

**PROPAGATION OF *Phoenix dactylifera* L.,  
*Chamaerops humilis* L. AND *Hyophorbe verschaffeltii*  
L. PALMS BY USING TISSUE CULTURE  
TECHNIQUE**

**By**

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**THESIS**

**Submitted in Partial Fulfillment of the  
Requirements for the Degree of**

**DOCTOR OF PHILOSOPHY**

**In**

**Agricultural Sciences  
(Ornamental Horticulture)**

**Department of Ornamental Horticulture  
Faculty of Agriculture  
Cairo University  
EGYPT**

**2011**

## APPROVAL SHEET

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### ABSTRACT

This study was conducted to investigate the ability to produce whole plantlets related to palmaceae family by micropropagation through tissue culture technique for date palm trees (Bartamuda and Sakkoty cvs.) by studying the effect of culture media and GA<sub>3</sub> concentrations 0.0, 0.1, 0.5, and 1.0 mg/l, effect of culture media and ABA concentrations (0.0, 0.1, 0.5, 1.0 and 2.0 mg/l) and effect of different nitrogen sources on friable callus production stage which derived from shoot tips explants, also in rooting stage studying of the ability for rooting by using treatments of pulsed on different NAA and IBA concentrations (1.0, 3.0 and 5.0 mg/l) and studying for the ability to promote the growth and development of roots to produce healthy whole plantlets for acclimatization by using different different sucrose concentrations (0.0, 10.0 and 20.0 g/l) and MS salt strength ( $\frac{1}{2}$  MS,  $\frac{1}{4}$  MS,  $\frac{1}{8}$  MS and  $\frac{1}{16}$  MS strength). Also, this study procedure the produce whole plantlets from shoot tips of *Chamaerops humilis*. Also, this study procedure the produce plant regeneration from female inflorescences for date palm trees (Sewy cv.) and Spindle palm.

**Key words:** Palmaceae, GA<sub>3</sub>, ABA , inflorescences

## DEDICATION

*I dedicate this work to whom my heart felt thanks; to my husband and my sons for their patience and help, as well as to my parents and brothers for all the support they lovely offered along the period of my post graduation.*

## **ACKNOWLEDGEMENT**

*I wish to express my sincere thanks, deepest gratitude and appreciation to my supervisor, Dr. Mohamed Abd El- Kahlek EL- Kahteeb Professor of Horticulture, Faculty of Agriculture, Cairo University for suggesting the problem, supervision, continued assistance and their guidance through the course of study and revision the manuscript of this thesis.*

*The author also wishes to express his appreciation to Dr. Azza Mohamed Said Arafa, Professor of Horticulture, for her supervision, valuable assistance, great support during all step of the study.*

*Great thanks to Dr. Abd –El Monem El Bana the Manger of Central Laboratory for Date palm Researches and Development, Agriculture Research Center, Ministry of Agriculture for his for provisory facilities needed to make this work encouragement and continuous help.*

*I have been greatly assisted by Dr. Mona Hassan, Dr. Zeinab Zaid and Dr. Amal Zein El-Din Researchers in the Date Palm Tissue Culture Lab.*

*Grateful appreciation is also extended to all staff members of Horticulture Department, Faculty of Agriculture, Cairo University.*

*I would like express my heartfelt thanks to all members in the Date Palm Tissue Culture Lab for pleasant teamwork and other members whom created a warm, open atmosphere and assisted me in many ways are acknowledged.*

*Special deep appreciation is given to my late father, my mother, my husband, my sons my brothers and sister.*

## LIST OF ABBREVIATION

2, 4 -D	2,4 -Dichloro- phenoxy acetic acid
2ip	N6- (2- iso pentenyl adenin)
ABA	Abscisic acid
BA	Benzyl Adenine
GA3	Gibberellic acid
IBA	Indole butyric acid
KNO <sub>3</sub>	Potassium nitrate
MS	Murashige and Skoog medium
NAA	Naphthalene acetic acid
NaOCl	Sodium hypochlorite
NH <sub>4</sub> NO <sub>3</sub>	Ammonium nitrate
PBZ	Paclobutrazol
TDZ	Thidiazuron

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### المستخلص العربي

أجريت هذه الدراسة بهدف إنتاج نباتات كاملة لبعض اشجار العائلة النخيلية من خلال الإكثار الدقيق باستخدام تكتيك زراعة الانسجة لكل من نخيل البلح صنفى (برتمودا وسكوتي أصناف جافة) حيث تم دراسة تأثير بيئات الزراعة مع تركيزات مختلفة من حمض الجبريليك (٠.٠ و ٠.١ و ٠.٥ و ١.٠ ملجم/لتر) و حمض الأبسيسك (٠.٠ و ٠.١ و ٠.٥ و ١.٠ و ٢.٠ ملجم/لتر) وكذلك دراسة تأثير مصادر النيتروجين وذلك في مرحلة إنتاج الكالس الهش من القمم النامية للمنفسلات النباتية هذا بالإضافة إلى مرحلة التجذير حيث تم دراسة إمكانية الدفع للتجذير باستخدام معاملات النقع في تركيزات مختلفة من نفتالين حامض الخليك و اندول حامض البيوتريك (١.٠ و ٣.٠ و ٥.٠ ملجم/لتر) للأفرع الكاملة للنباتات ودراسة إمكانية تشجيع نمو وتطور الجذور للحصول على نباتات جيدة للاقلمة وذلك بدراسة تأثير تركيزات مختلفة من السكر (٠.٠ و ١.٠ و ٢.٠ جم/لتر) وقوي الاملاح المختلفة لموراشيجي و سكوج MS (MS and 1/16 MS, 1/8 MS, 1/4 MS, 1/2 MS). كذلك تناولت الدراسة إنتاج نباتات من القمم النامية لنخيل الكاميرويس تحت تأثير تركيزات مختلفة من البيكلورم (٠.٠٦ و ٠.٦ و ٦.٠ ملجم/لتر) ودراسة تأثير استخدام تركيزات مختلفة من بكتوبترازول (٠.٠ و ٠.١ و ٠.٣ و ٠.٥ ملجم/لتر). كما استهدفت الدراسة إمكانية إنتاج نباتات كاملة لنخيل البلح صنف سيوي ونخيل المسكارينا من النورات الزهرية من خلال استحداث نظام جديد ذو كفاءة عالية لإنتاج اجنة جسمية غير مباشرة او انتاج اجنة جسمية مباشرة دون المرور بمرحلة الكالس.

الكلمات الدالة: العائلة النخيلية، حمض الجبريليك ، حمض الابسيسك، النورة الزهرية.



***Phoenix dactylifera* L., *Chamaerops humilis* L. إكثار نخيل  
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في العلوم الزراعية  
(بساتين الزينة)

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للحصول على درجة

دكتور الفلسفة

في

العلوم الزراعية  
(بساتين الزينة)

قسم بساتين الزينة  
كلية الزراعة  
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