

EFFICACY OF SOME PREDACIOUS BIRDS ON COMMON RODENTS

By

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B.Sc. Agric. Sc. (Entomology), Ain Shams University, 2006

**A thesis submitted in partial fulfillment
of
the requirements for the degree of**

MASTER OF SCIENCE

in

**Agricultural Science
(Agricultural Zoology)**

**Department of Plant Protection
Faculty of Agriculture
Ain Shams University**

2013

Approval Sheet

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ABSTRACT

Norhan Ahmed Mohammed Ahmed: Efficacy of Some Predacious Birds on Common Rodents. Unpublished M. Sc. Thesis, Department of Plant Protection, Faculty of Agriculture, Ain Shams University, 2013.

A random survey was conducted at El-Kalubiya and Fayoum Governorates during the period from Oct. 2009 to Sept. 2010 and from Nov. 2009 to Apr. 2010 respectively to determine the most common rodents and birds in these areas. Analysis of predacious birds of regurgitated pellets and preparing a reference collection from skeletal remains of the possible rodents and bird species could be found in the diet of the predacious birds were also conducted. The obtained results indicated that, the common rodent species of the two study areas were *Rattus rattus*, *R. norvegicus* and *Mus musculus*. Whereas the bird species at El-Kalubiya Governorate were, eight non-predacious bird species i.e. *Passer domesticus*, *Geopelia placida*, *Streptopelia sp.*, *Upupa epops*, *Corvus sp.*, *Bubulcus ibis*, *Motacilla alba* and *Hypolais pallida*. Two predacious bird species were i.e. Barn Owl, *Tyto alba* and Eagle Owl, *Bubo bubo*. Regurgitated pellets were collected from the roosting sites of Barn Owl and Eagle Owl at El-Kalubiya Governorate during the period from Oct. 2009 to Sept. 2010 and Oct. 2010 to Sept. 2011 and from Barn Owl at Fayoum Governorate from Nov. 2009 to Apr. 2010. Pellets analysis indicated that, at El-Kalubiya Governorate: During the first year of study 2009-2010: one hundred pellets of Barn Owls were analyzed, 41 of them contained birds, 41 contained rodents and 18 contained birds and rodents. While during the second year of study 2010-2011 fifty five pellets were analyzed, 8 of them contained birds, 29 contained rodents and 18 pellets contained birds and rodents. Regarding to the Eagle owl, during the first year of study 2009-2010: 174 pellets were analyzed 85 of them contained birds; 66 contained rodents and 23 pellets contained birds and rodents. During the

second year of study 2010-2011:119 pellets were analyzed 93 of them contained birds; 14 contained rodents' and 12 pellets contained birds and rodents. During the first year of study 2009- 2010. Birds and /or birds and rodents were the main food in the pellets of Barn owl and Eagle owl during seasons of autumn and summer. Similar trend was observed during the second season. At El-Kalubiya Governorate during the season of 2009 -2010 a total of 117 and 195 prey items consumed by Barn Owl and Eagle Owl respectively. Whereas in 2010-2011, a total of 73 and 125 prey items consumed by Barn Owl and Eagle Owl respectively.

At Fayium Governorate, eighty one pellets of Barn Owl were analyzed. Pellets contents, their numbers and average percentage were: birds (3) 3.7%; rodents (60) 74.1%; Birds and Rodents (11) 13.6 %; insectivorous (2) 2.5%; rodents insectivorous (4) 4.9%; and birds and insectivorous (1) 1.2 %. A total of 160 prey items were found in 81 pellets of Barn owl. Its worth to report that the insectivorous species *Crocidura sp* found in Barn Owl pellets at Fayium.

Another trial for rodent control in this study was conducted, these trial was enhancement the rodents baits by adding some food additives viz, garlic oil (5%), soybean oil (5%), mustard oil (5%) and carbon disulfide (1%) to the adult Albino male rats under no-choice and bi-choice feeding trials. Results revealed that, in no-choice test, carbon disulphide was the best additive as it increased the food consumption in upto 81.2 % compared to the control followed by mustard oil 69.9 %, and garlic oil 69.3%, the lowest effect was recorded for soybean oil (62.3 %). In bi- choice tests, there was a significant difference in the food consumption among the tested food additives when tested against each other. Generally carbon disulphide and mustard oil were the best food additives where it increased the food consumption, but when tested against each other, carbon disulphide was the superior.

The present study indicated that Barn owl and Eagle owl could be used as a potential bio control agent against rodent pests. Cracked maize mixed with carbon disulphide, mustard oil and garlic oil may be used as a

bait base for controlling rodent pests either using traps or mixed with poison baits.

Key words: Rodent pests, Rats, Predacious birds, Barn owl, Eagle owl, Biological control, Rodent baits and food additives.

ACKNOWLEDGEMENTS

All praises are due to Allah, who blessed me with kind professors and colleagues, and gave me the support to finish this thesis. The writer wishes to express her deep thanks to late **Dr. Mohmoud Ezzeldin Tharwat**, Professor of Agricultural Zoology, Faculty of Agriculture, Ain Shams University, for suggesting the research work, kind supervision, and his faithful encouragement.

I would like to extend my deepest appreciation and sincere thanks to **Dr. Sohail Samy Soliman**, Professor of vertebrate ecology and taxonomy, Faculty of Science, Ain Shams University, for supervising this work, plentiful advice and endless efforts provided for me to complete this work.

Sin care thanks are also due to **Dr. Ahmed Eid Abd El- Megeed Mahgoob**, Associate Professor of Agricultural Zoology, Faculty of Agriculture, Ain Shams University, for supervising this work, his great help provided for the accomplishment of this work and for his effort, and encouragement me throughout the course of this work.

Thanks and gratefulness to **Dr. Sherif Bayoumi Abd El-Ghani**, Associate Professor of Pesticides, Faculty of Agriculture, Ain Shams University, for his true efforts throughout the lab work.

Thanks will not be enough to my parents and my brothers for their help and sincere support.

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