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Studies on the Definition of Rodent Species at Farshut District, Qena Governorate, Egypt

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Abstract

This study was carried out to identify rodent species in the old areas of Al-Dahsa village in Farshout district, Qena governorate, in field crops and buildings during two consecutive years (2018 and 2019). The study revealed the presence of two rodent species (such as Arvicanthis niloticus and Rattus rattus frugivorus) in the field crops. While the study revealed the presence of three species of rodents (Mus musculus, Rattus rattus frugivorus, and Rattus norvegicus) in the buildings. The study also revealed an increase in the density of rodents in field crops in the first and second years as follow: R. r. frugivorus (55.46 and 55.65%), A. niloticus (44.54 and 44.35%) for the first and second year, respectively. In buildings, the domestic mouse M. musculus was the most widespread species, accounting for 48.39% and 44.44% of the total rodents trapped for each of the first and second years. It is followed by Rattus norvegicus with 29.03% and 34.19%. R. r. frugivorus was the last species occurring 23.39% and 21.37%. This study is useful for choosing the most appropriate control methods for the rodent species spread in the study area.

Keywords: Field Crops; Buildings; Arvicanthis Niloticus; Rattus R Frugivorus; Rattus Norvegicus; M Musculus

Introduction

Rodents are global in their distribution and they constitute the largest group of mammals represent nearly 40%, of all mammals living at the present time Bajomi [1]. Hoogstral, et al., [2] surveyed 51 species of rodent in Egypt, belonged to sub-order; Myomorpha, eleven species fall under family Muridae, subfamily; Murinae (genera: Arvicanthis, Rattus, Acomys, Mus and Nesoke) are domestic and commensal animals found abundance, while five families are low abundance in desert and semi-desert. Many researchers found in Upper Egypt, Beni-Suif, El Minia, Assiut, Sohag and Qena Governorates the dominant rate species were, R. norvegicus, R. rattus, A. cahirinus A.niloticus, M. musculus, Geribilus spp. and Juculus spp. The dominant species and density related to habitats, crop installation, nearly reclamation land and abundance shelter and food and seasons, Salit, et al., [3], Abazid [4] , Hussein [5]; El-Deep and Lokma [6]; Embarak [7] and Desoky 2007 [8]. The aim of the current study is to know the rodents scattered in the center of Farshout, Qena Governorate.

Materials and Methods

Survey of rodents in old areas at EL-Dahasa village (located at 76 km. North of Qena Governorate), Farshut district, Qena Governorate was carried out in the field crops and a building was carried out during two successive years (2018 and 2019).This area has been planted from a long period with isolated patches of vegetables, wheat, Egyptian clover, palm trees, cattle farm, alfalfa and different orchards as well as a building and a poultry farm. The total wire-box traps were 50 wire-box traps of the usual spring door (25×12×10 cm) in the month. Were baited and distributed at 6pm and

examined each morning and the bait was replaced by fresh one. Trapped rodents were transferred to the laboratory for identified according to Osborn and Helmy [9].

Results and discussion

The study revealed the occurrence of two rodent species in field crops (viz., Arvicanthis Nilotic us and Rattus rattus frugivorus) these rodents belong to family Muridae, Suborder Myomorpha, order Rodentia Table 1 and Figure 1. This viz., similar with Elrawy [10] in sugar cane at Qena Governorate where found that the presence of species of rats included the white bellied rat, R.r.frugivorus, Nile grass rat, *A.niloticus* and *R.r.frugivorus* the dominant species, this may be due to the presence of attributed to the availability of food and shelter as well as prefers trees for nesting in houses. Also this may be due to the inter-specific competition between this species and other species. The study revealed the occurrence of three rodent species in buildings (viz., Mus musculus, Rattus rattus frugivorus and Rattus norvegicus) these rodents belong to family Muridae, Suborder Myomorpha, order Rodentia Table 1 and Figure 2. This data agree with that obtained by El-Khayat [11] in buildings at Qalubia Governorate (Tukh district) where found that the presence of species of rats included Mus musculus (The house mouse), Rattus rattus (The climb rat) and *Rattus norvegicus* (The Norway rat). The abundance of rodent species in field crops in the first and second year. Could be arranged quantitatively in the following descending order:

- The White bellied rat, R. r. frugivorus (55.46and 55.65% for the first and second year, respectively).
- The Nile grass rat, A. niloticus (44.54 and 44.35% for the first and second year, respectively).

In the buildings, the house mouse M. musculus was the most dominant species constituting 48.39% and 44.44% of the total trapped rodents for both first and second year. Followed by the Norway rat Rattus norvegicus 29.03% and 34.19%. The white bellied rat R. r. frugivorus was the last species of occurrence 23.39% and 21.37% (Table 1). It may be concluded that the availability of preferred food in both areas led the rats to feed, and produce higher reproduction rat in both areas, wholly in agreement with the findings obtained by Abdel-Gawad et al., [12] & El-Feky [13].

Area	Study of year	Species/ total	Arvicanthis niloticus		Rattus rattus frugivorus		Rattusnorvegicus		Mus musculus	
			No.	%	No.	%	No.	%	No.	%
Field crops	2018	119	53	44.54	66	55.46	0	0	0	0
	2019	115	51	44.35	64	55.65	0	0	0	0
Buildings	2018	124	0	0	29	23.39	36	29.03	59	47.58
	2019	117	0	0	25	21.37	40	34.19	52	44.44
Total		475	104	21.89	184	38.74	76	16	111	23.37

Table 1: Survey of rodent species captured from study areas during two successive years at Qena Governorate, during 2018-2019 years.

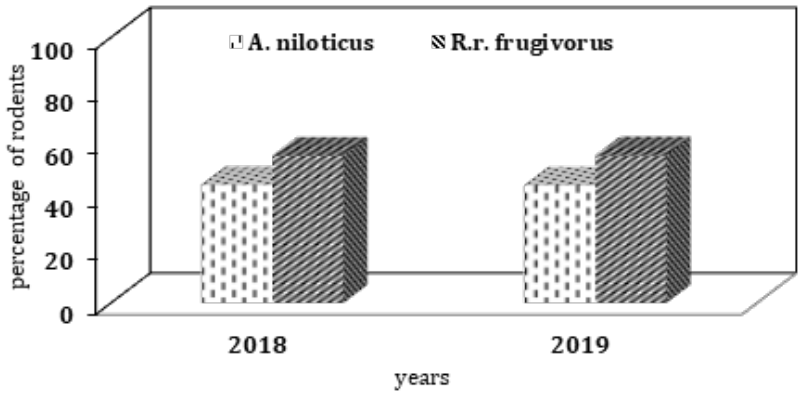

Figure 1: Percentage of rodent species in the field crops during two successive years at Qena Governorate.

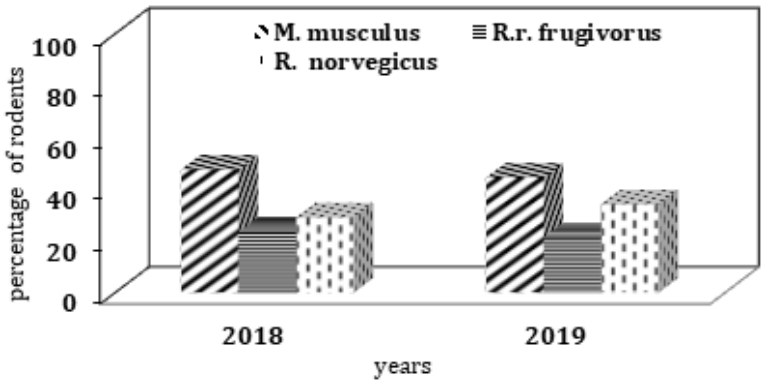

Figure 2: Percentage of rodent species in the buildings during two successive years at Qena Governorate.

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