during two successive years; 2008- 2009.

Data proved that 48 insect and mite species belonging to 27 families were recorded from peanut plant during two the successive years 2008-2009. These species including harmful, visiting and beneficial insects.

Regarding to harmful and visiting insect and mite species collected from peanut plant 37 species belonging to 20 families and 9 orders, Hemiptera, Lepidoptera, Coleoptera, Hymenoptera, Thysanoptera, Diptera , Orthoptera and Acariformes were estimated during the two seasons. The most abundant species were aphids, thrips, white flies, leafhopper, spider mites, and variety of foliage feeders such as corn earworm, cutworm, and armyworm.

On the other hand, 11 species of beneficial parasites, predators and pollinators were surveyed from peanut plants. The recorded species were belong to seven families and four orders, Hemiptera, Coleopteran, Hymenoptera, and Neuroptera.

INTRODUCTION

Peanut Crop is one of the most important cash and exporting crops in the world. For many producers peanuts fit well in their crop rotations, provide a useful homegrown source of livestock feed, and offer a valuable cash crop option. Peanuts are attacked by many insects, they may damage any part of the plant. However, because cultural practices, weather conditions, and other factors vary widely, it is impossible to predict the insect problems (Wright *et al.*, 2006)

The major constraints to peanut are insect pests, mites and diseases. Some of them are controlled by cultural practices, while most are controlled by the use of insecticides.

The objective of this survey was to identify pests of peanut to guide extension programs in addressing their most critical needs and develop solutions to major problems facing peanut production in Egypt.

MATERIALS AND METHODS

This study was carried out on farmer's fields at Ismailia Governorate in two different agro ecological sites at new and old lands during two successive seasons 2008-2009, to monitor the occurrence and status of major pests and their associated natural enemies in peanut:

An area of about one Fadden in at least four sites at Ismailia Governorate in both new reclaimed and old village lands was selected, planted and cultivated with peanut plants. Each area were divided into four equal subdivisions represent cardinal sites (east- west- north and south). Normal agriculture practices were undertaken and there was no chemical treatments applied in all sites.

Different arthropods pests and diseases as well as natural enemies were monitored weekly in each site during the growing season. Daily records of main weather factors e.g. max., min and average temperature, relative humidity percentage and wind speed throughout the completely experimental period was estimated.

RESULTS AND DISCUSSION

Production of peanut as with all crops includes decisions on protecting the crop from damage by insect pests. This insect pests can be broadly categorized as subterranean pests, foliage feeders, and sucking pests. On the world scene, over 300 species of insect pests have been recorded from groundnuts. Some are important as vectors of viral diseases. In Egypt, the production of this crop is gaining popularity in new lands

This publication has been developed to assist farmers and those monitoring the peanut crop in identifying and sampling the major insect and mite pests of peanut in Egypt . where, insects and mite species associated with peanut plants were surveyed during two successive years 2008, 2009.

Data in table (1& 2) listed 48 insect and mite species belonging to 27 families surveyed from peanut plants during two successive seasons; 2008-2009, including harmful pests, visiting and beneficial insects.

Regarding to harmful insect and mite species collected from peanut plants, 37 species belonging to 20 families and 9 orders, Hemiptera, Lepidoptera, Coleoptera, Hymenoptera, Thysanoptera, Diptera , Orthoptera and Acariformes were estimated during two seasons. The most abundant species were aphids, thrips, white flies, leafhopper, spider mites, and variety of foliage feeders such as corn earworm, cutworm, and armyworm.

Most of these insects are a problem in peanut production and should keep their populations at low levels. Therefore, using biological and cultural insect controls is very essential. In addition, the use of beneficial insect habitats along crop field borders increases the presence of beneficial insects (Bugg, 1993; White *et al.*, 1995; Grez and Prado, 2000). These habitats provide shelter, food (pollen and nectar) and act as refuges that attract the natural enemies of pests.

Aphids, thrips, white flies, leafhopper, spider mites and caterpillars have many natural enemies some may occur naturally in the environment or available commercially.

Accordingly, in this study, peanut beneficial insects were surveyed and data (table, 2) revealed that, 11 species of beneficial parasites, predators and pollinators were monitored during two successive years 2008, 2009 from peanut plants. The recorded species belong to seven families and four orders, Hemiptera, Coleoptera, Hymenoptera, and Neuroptera.

Similarly, the literature on peanut insects and natural enemies from Commonwealth countries has been reviewed by Bass and Arant (1973), Feakin (1973), McDonald and Raheja (1980), Marlow (1998), Culbreath (2004), Chapin and Thomas (2005), Sprengel, (2005) and Guerena and Adam (2008).

Table 1. Insects and mites associated with peanut plants in Ismailia Governorate for both new reclaimed and in old village lands during 2008-2009 seasons.

SCIENTIFIC NAME	ORDER	FAMILY
A- Harmful insects and mites		
<i>Benicia tabaci</i> Genn	Hemiptera	Aleyrodidae
<i>Aphis craccivora</i> Koch.		Aphididae
<i>Aphis gossypii</i> Glover		
<i>Acyrtosiphon pisum</i> Harris		
<i>Myzus persicae</i> Sulzer		
<i>Empoasca decipiens</i> Paoli		Jassidae
<i>Empoasca distinguenda</i> Paoli		Pentatomidae
<i>Nezara viridula</i> L.		
<i>Thrips tabaci</i> Lind.	Thysanoptera	Thripidae
<i>Cosmolyce baeticus</i> L.	Lepidoptera	Lycaenidae
<i>Agrotis ipsilin</i> (Hufn)		
<i>Agrotis segetum</i> (Schiff)		
<i>Agrotis spinifera</i> (Hufn)		
<i>Autographa gamma</i> L.		
<i>Autographa ni</i> Hbn		
<i>Spodoptera exigua</i> Hun		
<i>Spodoptera luteobrosa</i> Led.		
<i>Spodoptera littoralis</i> (Biosd)		
<i>Syngnapha circumflex</i> Becker		
<i>Melanagromyza phaseoli</i> Tryon	Diptera	Agromyzidae
<i>Eotetranychus orientalis</i> (Klem)	Acariformes	Tetranychidae
<i>Tetranychus arabicus</i> Attiah		
<i>Tetranychus cucurbitacearum</i> Sayed		
B- Slightly harmful insects		
<i>Thisoicetrus littoralis</i> Ramb	Orthoptera	Acrididae
<i>Gryllus domestique</i> L.		Gryllidae
<i>Liogryllus bimaculatus</i> (de Geer)		
<i>Vanessa cardui</i> L.	Lepidoptera	Nemphalidae
<i>Pieris rapae</i> L.		Pieridae
<i>Etiella zinkenella</i> Treitschke		Pyralidae
<i>Rhizopera dominica</i> Fab.	Coleoptera	Bostrichidae
<i>Sitona lividipes</i> Fab		Curculionidae
<i>Phytonomus brunneipennis</i> Boh		
C- Visiting insects:		
<i>Hedychrum coelestinum</i> Spin	Hymenoptera	Chrysididae
<i>Aumenes maxillosa</i> D Geer		Eumenidae
<i>Chalicodema siculum</i> Risso		Megachilidae
<i>Pollis Gallica</i> L.		Vespidae
<i>Tachysbhex aegyptiacus</i> Morico		Sphegidae

Table 2. Beneficial insects (parasites, predators and pollinators) associated with peanut plants in Ismailia Governorate for both new reclaimed and old village lands during 2008-2009 seasons.

SCIENTIFIC NAME	ORDER	FAMILY
<i>Calosma chlorostictum</i> Dej.	Coleoptera	Carabidae
<i>Coccinella lundecimpunctata</i> L.,		Coccinellidae
<i>Coccinella septempunctata</i> L.,		
<i>Cydonia vicina</i> var. <i>isis</i> Gr.		
<i>Cydonia vicina</i> var. <i>niloticus</i> Muls		
<i>Scymnus syriacus</i> Mars		
<i>Paederus affierii</i> Koch		Staphilinidae
<i>Orius leavigatu</i> (Fieb)	Hemiptera	Anthocoridae
<i>Chrysoperla carnea</i> (Steph)	Neuroptera	Chrysopidae
<i>Andrena evatula</i> (K)	Hymenoptera	Andreidae
<i>Apis mellifera</i> Latr.		Apidae

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حصر لأنواع الحشرات و الأكاروسات المتواجدة على نبات الفول السوداني في
الأراضي الجديدة المستصلحة و القديمة في محافظة الإسماعيلية
خلال موسمي ٢٠٠٨-٢٠٠٩

غادة رفاعي ، ولاء أبوزيد

معهد بحوث وقاية النباتات - مركز البحوث الزراعية - النقي - الحيزة

تم إجراء هذا الحصر في مناطق التجارب على فترات دورية كل سبع أيام ، أوضحت نتائج الحصر للحشرات و الأكاروسات المتواجدة على نبات الفول السوداني في الأراضي الجديدة المستصلحة و القديمة في محافظة الأسماعيلية خلال موسم ٢٠٠٨-٢٠٠٩ عن وجود ٤٨ نوعا متضمنة الأفات الضارة و الحشرات الزائرة و النافعة:
بالنسبة للحشرات الضارة والزائرة للنباتات تم حصر ٣٧ نوعا تنتمي الى ٢٠ فصيلة و ٩ رتب ، بينما سجلت الحشرات النافعة (المفترسات و الطفيليات) ١١ نوعا تنتمي الى ٧ فصائل و ٤ رتب.