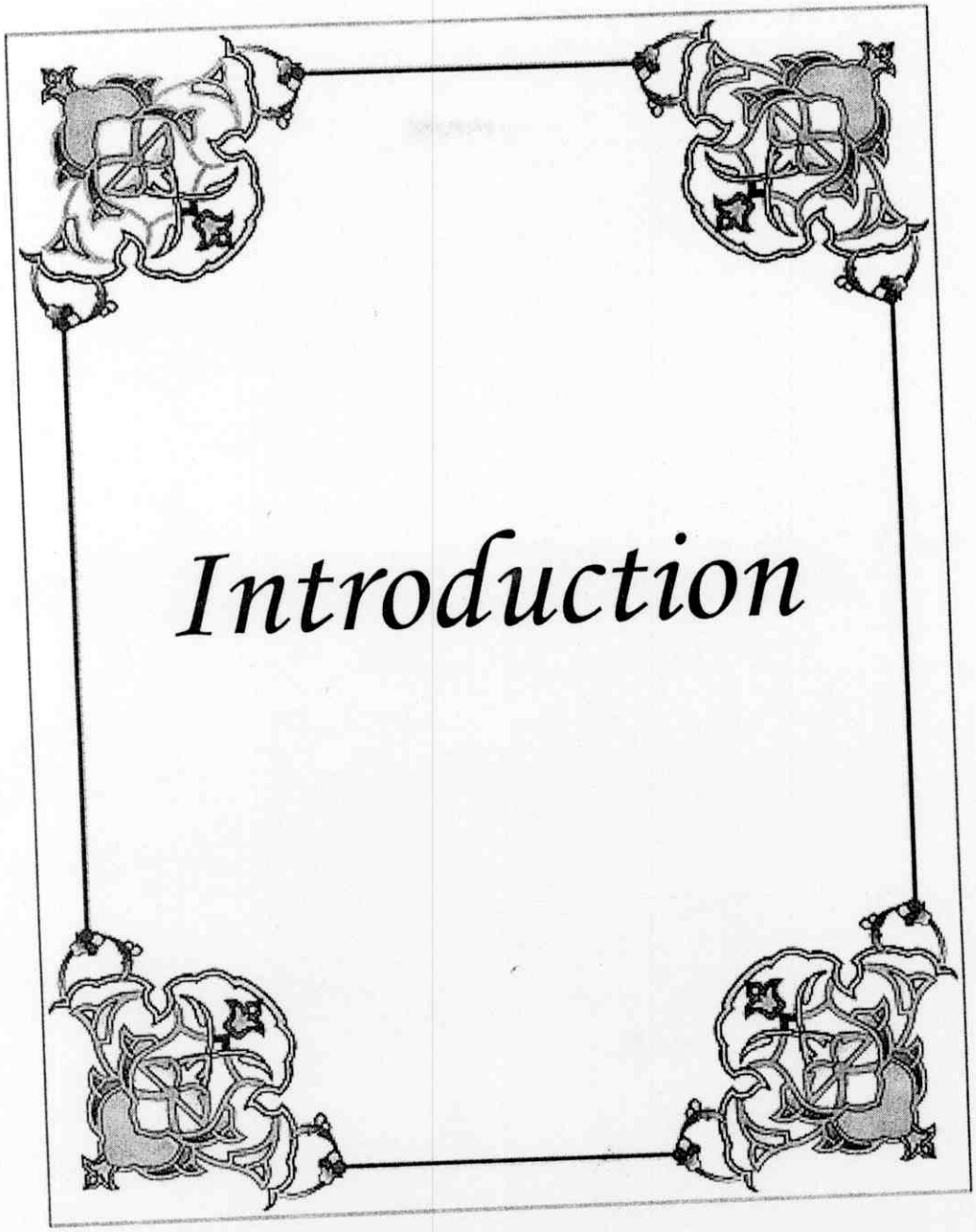

Introduction

INTRODUCTION

Pollen is the male reproductive cells produced by the anthers of flowering plants for purpose of transmitting gametes to the stigma of receptive female flowers. Pollen is usually transmitted from one flower to another by pollenator such as bees. From a bees point of view pollen is one of the most important product of the hive. Pollen supplies are the most bees nutrients for brood rearing as well as for adult growth and development. Without adequate pollen supplies which are obtained either through foraging workers or from stores in the form of (bee bread) at combs colony of honeybees could not long exist.

Bee health depend not only on honey, but also on pollen grains **(Hydak, 1970)** . Pollen is the protein source in honeybee nutrition (**Simpson, 1955**). The suitability of a location for honey production is depending on the pollen production. Honeybees depend as much on pollen as on nectar to sustain themselves **(Winston, 1987**). Pollen trapping can be used to study pollination and pollen flow (**Real, 1983**).

The objective of this study was to determine the pollen flow periods available for honeybees. This study was conducted at the apiary of Faculty of Agriculture, Moshtohor Benha University, and National Project for Honeybee Diseases & Pests Control. The following points were studied:

1- The amount of pollen trapped by each colony of bees examined for determind the sources, also the amounts of stored pollen in combs «bee bread» of hives were estimated and idintified of

plant sources, the local of the cultivated trees,crops and plants in the area.

2- The types of pollen traps were used in study for detected the efficacy of these types under different conditions. Pollen traps used for harvesting pollen collected by foraging workers to obtain the economic amounts produced from honeybee colonies during different seasons at Moshtohor region:

   a. Pollen gathering activity during Citrus season.

   b. Pollen gathering activity during Clover season.

   c. Pollen gathering activity during Corn season :

      - Temporal changes (successive days) in total wet weight of pollen during Corn tasseling periods ***(Zea maize).***

      - Compartive behaviour of pollen foragers worker during the tasseling periods of Corn.

      - The amounts of pollen harvested from Corn spikes during the tasseling periods (2004 & 2005).

3- Comparative distribution of major pollen types in pollen traps during two seasons of study (2004&2005).

4- The amounts of pollen stored (bee bread) in the honeybee hives through the two years of study (2004&2005).

5- Brood rearing activity of honeybee colonies during the two seasons of study (2004&2005).

6- Identification of honey sources by pollen analysis in honey samples from som apiaries and markets during different seasons as an indicator for honey adulteration.

7- Considration on pollens of royal jelly and its geographical origin by pollen analysis in different samples.

8- Incidance of pollen grains in propolis of honeybee colonies at different sources.

9- Bee-wax secretion activity during pollen flow in the hive of honeybee colonies during (2004&2005).

10- The relationship between polln stored (Bee bread) in the hives of honeybee colonies and other products during the nectar flow (2004&2005).

11- The effect of giving pollen and sugar syrup to honeybee colonies on the amounts of pollen trapped during the active seasons (2004&2005).

12- Effect of using pollen traps as a new control method for ***Varroa destractor*** mites under Integrated Pest Management (IPM) control.

In Egypt little work has been done to study the pollen flow and pollen produced by bees under the above points. Therefore, it was necessary to study the behaviour of honeybee colonies in collecting pollen by traps and the amounts of pollen which are stored (bee bread) in the hives during the different seasons of the year (Citrus, Clover & Corn seasons) under the preveiling local enviromental conditions of Kalubia Governorate.