

بسم الله الرحمن الرحيم



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شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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بالرسالة صفحات

لم ترد بالأصل



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**PHYSIOLOGICAL AND ULTRASTRUCTURAL
STUDIES ON TUMORIZED CELLS OF
SUNFLOWER PLANTS**

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Of

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In

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By

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✍

Gehan Hussein Ali Amin

DEDICATION

So... 

My Husband
Parents
Children
Aya
Ahmed
Mohamed





*This thesis has not been
previously submitted for a
degree at this or at any other
university*

Gehan Hussein Ali Amin

SCIENTIFIC WORDS IN SHORT-FORMES

A.tumefaciens	: Agrobacterium tumefaciens .
cd.	: Cadaverine.
DG	: Diglyceride .
FFA	: Free Fatty Acid .
put.	: Putrescine .
PC.	: Phosphatidylcholine.
PE	: Phosphatidylethanolamine..
PG	: Phosphatidylglycerol..
PS	: Phosphatidylserine .
PI	: Phosphatidylinositol.
spd.	: Spermidine .
spm.	: Spermine .
S	: Sterols .
SE	: Sterol esters .
TG	: Triglyceride .
Ti-plasmid	: Tumour inducing plasmid.

THE AIM OF THE WORK

The aim of the present work is to study the physiological and ultrastructural changes in stem of sunflower plants infected with *Agrobacterium tumefaciens* during crown-gall growth in the field and in isolated crown-gall grown on axenic MS media compared with normal stem and normal calli cultured tissue respectively.

INTRODUCTION