V. SUMMARY

Spiders are considered important and world wide predators of many agricultural pests. There are about 30.000 species of spiders identified around the world till now. Spiders spread in many habitats such as caves, cervices, above mountains and defied desert i.e. spider can be found in most region of earth (Rod & Ken, 1984).

This study included the following points:

1. **Seasonal abundance of the three pets (cotton leafworm, *Spodoptera littoralis*, aphids, *Aphis craccivora* and *Aphis gossypii* and two spotted spider mite, *Tetranychus urticae*) and their associated predatory spiders:**

This study occurred for determination of population density of three pest and spiders at Kaha Station, Qalubiya Governorate and Seds Station at Beni-Sueif Governorate during two successive years (3003-2004 and 2004-2005), on two host plants (cotton and broad bean). The results revealed that the occurrences of 13 families including 22 species these families are Lycosidae, Philodromidae, Linyphiidae, Theridiidae, Miturgidae, Ulobroridae, Oonopidae, Dictynidae, Gnaphosidae, Pholocidae, Araneidae, Thomisidae and Salticidae some of these families present in 2 seasons (summer and winter) as Lycosidae, Philodromidae, Linyphidae, Theridiidae, Miturgidae, Uloboridae, Dictynidae, Thomisidae and Salticidae. Studying the population density and seasonal abundance of the spiders associated with different three pests, temperature and relative humidity. Data in the tables showed that the increasing of temperature and relative humidity followed by the increase of spider population and that is due to the abundance of their prey population during the hot months and there was positive relationship

between population density of spider, temperature and relative humidity%.

2. Association between the three pests and spiders:

It is interesting to notice that, families Lycosidae, Philodromidae, Theridiidae, Ulobroridae, Dictynidae, Thomisidae and Salticidae collected with relatively high population density on cotton and broad bean plants during two successive years (2004 & 2005), greatly varied according increasing in population density of preys *S. littoralis, A. gossypii, A. craccivora* and *T. urticae.*

Sometime this was a positive relationship between population density of spiders and increasing or decreasing of population density of preys.

Biological studies:

Rearing *T. albini* on four different groups (first group G_1: *S. littoralis, A. craccivora* and *T. urticae,* second group G_2: *S. littoralis* and *A. craccivora*, third group G_3: *S. littoralis* and *T. urticae* and fourth group G_4: *A. craccivora* and *T. urticae* under laboratory conditions at 30±2°C and 70-80% RH, the life cycle of the fourth groups were arranged decreasing from G4>G1>G2>G3 for both females and males.

On the other hand, the total duration of female and male of *T. albini* depended on high temperature and kind of food group. Longevity of female was longer than male, the longevity of female of *T. albini* were increasing from G_4, G_1, G_2 and G_3, respectively.

The females and males spiders required seven and sometime eight spiderling stages to develop and reach adult.

Other biological aspects of *T. urticae* were studied, results showed that, egg incubation, post-pre oviposition, total number of eggs/sac and total number of egg sac/female.

On the other hand, it was observed that the third group rate of consumption was more than second and first group relative to *S. littoralis,* they were increasing from G_4, G_1 and G_3, respectively. In case *T. urticae,* but the food consumption of *A. crassivora* increasing from G_4, G_2 and G_1, respectively.

Toxicity of some alternative pesticides (KZ oil, Vertimic and *P. nigrum*) on spider adults:

This study aims to demonstrate the effect of some alternative pesticides application on three pests on cotton or broad bean plants and on spider adults *(T. albini)* which play an important role in biological control for different pests.

Duration of female and male of spider (*T. albini*) increasing in case treated with *P. nigrum* than Vertimic and KZ oil.

The mortality percentages of spider were decreasing after 24, 48 and 72 h, respectively when applicated with three alternative pesticides. Toxicity of Vertimic was more affected on spider after 24h than KZ oil and *P. nigrum.*

Biochemical study:

Investigate the effect of these elements (alternative pesticides) and different feeding group on the biochemical change.

Results revealed some difference between the control and the treated samples and they indicated that:

1) Total protein was increased with third group followed by first and fourth group
2) Total protein was decreased with *P. nigrum* followed by KZ oil and Vertimic.
3) Electrophoretic bioassay analysis of protein showed that, protein bands were varied and there were difference between proteins in tissue in case of G_1, G_3 and G_4 and proteins in tissue which treated

with alternative pesticides both in their concentration and their molecular weights.

4) In other hand, the protein bands which appeared in the tissue adult of *T. albibi* when treated with alternative pesticides from *P. nigrum*, KZ oil and Vertemic. Protein band 9, 19 and 34 presented only in case treated with KZ oil, (14, 33) were presented in tissue which treated with *P. nigrum* only.
5) There were some of protein bands present 26 bands (8, 32) they absent in G_3 and G_4 and 2 bands present in G_3, (27, 33) they absent in other groups.