
شبكة المعلومات الجامعية


# بسم الله الرحمن الرحيم


# شبكة المعلومات الجامعية

# التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

# جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

## قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد أعدت دون أية تغيرات

## يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

**To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%**

# بعض الوثائـــــــق الاصليـــــة تالفـــة

# بالرسالة صفحات لم ترد بالاصل

# PHYSIOLOGICAL STUDIES ON REPRODUCTION OF CERTAIN LEPIDOPTEROUS INSECTS

BY

HANI AHMED ALI GOMAA

B.Sc. Agric. (Entomology), Ain Shams Univ. 1995

A thesis submitted in partial fulfillment

of

the requirements for the degree of

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in

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Faculty of Agriculture

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2000

Approval Sheet

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# PHYSIOLOGICAL STUDIES ON REPRODUCTION OF CERTAIN LEPIDOPTEROUS INSECTS

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# ABSTRACT

**Hani Ahmed Ali Gomaa: Physiological studies on reproduction of certain lepidopterous insects. Unpublished Master of Science Thesis, Ain Shams University, Faculty of Agriculture, Department of Plant Protection, 2000.**

The effects of age at the first mating on the reproductive potential of the Egyptian cotton leafworm, *Spodoptera littoralis* (Boisd.) was studied in the laboratory.

The fecundity of females but not the fertility of eggs laid were significantly affected by age of male and females at the time of mating. Delaying mating by females increased longevity but decreased fecundity. Delaying mating by males also increased their longevity but decreased the number of spermatophores they transferred to females. The number of delivered spermatophores to a single female decreased with advancement of male age at first mating and affected female fecundity. Delaying the first mating by either sex beyond 3 -5 days postemergence significantly affected the reproductive potential of *S. littoralis*. Highest fecundity was found for either sexes was 1-2 days postemergence. The reproductive capability of males was determined when coupled with 1 to 5 females. Highest fertility and fecundity were found when the ratio of male : female was 1 : 1 or 1 : 2. Reproductive potential gradually decreased when more than one female was included in the combination.

The male accessory glands (SAG) of 3 day old unmated and mated males were chemically analyzed to determine their content of free amino acids (FAAs). A total of 16 FAAs were detected, which were predominated by proline, followed by serine, alanine and glutamic acid. The amounts of FAAs were

nearly halved following insemination and the decrease of FAAs was greatest for proline and serine. Furthermore, the spermatophore, dissected from females soon after insemination was analyzed and 17 FAAs were found. These amounts presented 76.13% of those decreased from SAG at ejaculation and insemination. The FAAs were depicted in different amounts, not necessary equal to the amounts lost from SAG at ejaculation. Proline followed by serine and alanine were the most predominant. Other six FAAs detected in smaller quantities in the SAG appeared in an increased amount in the spermatophore. Cystine was found to be present, however, it was not detected in the SAG.

**Key words:**
***Spodoptera littoralis*, reproductive potential, longevity, male accessory glands, spermatophore.**

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