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Survey of Animal Fauna in Gohayna District at Sohag Governorate, Egypt

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Abstract

The present work was aimed to identify of animal fauna in Gohayna District, Sohag Governorate, Egypt during 2020/2021season. The results were revealed the presence of four species of rats included the white bellied rat, Rattus rattus frugivorus the dominant species from, Rattus rattus alexandrines, the Nile grass rat, Arvicanthis niloticus. Rattus norvegicus and Gerbillus sp. Also, found that Mustela sp., and long-eared hedgehog, Hemiechinus auritus. These results to be used in the development of a future plan in effective strategy for implementation of animal pest's management programs in cultivated in Sohag Governorate.

Key Words: arvicanthis niloticus; rattus r. alexandrines; rattus r. frugivorus; rattus norvegicus mustela sp; hemiechinus auratus

Introduction:

Rodentia is one of the most important mammalian orders which has a great number of rodent species with their effect on the environment. Directly, through their destructive feeding habits and indirectly by a stable food items for many predators in the food chains. In Egypt changes in the agro-ecosystem, during the last 40 years, have had a great effect on the distribution and abundance of field rodent population (El-Sherbiny, 1987). Rodents are implicated in many types of damage, including crop and tree damage, structural property and cable damage, disease transmission (Witmer et al., 1998).

Rodents are known for their high reproductive potential; however, there is much variability among species as to the age at first reproduction, size of litters, and the number of litters per year. Under favorable conditions, populations of some species such as the microtines (e.g., voles) can irrupt, going from less than 100 per ha to several thousand per ha in the period of a few months (O'Brien 1994).There are many interesting dynamics to various rodent populations that should be understood to better facilitate their management and to reduce damage. The population goes through an annual cycle that may include high and low densities, active and inactive periods, reproductive and non-reproductive periods, and dispersal periods. To avoid inclement periods, some species exhibit winter dormancy (hibernation), and some species have summer dormancy (estivation) during hot, dry periods. Some species exhibit multi-year cycles; for example, the microtines often reach population peaks (irruptions) every 3-5 years (Edge et al., 1995 and Wolff et al., 1997).

All rodents require food, shelter, and water. The shelter provides protection from predators, inclement weather, and a favorable place to bear and rear their young. Although rodents require water, those water requirements vary greatly by species. Because rodent food and cover (i.e., vegetation) can be influenced by human activities, there has been considerable development of strategies to reduce populations and damage by manipulating vegetation. We will discuss some of these habitat management approaches, but caution that many of them have not been thoroughly investigated or tested on a large scale (Barras and Seamans, 2002). The present work was aimed to identify of animal fauna in Gohayna District, Sohag Governorate, in Upper Egypt, to be used in the development of a future plan in effective strategy for implementation of animal pest's management programs in newly reclaimed land in Egypt.

Materials and Methods:

Location of the study site:

- The study sites in Gohayna district northward away from Sohag Governorate, about 50 kilometers.

Animal pest's species were collected from the above-mentioned sites by applying the common wire traps. Each trap was baited by bread and distributed twice every 15 days at 6 pm Next morning at 7 am during study period, traps were checked, and animals were identified and recorded for data processing. The captured of animal pests were classified and recorded.

Results and Discussion:

Data in Table (1) show the species composition of rodents trapped from two different areas in animal fauna in Gohayna district, Sohag Governorate, Egypt. Species recorded were the white bellied rat, Rattus rattus frugivorus, the grey bellied rat, Rattus rattus alexandrinus and the Nile grass rat, Arvicanthis niloticus. Norway rat, Rattus norvegicus and Gerbillus sp. Also, found that Mustela sp., and long-eared hedgehog, Hemiechinus auritus.

In the Houses region found that the presence of four species of rats included the white bellied rat, R. r. frugivorus the dominant species from the Rattus rattus alexandrines, Nile grass rat, A. niloticus. , Rattus r.frugivorus and Mustela sp., at the study area. Rattus 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. On the other hand, in the fields crops the Nile grass rat, A. niloticus the dominant species from R. r. frugivorus, Rattus r. alexandrines, and its recorded long-eared hedgehog, Hemiechinus auritus However, R. norvegicus was not captured by the traps

The results similar with Ali (1985) recorded six species of rats and mice in Sohag Governorate. The species density percentages were arranged quantitatively in the following descending order R. norvegicus (35.17%), A. niloticus (19.86%), R. r. frugivorus (19.39%), R. r. alexandrinus (13.88%), M. musculus, (11.00%), Acomys cahirinus (0.72%).

Abdel-Gawad (1987) found those, three rodent species A. niloticus (Desm.), R. r. frugivorus and Gerbillus sp. Desm., in Wady El-Assiuty area, Assiut Governorate. He noticed that, A. niloticus (Desm.) preferred areas planted with the field crops and some parts under cultivation beside old cultivated land while R. r. frugivorus was found in citrus orchards and around fanners buildings, whereas Gerbillus sp. Desm., lived in desert and semi-desert parts where wild plants and weeds were grown.

Desoky et al., (2014) finding is in agreement with The results show in the experimental station of the Faculty of Agriculture, El-Kawther city, Sohag University , found that the presence of three species of rats included the Lesser garbia, Gerbillus sp. was recorded (1.08%) from newly reclaimed area; the Nile grass rat, A. niloticus (4.44%.) This may be attributed to the availability of food in neighbored field crops and vegetables plantations also, the white bellied rat, R. r. frugivorus the dominant specie (94.27 %.) This may be due to several factors e.g., intra-specific competition, fecundity increasing and in habitat the ecosystems in which poultry buildings established in the faculty farm the presence of palm trees in the preparation of farm animal production, or poultry farm nearby, this provides shelter and increase in feed stores.

The differences in species composition of rodents depending on locality, neighboring, habitat type, inter specific compotation and preferred food (Desoky et al., 2014).Identification of rodent species in the study area can be used in the development of a future plan in effective strategy for implementation of rodent management programs in newly reclaimed land in Egypt. (El-Sherbiny, 1987; Desoky, 2007).

Animal fauna	Study area		Common name
	Houses	Fields	
Rattus rattus frugivorus	+++	++	white bellied rat, date palm rat
Rattus rattus alexandrinus	++	+	the grey bellied rat
Arvicanthis niloticus	+	+++	Field rat, grass rat, Nile rat, Nile grass rat
Rattus norvegicus	+	-	street rat, sewer rat, Norway rat, brown Norway rat, Norwegian rat.
Gerbillus sp	-	+	Lesser garbia
Mustela sp	+	-	weasel
Hemiechinus auritus	-	+	long-eared hedgehog

+++ = High population
++ = Moderately population
+ = Slightly population
- = Absent

Table 1: List of animal fauna collected in Gohayna district, Sohag Governorate in Upper Egypt during 2020/2021 season.

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