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Effect of transferring the apiaries on activity of honey bee colonies.

BY

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Approval Sheet

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Contents

INTRODUCTION

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Activity and behaviour of the honey bee *Apis mellifera* L. depend upon many factors operating simultaneously and react to some environmental conditions in a similar manner wherever they occur. The factors which are responsible for decreasing the mean production per colony and low total yield, should be studied to know the best solvation for this problem.

According to the available statistics of 1978, in Kafr El-Sheikh Governorate, the total number of honey bee hives was 25302 and the mean weight of the produced honey was 17.45kg./ colony, while the mean produced wax was 57g. in the same mentioned year. In 1995 when the total number of hives was increased to 83902, the mean weight of the produced honey was decreased to 6.8kg./ colony.

Nowadays the total number of hives was 78176 and the mean produced honey/colony was 6.0kg., while the mean weight of produced wax was 50g./colony. This trend was observed in all counties of the country; in El-Beheira Governorate, according to the statistics of (1994), the total number of hives was 128188, and the mean weight of produced honey was 7.55kg./colony, as a result of the high density of colony population per sq. Km, which was 23 colony. This ratio was extremely high compared with other countries. The high density was a main factor of low average yield of honey per colony **(Sharaf, 1996)**. It could be mentioned that the overcrowdness of honey bee hives is responsible for the great reduction of the average honey yield per colony.

The aim of the present study is an attampt to solve the overcrowdness of apiaries problem in certain areas by moving to another suitable areas

in the time of blooming season, in order to increase the productivity of honey bee colonies.

In this investigations the effects of transferring the apiary on activity of honey bee colonies were studied, such as.

1- Foraging activity.

2- Weight of returning worker and its load of nectar.

3- Gathering and storing pollen.

4- Brood rearing activity.

5- Collection of royal jelly.

6- Wax secretion.

7- Honey yield.

REVIEW OF LITERATURE

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I- Survey of nectar and pollen sources.

Hussein (1982) studied the main pollen sources for honey bee colonies in Assiut. He found that, 56% of pollen loads were collected from legumes and followed by cruciferous plants (14.3%). The major pollen sources were *Vicia faba, Trifolium alexandrinum, Brassica sinapis, Zea mays, Reseda odorata, Portulaca grandiflora, Daucus carota ,Phoenix dactylifera ,Citrus sp., Coriandrum sativum and Casuarina equisetifolia.*

Hussein (1983b) recorded 122 plant species to produce pollen grains in Assiut Governorate. They are belonging to 48 plant families; 87 ornamental, medicinal and aromatic plants , 15 fruit plants , 8 vegetable plants, 6 field and forage crops and 6 wild plants.

In Fayoum Governorate, **Ghoniemy (1984)** stated that, there were three groups of pollen sources, the first group contained the four major sources: *Zea mays, Vicia faba, Trifolium alexandrinum and Citrus* spp. The pollen collected from these sources per colony representing 82.02 and 82.66% from the total amount of pollen collected all over the year during 1981 and 1982, respectively. The second group contained : *Pheonix dactylifera, Eucalyptus* spp., *Salix aegyptiaca* and *Brassica kaber* Koch. The pollen collected from these sources representing 8.65 and 7.29%.The third group contained: *Xanthiumum spinosum, Cichorium pumilum, Helianthus annus* and *Chrysanthemum carinatum.* Pollen collected from them representing 4.92 and 4.34%. In addition to these main groups, there were wild weeds representing 1.73 and 1.96%, ornamental plants representing 1.33 and ston fruits trees 0.27% and 0.19%.