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شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



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شبكة المعلومات الجامعية



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



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شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

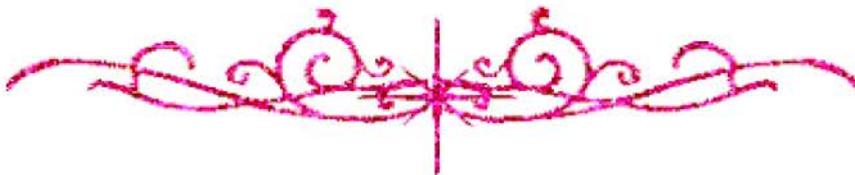
قسم

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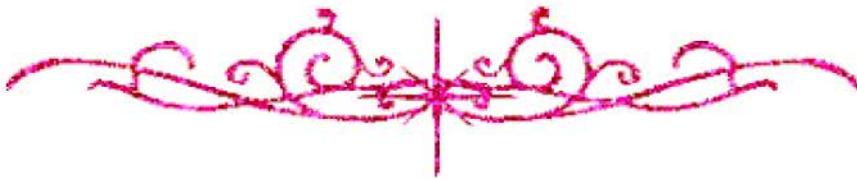
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بالرسالة صفحات لم ترد بالأصل



Benha University
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**Banana viruses eradication and production of banana virus-free
 by using modern techniques**

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Dedication

I dedicate this thesis to **the soul of my father**. I wish he were here between us to accomplish his dream and put a smile on his face, to my husband (Dr. Ahmed Aly), my mother and my mother in law and to my lovely sons (Toka, Mohammed and Omar).

Sabah Abo El-Maaty

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

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List of abbreviation

A	
AbTV	Abaca bunchy top virus
AGERI	Agricultural Genetic Engineering Research Institute
Agric	Agriculture
AMV	Abaca mosaic virus
AMV-RT	Avian Myeloblastosis virus reverse transcriptase
ARC	Agricultural Research center
ARE	Arab Republic of Egypt
ASA	Acetyl salicylic acid
B	
bp	Basis pair
BAP	6-Benzyl amino purine
BBTD	Banana bunchy top disease
BBTV	Banana bunchy top virus
BBMV	Banana bract mosaic virus
BCIB	5-bromo-4-chloro-3-indolyl phosphate
BMV	Banana mosaic virus
BSA	Bovine serum albumin
BSV	Banana streak virus
C	
°C	
CMV	Cucumber mosaic virus
CTAB	Cetyl trimethyl ammonium bromide
cv.	Cultivar
cvs.	Cultivars
cDNA	Complementary DNA
cm	Centimeter
Cp	Coat protein
D	
DAS	Double antibody sandwich
dd H ₂ O	Double deionized water
Dep.	Department
DIBA	Dot immunobinding assay
DNA	Deoxyribonucleic acid
dNTP	Dideoxyribonucleotidetriphosphate
E	
E.C.	Emulsion concentrate
EDTA	Ethylene diamine tetracetic acid

ELISA	Enzyme linked immunosorbent assay
ETOH	Ethyl alcohol
F	
Fac.	Faculty
Fig.	Figure
G	
g	Gramme (s)
GIS	Geographic Information System
H	
hr	Hour (s)
HCl	Hydrochloric acid
I	
IBA	Indole 3-butyric acid
IC	Immunocapture
IgG	Immunoglobulin G
IPM	Integrated pest management
ISEM	Immunosorbent electron microscopy
K	
Kb	Kilobase
L	
l	Liter
M	
M	Molar
ME	β - mercaptoethanol
MgCl ₂	Magnesium chloride
M-IC-	Multiplex Immunocapture
min	Minute (s)
mg	Milligramme
ml	Millilitre
mM	Millimolar
mm	Millimeter
μ g	Microgramme
μ l	Microlitre
μ M	Micromolar
MS	Murishage and Skoog
M.wt	Molecular weight
N	
NAA	Naphthalene acetic acid
NaCl	Sodium chloride
NBT	Nitro blue tetrazolium salt

nm	Nanometer
P	
PAB	Polyclonal antibody
Path.	Pathology
PBS	Phosphate buffer solution
PBT	
PCR	Polymerase chain reaction
ppm	Part per million
R	
RAPD	Random amplified polymorphic DNA
RNA	Ribonucleic acid
RNase	Ribonuclease
rpm	Rotation per minute
RT	Reverse transcriptase
S	
SDW	Sterilized distilled water
sec	Second
S.L.	Soluble liquid
sp.	Species
ssDNA	Single stranded DNA
T	
<i>Taq.</i>	<i>Thermus aquaticus</i>
TBE	Tris-boric acid EDTA
T-DNA	Total DNA
TE	Tris- EDTA
TC	Tissue culture
T- RNA	Total RNA
U	
U	Unit
Univ.	University
UV	Ultraviolet
V	
V	Volt
var.	Variation
VLPs	Virus like particles
v/v	Volume: volume ratio
w/v	Weight: volume ratio

Introduction