

## I-INTRODUCTION

Chalkbrood is a serious fungal disease of honeybee. This disease was firstly reported by Khattab, 1994 and Shimanuki, 1994 in Egypt. The chalkbrood disease is increasing in Egyptian apiaries and may become a major threat to the honeybee production and to other products produced by bees. Stonebrood and other fungal disease of bee are still minor problem to honeybees in Egyptian apiaries.

The **chalkbrood** is a disease of honeybee larvae caused by the fungus *Ascosphaera apis*. Adult bees (who are not affected by the disease) spread the fungus spores both inside the hive and outside during foraging trips. Adult bee's picks up spores from contact with contaminate water, flower and pollen grain or robber bees. Back at the hive larva is exposed to the disease when they eat the spores. Like most fungi *A. apis* thrives in cool and spring conditions. Under these conditions spores can germinate inside an infected larva's gut.

**Chalkbrood** is a fungus that kills honeybee larvae by robbing it of nutrients. After the larvae dies, the fungus spreads throughout its body. Because of its association with cool, damp conditions, **chalkbrood** mostly happens in winter and early spring at the cooler edge of brood nest and in hives that are poorly ventilated. Also happens in rapidly growing colonies that have more brood than the adults can keep warm. **Chalkbrood** is easy to identify in the Field. At first, dead larvae swell, fill the entire cell and turn chalky white hence the diseases name Larvae then shrink into hard white, gray, or black mummies, it could be seen on the bottom boards of infested colonies, (Spiltoir and olive 1955), (Skou 1972), (Heath 1982 a & b), (Bamford and Heath 1989).

Stonebrood is usually caused by *Asperagillus flavus*, occasionally

*A. fumigatus*, these fungi are pathogenic to adult bee and its not reported in Egypt and are still to be of minor importance in other countries, (Baily, 1981 and Shimanuki, 1994).

The aim of this work is to survey the incidence of the **chalkbrood** diseases caused by the fungus (*Ascosphaera apis*) in honeybee colonies especially in Qualubia governorate and to isolate this fungus in laboratory. Identification and the artificial infection of this fungus had been conducted (Heath 1985), (Delaplane 1995).

It is clearly that, an in-depth experimental assessment of the chalkbrood disease incidence effect in honeybee colonies and beekeeping in Egypt should be done. The experiments described herein were the first work of study of chalkbrood disease in honeybee colonies. These studies involved the following points: -

- 1- Surveys of chalkbrood disease found in honeybee colonies in Qualubia Governorate during (1996 and 1997).
- 2- Isolation of the fungi in the honeybee colonies and identification of the causal organism of chalkbrood disease and other fungi which may infect the honeybee colonies.
- 3- The relationship of *Varroa Jacobsoni* and the occurrence of chalkbrood disease.
- 4- The effect of chalkbrood disease infection on brood rearing activity, the activity of honeybee colonies during the nectar-flow seasons and effect on the honey yield during the two seasons of the study.

5- Effect of some important bee management operations on protection of honeybee colonies and controlling chalkbrood disease.

6- Preliminary studies on the effect of some substance in controlling and decreasing the rate of infection of chalkbrood disease *A. apis* in laboratory.

These studies were carried out at the Faculty of Agriculture Moshtohor, Zagazig University, during the seasons of 1996, 1997 and 1998.