

Comparison between Distribution of Rodent Species in Old and Newly Reclaimed Lands at Sohag Region, Egypt

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ABSTRACT

This study aimed to identify and distribute rodent species in old reclaimed lands at the experimental station of the Faculty of Agriculture, Sohag University in the Eastern Desert (El-Kawther city) and in newly reclaimed lands at the Agricultural Research of the Faculty of Agriculture, Sohag University, it is located in newly reclaimed area at the Egypt western desert (El-Kawamel city). The results showed that there was a large and quantitative combination of the old land compared to newly land reclamation because it is old land and contains more plant cover.

Keywords: rodent species, old reclaimed lands, newly reclaimed lands, eastern desert, and western desert

INTRODUCTION

Rodentia is one of the most important mammalian orders which have a great numbers 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). In Egypt, the changes of the environment by reclamation the desert and increase the cover plant in this area have been a great effect to the distribution of rodent species on abundance in the studied area (El-Sherbiny, 1987; Desoky, 2007 and Abdel-Gawad, 2010). This study aims to identify and distributions of rodent species in old and new reclaimed lands.

MATERIALS AND METHODS

The Present Work Was Carried Out in Two Area

Area (1)

The experimental station of the Faculty of Agriculture, El-Kawther city, Sohag University. It is located in newly reclaimed area at the

Eastern desert area as arid region (15km. East of Sohag Governorate). This area has been planted from a long period about (40 years) with isolated patches of vegetables, wheat, Egyptian clover, alfalfa and certain orchards.

Area (2)

The Agricultural Research of the Faculty of Agriculture, El-Kawamel city, Sohag University, it is located in newly reclaimed area at the Egypt western desert area (15km. west of Sohag Governorate). This area has been planted from a long period about (15 years) with isolated patches of vegetables, wheat, Egyptian clover, alfalfa and certain orchards.

The present work was initiated to study the following main points:

- Identification of the different species of rodents
- Distribution of rodent species

Rodent species were collected from the above mentioned sites by applying the common wire traps during 2017/2018. Each trap was baited and distributed twice every 15 days at 6 pm. Next morning at 7 am, traps were checked and rodents were identified and recorded for data processing.

The captured rodents were classified and recorded. The Percentage of every species was

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estimated as a percent from total rodents captured during the year dominant percentage.

RESULTS AND DISCUSSION

Data show the species composition of rodents trapped from study area, old and newly reclaimed lands. Four rodent species were concerned as shown in table (1). One species belonged to family cricetidae, named lesser garbia *Gerbillusgerbillus* Olivier and three species of family muridae were recorded. Species of family muridae include field rat *Arvicanthisniloticus* Desmarest, grey bellied rat *Rattusrattusalex* and *rinus* Linnaeus, white bellied rat *Rattusrattusfrugivorus* Linnaeus, Norway rat *Rattusnorvegicus* Berkenhout and house mouse *Musmusculus* Linnaeus.

Area (1)

In old reclaimed lands found that the presence of three species of rats included the white bellied rat, *R. r. frugivorus*, grey bellied rat *Rattus r. alexandrines*, Nile grass rat, *A.*

niloticus 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.

Area (2)

In newly reclaimed lands found that the presence of four species of rats included the white bellied rat, *R. r. frugivorus*, grey bellied rat *R. r. alexandrines*, Nile grass rat, *A. niloticus*. And lesser garbia) desert rat), *Gerbillusgerbillus*, at the study area. *R. r. frugivorus* the dominant species so, it is a lowest number than the old reclaimed lands due to the non-spread of trees especially palm trees in newly reclaimed land and because it is a newly desert area reclamation has been surveyed to a type of desert rodents. On the other hand *R. norvegicus* and *M. musculus* were not captured by the traps in two areas.

Table1. List of rodent species collected in the old and newly land reclamation, Sohag University, during 2017/2018.

Rodent species	Area	Old reclaimed lands	Newly reclaimed lands	Common name
Fam. Cricetidae: <i>Gerbillusgerbillus</i> (Olivier)		-	+	Lessergarbia
Fam. Muridae <i>Rattusrattusfrugivorus</i> (Linnaeus)		+++	++	White bellied rat, date palm rat
<i>Rattusrattus alexandrines</i> (Linnaeus)		++	+	grey bellied rat
<i>Rattusnorvegicus</i> Berkenhout		-	-	Norway rat, brown rat and sewer rat
Fam. Muridae <i>Arvicanthisniloticus</i>		++	+	Field rat, grass rat, Nile rat, Nile grass rat
<i>Musmusculus</i> Linnaeus		-	-	house mouse

+++ = High population

++ = Moderately population

+ = Slightly population

- = Absent

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. alexandrines* (13.88%), *M. musculus*, (11.00%), *Acomyscahirinus* (0.72%). 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 computation and preferred food (Desoky et al., 2014). Identification of rodent

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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). Desoky (2016) In the experimental station of the Faculty of Agriculture, El-Kawamel city, Sohag University found that the presence of two species of rats included the Nile grass rat, *A. niloticus* (27.52%) the white bellied rat, *R. r. frugivorus* the dominant specie (72.48 %.) This may be due to the presence of attributed to the availability of food and shelter as well as prefers trees for nesting. On the other hand this may be due to the inter-specific competition between this species and other species. The results of this research can be used in the development of a future plan in effective strategy for implementation of rodent management programs in cultivated and newly reclaimed agro ecosystems in Egypt.

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