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

SOME IMMUNE RESPONSE MECHANISMES OF THE COTTON LEAF WORM *SPODOPTERA LITTORALIS* AND THE SILK WORM *BOMBYX MORI* TO SOME BIOLOGICAL AND NON-BIOLOGICAL AGENTS

THESIS

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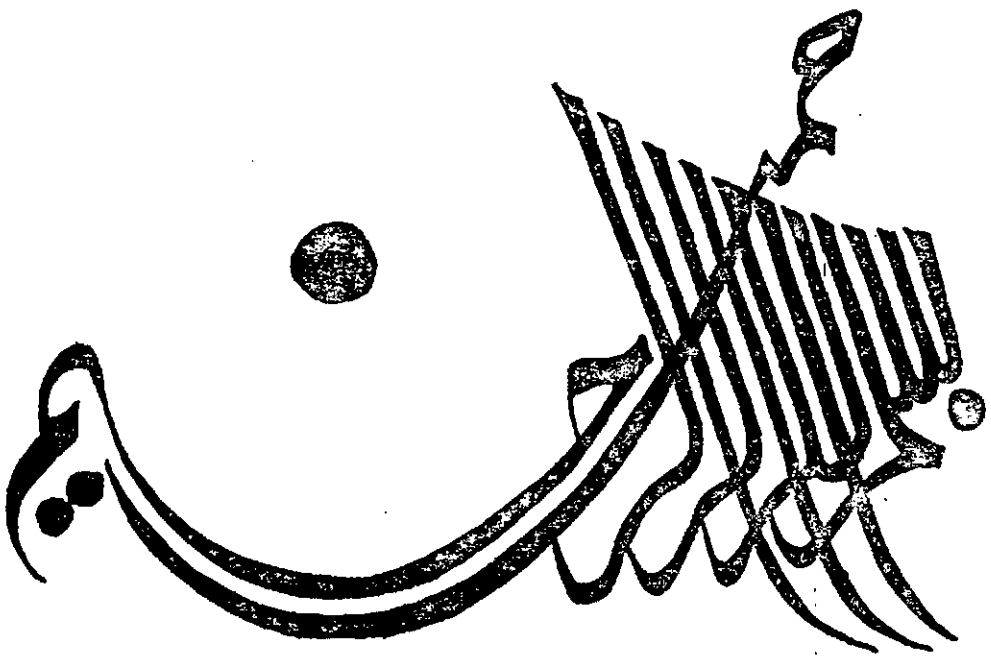

﴿إن الله لا يستحي أن يضرب مثلا ما بعوضة فما فوقها

فأما الذين آمنوا فيعلمون أنه الحق من ربهم وأما الذين كفروا

فيقولون ماذا أراد الله بهذا مثلا يضل به كثيرا ويهدي به

كثيرا وما يضل به إلا الفاسقين﴾ صدق الله العظيم

(آية ٢٦ سورة البقرة)

DEDICATION

To My Parents

AND

To My Wife

ACKNOWLEDGEMENT

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INTRODUCTION
AND
LITERATURE REVIEW

I. INTRODUCTION AND LITERATURE REVIEW

The immune system of invertebrates increases attention for many workers in recent years (Brehelin, 1986; Lackie, 1986; Riley and Chappel, 1992 and Amen *et al* 1992). Invertebrate defence mechanisms are less complex than those of vertebrates which exhibit integrated cell-mediated and humoral immunity, complex immunoregulatory mechanisms and multiple molecular classes of immunoglubulins (Brehelin, 1986). In mammals, this is known to be accomplished through specific antibodies, T-lymphocytes and/or the complement pathway. Invertebrates by contrast, do not express immunoglobulin and do not have cell analogues to mammalian lymphocytes. However, a number of workers, notably Day *et al* (1970) and Bertheussen (1984) have suggested that invertebrates might possess molecules akin to complement, for arthropods at least, the prophenoloxidase activating system constitutes such a complement-like pathway in host immunity (Söderhäll, 1982 and Wheeler *et al*, 1993). It is also noted that substances with agglutinating activity serve recognition molecules in the immunoserveillance system of some insects, thus facilitating the detection and uptake of foreign materials by phagocytes (Scott, 1971). Agglutinins (haemagglutinin, lectin) are proteins or glucoproteins that specifically bind to carbohydrates and glucoconjugates frequently causing their precipitation or agglutination (Lis and Sharon, 1986), they occur upiquitously throught plants,