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STUDYING SOME ECOLOGICAL ASPECTS ASSOCIATED WITH THE PREVALENT LAND SNAILS AT KAFR EL-SHEIKH GOVERNORATE.

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ABSTRACT

Survey and diustribution of the land snails infested the different plants at Kafr El – Sheikh Governorate were run in some areas during two succissine seasons, 1998/1999 and 1999/2000 seasons. The results proved the occerrence of six herbivorous snails species belonged to three families i.e. Helicidae, succinidae and zonitidae. The Helicoidae family was represented by four species (*Monacha contiana*, *Eobania vermiculata*, *Theba pisana* and *Cochilcella acute*). The outher two species were *Succinea putris* and *Oxychilus alliovus* belonged to succindae and zonitidae families , respectively while Succinea putris and Oxychilus alliavus belonging to the familie Succinidae. On the other hand, the distribution and infestation levels of the surveyed land snails varied according to localities and host plant , whereas *Monacha cantiana* snails were recorded in all surveyed localities, attacking several plants including field crops, horticultural and fruit trees. It seemed to be the key pest at all the surveyed localities, where ornamental plant were found to be the preferable host for *Eobania vermiculate* at all studied districts. *Theba pisana* were found with heavy infestation on *Duranta sp., Rosa Pelargonium zonal, Brassica oleracea* and *Lactica sativa* at Balteem, while *Cochlicella acuta* was found with severe infestation on *Pesidium guajava*, *Ficus carica*, *Trifolium alexandrinum*, *Citrus sinensis* and *Casuarina equistifolia* , *Cochiiella acuta* snails were found with heavy infestation *Casuarina equistifolia* , *Pesidium guajava* , *Citrus sinensis* and *Trifolium alexandrinum* at Sakha , and with moderate infestation on *Zea maize* at Balteem and *Phoenix dactylifera* at Messer. *Succina putris* snails trifolium alexandrinum and most vegetable crops severely infested at all the localities while *Theba pisana* were found on ornamental plants in all surveyed localities , especially in the gardens at Belteem and Sakha.

INTRODUCTION

Recently, land Molluscs have become very prevalent animals in most of world countries. There are about 128000 species of Molluscs and these include approximately 12000 species of pulmonata , both Basommat – ophora and stylommatophora.

In Egypt , land snails have been concentrated in northern Governorates of Delta region and now , it located in middle Egypt too on several host plants. These animals are active all year but their activities increase in spring and autum seasones. The land Molluscs include snails and slugs of high economicimportance because the damage they do in agriculture, horticulture and forestry, it attacking various crops, causing great damage to the soft vegetative parts of the plants, flowers , roots and tubers. Furthermore, some fresh water snails species serve as intermediate hosts

for certain harmful parasitic flat worms. On the other hand , many authers surveyed certain land snails which appear to be serious pests causing great damage to agricultural crops , sutch as *Monacha sp.* and *Oxychilus sp.* on Egyptian clover, El – okda (1984)., *M. cartusiana* and *Helicella vestalis* on Egyptian clover, cabbage , lettuce , broad bean and wheat, El – sayed (2001) and El – Deeb , (1996) .

On the bases of the fact the ecological informations are very important to design an successful control programs to protect crops from land snails , infestation our efforts were forsed to gain more information about the occurance and the relative abundant of various land snail species on certain crops at kafer – El – sheikh Governorate .

MATERIALS AND METHODS

An Ecological studies had been run under the different ecosystem of Kafr – El- sheikh Gov. to survey the land snails species , their distribution and host preference. The study locations were El – Hamool , Balteem sakha and Meseer. In this respect , plantations of field crops as Egyptian clover, sugar beet, horticulture crops as guava , navel orange and vegetable crops as lettuce, cabbage were monthly surveyed at the period from September to August during the two successive seasons , 1998 / 1999 and 1999 / 2000 .

In each location , one feddan from each plant species was randomly chosen and 5 % wetted methomyl bran bait were distributed beside and under plant before sun set as land snail traps, El – okda , (1976). The trapped snails were collected and transported in white close bags to the laboratory and identified according to Godan (1983).

RESULTS AND DISCUSSION

Data presented in Table (1) revealed that the herbivorous land snail species belonging to family Helicidae and succinidae were found on different host plants at Kafr El- sheikh Governorate. These species were *Monacha , Contiana, Eobania Vermiculata, Theba pisana, Cochlicella acuta, Succinea putris* and *oxychilus alliavrus*. The identified species varied in incidence and level of infestation according to each locality and host type. *Monacha cantiana* was recorded in all surveyed localities. Generally, the listed hosts can be classified into three categories according to the degree of infestation. These categories were, heavy, moderate and light infestation. The majority of the examined crops were found with heavy infestation especially *Trifolium* alexandrinum, *Beta vulgaris , Brassica oleracea* at El – Hamool district and with moderate infestation on *Ficia faba , Lactuca sativa, Pesidium guava , Citrus sinensis , Cucumic sativa* and lacurbita pepo in the same Location other snails showed Limited distribution. *Eobania vermiculata* were counted with heavy infestation on certain ornamental plants, i.e. *Duranta sp., Pelargonium zonal* and *Rosa spp.*, in Balteem. On the other hand, *Theba pisana* snails were found on

Table (1):Survey and distribution of Terrestrial gastropoda at different locations of Kafr El - Sheikh Governorate.

Location	Snail species	Host plant and level of infestation
El - Hamool	*Monacha contiana*	*Trifolium alexandrinum (+++)*
		Vicia faba (++)
		Beta vulgaris (+++)
		Citrus sinensis (++)
		Pesidium guava(++)
		Lactuca sativa (++)
		Brassica oleracea(+++)
		Cucmic sativus (++)
		Cacurbita pepo (++)
	Cochlicella acuta	*Trifolium alexandrinum (+++)*
		Vicia faba (+)
		Citrus sinensis (+++)
		Pesidium guava(+++)
		Casuarina equistifolia (+ + -)
	Theba pisana	*Pesidium guava(++)*
		Citrus sinensis (+++)
		Lactuca sativa (+++)
		Brassica oleracea(+++)
		Pelargonium zonal (+++)
	Succinea putris	*Tnfolium alexandrinum (+++)*
		Lactuca sativa (+++)
		Brassica oleracea(+++)
		Cucmic sativus (++)
	Eobania vermiculata	*Beta vulgaris (+++)*
		Vicia faba (++)
		Pesidium guava(++)
		Citrus sinensis (++)
		Pelargonium zonal (+++)
		Duranta (++)
	Oxychilus alliarus	*Trifolium alexandrinum (++)*

Table (1): Cont .

Location	Snail species	Host plant and level of infestation
Balteem	*Monacha contiana*	*Trifolium alexandrinum (+++)*
		Vicia faba (+++)
		Lactuca sativa (+++)
		Brassica oleracea(++)
		Citrus sinensis (+++)
		Pesidium guava(++)
		Pheonix daciylifera (++)
	Cochlicella acuta	*Pesidium guava(+++)*
		Trifolium alexandrinum (+++)
		Zea maize (++)
		Casuarina equistifolia (+++)
		Ficus carica (+++)
	Theba pisana	*Duranta sp. (+++)*
		Rosa sp. (+++)
		Pelaigonium zonal (+++)
		Ficus sp. (+ ++)
		Pesidium guava(++)
		Citrus sinensis (+)
		Brassica oleracea(+++)
		Cucumic sativus (+++)
	Eobania vermiculata	*Rosa sp. (+ ++)*
		Duranta sp. (+++)
		Pelaigonium zonal (+++)
		Cucumic sativus (+++)
		Lactuca sativa (+++)
		Brassica oleracea(++)
	Succinea putris	*Trifolium alexandrinum (+++)*
		Brassica oleracea(+++)
		Vicia faba (++)
		Lactuca sativa (+++)
		Cucumic sativus (+++)
		Decus carrota (+++)
		Cacurbita pepo (++)

Table (1): Cont .

Location	Snail species	Host plant and level of infestation
Sakha	*Monacha contiana*	*Trifolium alexandrinum (+++)*
		Triticum sativum (+)
		Zea maize (++)
		Ficia faba (++)
		Citrus sinensis (+++)
		Pelargonium zonal(++)
		Casuarina zonal (+++)
	Succinea putris	*Trifolium alexandrinum (+++)*
		Lactuca sativa (+++)
		Brassica oleracea(+++)
		Dacus carota(++)
	Cochlicella acuta	*Pesidium guava(+++)*
		Citrus sinensis (++)
		Trifolium alexandrinum (++)
		Casuarina equistifolia (+++)
	Theba pisana	*Duranta sp. (+++)*
		Rosa sp. (+++)
		Brassica oleracea(+++)
		Musa sp. (++ +)
		Rosa sp. (+++)
	Eobania vermiculata	*Ficus sp. (++)*
		Musa sp. (++ +)
		Brassica oleracea(+++)
		Lactuca sativa (++ +)
		Dacus carota(++)
		Pesidium guava(+)
		Citrus sinensis (++)
		Duranta sp. (++)
Meseer	*Monacha contiana*	*Trifolium alexandrinum (+++)*
		Triticum sativum (++)
		Ficia faba (++)
		Brassica oleracea(+++)
	Succinea putris	*Trifolium alexandrinum (+++)*
		Lactuca sativa (+++)
		Brassica oleracea(+++)
		Dacus carota (++)
	Cochlicella acuta	*Trifolium alexandrinum (++)*
		Casuarina equistifolia (+ ++)
		Pesidium guava(+++)
		Pheonix daciylifera (++)
	Theba pisana	*Brassica oleracea (+++)*
		Dacus carota (++)
		Rosa sp. (+++)

(+++) Heavy infestation (more than 30 snail / 50 x 50 cm)
(++) Moderate infestation (16 - 30 snail / 50 x 50 cm)
(+) Light infestation (1 -15 snail / 50 x 50 cm)

Duranta sp., *Rosa sp.*, *Pelargonium zonal*, *Brassica oleracea* and *Cucumic sativa* with light infestation at Balteem while *Cochlicella acuta* were found by heavy infestation on *pesidium* , *guava* , *ficus* , *Trifolium alexandrinum* , *citrus sinesis* and casuarina equistifolia in Balteem and El – Hamool. In Sakha, *Cochlicella acuta* were found with heavy infestation on *Casuarines equistifolia* , *pesidium guava* , *citrus sinensis* and *Trifolium alexandrinum* , and with moderate infestation on *zea maize* in Balteem and *Phoenix dactylifera* in Messer. Heavy infestation with *Succinea putris* were found on *Trifolium alexandrinum* and *most* vegetable crops in all surveyed localities. *Theba pisana* and Eobania vermiculata were found on arnamental plants in all surveyed localities especially in the garden at Balteem and sakha

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The obtained results agree with those of Abd – Allah (1994) who mentioned that, *Monacha cantiana* was the most distributed species on various field crops especially *Trifolium alexandrinum* at Damietta Governorate, El – Deeb *et al.*, (1996) recorded that, *Trifolium alexandrinum*, *Succinea putris* and *Eobania vermiculata* land snail species were dominant species in Dakahlia and Kafr El – Sheikh Governorates. Sharshir (1996) and Ismail (1997) recorded *Monacha spp.*, with relatively high numbers on mgjor economic crops at Kafr El – Sheikh and sharkia Governorates.

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دراسة بعض الظواهر البيئية المرتبطة بالقوقع الأرضية بمحافظة كفر الشيخ

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حصر وإنتشار القواقع الأرضية الضارة لمختلف النباتات بمحافظة كفر الشيخ ، والتي كانت موجودة في بعض المناطق خلال موسمى متتاليين (١٩٩٨/١٩٩٩ ، ١٩٩٩/٢٠٠٠) .
ومن النتائج المتحصل عليها وجود ٦ أنواع من آكلات العشب والتي تنتمي الي ٣ عائلات Helicaida , succinidae , zonitidae..
– عائلة Helicaidae وجد بها أربع أنواع وهي :
Monacha contiana , Eobania vermiculata, Theba pisana cochilcella acute).
– القوقع *Succinea putris* ينتمي إلي عائلة Succindae والقوقع *Oxychilus alliovus* ينتمي الي عائلة Zonitidae بينما *Oxychilus alliavus, Succinea putris* تنتمي إلى عائلة Succinea. ومن ناحية أخري تم تحديد مستويات الضرر الناتجة عن الأنواع المختلفة من القواقع الأرضية التي تم حصرها وذلك تابعا للعائل النباتي والموقع الذي تمت الدراسة به ولاحظ أن قوقع البرسيم M.contiana قد سجل في جميع الأماكن التي أجريت بها الدراسة علي انتشار مستويات الضرر التي حصرناها من القواقع الأرضية تختلف تبعا إلى مواقع العائل النباتي ، بينما قوقع البرسيم الزجاجي (Monacha contiana) سجل في كل الأماكن التي تم حصرها .
وبناء علي ذلك تهاجم القواقع الأرضية كثير من العوائل النباتية مثل المحاصيل الحقلية والمحاصيل البستانية في صورة وبائية تشمل جميع المناطق التي تم حصرها وكذلك تهاجم نباتات الزينة وخاصة قوقع الحدائق البني Eobania vermiculata وقوقع Theba pisana وجد أنه ذو ضرر جسيم علي أنواع النباتات *Duranta Sp., Rosa Spp., pelargonium zonal , Brassica oleracea and Lactica sative* في بلطيم بينما قوقع *Cochlicella acuta* يعتبر من القواقع ذات الضرر الكبير .
Casurina equistifolia , pesidium guajava , citrus sinensis and Trifolium alexandrinum zea maize في سخا ، والضرر المتوسط في بلطيم Phoenix dactylifera في مصر ووجد قوقع Succina putris، Trilolium alexandrinum في بعض المحاصيل الحقلية في كل المواقع بينما قوقع Theba pisana وجد علي نباتات الزينة في كل المواقع التي تم الحصر بها . وخاصة في حدائق بلطيم وسخا .