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**MICROPROPAGATION OF FERN  
DAVALLIA FIJEENSIS (RABBIT'S FOOT)  
AND NEPHROLEPIS EXALTATA**

**By**

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**Thesis**

**Submitted in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Philosophy in Agriculture  
Science Floriculture & Ornamental Horticulture**

**Department of Floriculture  
& Ornamental Horticulture  
Faculty of Agriculture,  
Kafrelsheikh University**

**2022**

### Abstract

This work was carried out at the Tissue Culture Laboratory, Horticulture Research Institute (HRI), Agricultural Research Center (ARC), Giza, Egypt during the years of 2018 and 2021 on the commercially important fern *Davallia fejeensis* Hook and *Nephrolepis exaltata* Schott cv. *Bostoniensis* to establish a protocol of micropropagating for these plants. Explants sterilized with 0.1% MC for 15 min was the suitable concentration and time for contamination-free and survival percentage in both ferns. During the multiplication of *D. fejeensis*, the greatest leaf number, shootlet number and heaviest weight were observed in explants cultured on MS medium with kin at 1.0 ppm. The highest total chlorophyll was recorded with 0.5 ppm kin + 0.5 ppm NAA while carotenoid raised in control medium, 0.5 ppm BAP or kin. For rooting, MS containing 4.0 ppm NAA produced the highest number of root and rhizome/ plantlet and longest rhizome. For acclimatization of the fern plantlets cultured in peat moss +sand +perlite (1: 1: 1) produced the longest plantlet, greatest leaf number, fresh weight, root number, rhizome number and longest root, rhizome. For the multiplication of *N. exaltata*, the highest shootlet number and leaf number were recorded in MS supplemented with 1.0 mg/l BAP and 1 g/l AC. For rooting, full MS with 0.5 mg/l NAA and 1 g/l AC produced the highest rooting percentage, root number, and longest root. For acclimatization, culturing plantlets in peat moss recorded the longest plantlet, greatest leaf number and longest root.

**LIST OF CONTENTS**

Title	Page
<b>I. INTRODUCTION .....</b>	<b>1</b>
<b>II. REVIEW OF LITERATURE .....</b>	<b>3</b>
<b>II.1. Disinfections of explants.....</b>	<b>3</b>
<b>II.1.1. Mercuric chloride.....</b>	<b>3</b>
<b>II.1.2. Sodium hypochlorite (clorox).....</b>	<b>5</b>
<b>II.2. Effect of growth regulators.....</b>	<b>6</b>
<b>II.2.1. Effect of cytokinins on shoot proliferation .....</b>	<b>6</b>
<b>II.2.1.1. Effect of benzyladenine (BA).....</b>	<b>7</b>
<b>II.2.1.2. Effect of kinetin (Kin.).....</b>	<b>16</b>
<b>II.2.1.3. Effect of isopentenyladenine (2iP).....</b>	<b>19</b>
<b>II.2.1.4. Effect of cytokinins and auxins combinations on shoot proliferation.....</b>	<b>21</b>
<b>II.2.2. Effect of growth regulators on pigments.....</b>	<b>32</b>
<b>II.2.3. Effect of Auxin on rooting behaviour.....</b>	<b>34</b>
<b>II.2.3.1. Effect of indole-3-butyric acid (IBA).....</b>	<b>34</b>
<b>II.2.3.2. Effect of Naphaleneacetic Acid (NAA).....</b>	<b>39</b>

<b>II. 3. Effect activated charcoal (AC) on growth behaviour.....</b>	<b>41</b>
<b>II. 4. Effect of strength of MS medium on growth behaviour.....</b>	<b>46</b>
<b>II.5. Effect of acclimatization medium type.....</b>	<b>48</b>
<b>III. MATERIAL AND METHODS .....</b>	<b>51</b>
<b>IV. RESULTS AND DISCUSSION.....</b>	<b>59</b>
<b>IV.1. First part: Micropropagation of <i>Davallia fejeensis</i> Hook..</b>	<b>59</b>
<b>IV.1.1. Sterilization stage.....</b>	<b>59</b>
<b>IV.1.2. Multiplication stage.....</b>	<b>61</b>
<b>IV.1.2.1. Effect of PGR type and concentration on shootlet number/explant of <i>Davallia fejeensis</i> Hook.....</b>	<b>61</b>
<b>IV.1.2.2. Effect of PGRs types and concentrations on leaf number/cluster of <i>Davallia fejeensis</i> Hook.....</b>	<b>62</b>
<b>IV.1.2.3. Effect of PGR type and concentration on shootlet length (cm) of <i>Davallia fejeensis</i> Hook.....</b>	<b>64</b>
<b>IV.1.2.4. Effect of PGR type and concentration on cluster fresh weight (g) on <i>Davallia fejeensis</i> Hook.....</b>	<b>66</b>
<b>IV.1.2.5. Effect of PGR type and concentration on total chlorophyll (mg/g fw) of <i>Davallia fejeensis</i> Hook.....</b>	<b>69</b>
<b>IV.1.2.6. Effect of PGR type and concentration on carotenoids content (mg/g fw) of <i>Davallia fejeensis</i> Hook.....</b>	<b>71</b>
<b>IV.1.3. Rooting stage.....</b>	<b>72</b>

IV.1.3.1. Effect of auxin type and concentration on number of roots/shootlet of <i>Davallia fejeensis</i> Hook.....	72
IV.1.3.2. Effect of auxin type and concentration on root length (cm) of <i>Davallia fejeensis</i> Hook.....	74
IV.1.3.3. Effect of auxin type and concentration on rhizome number (cm) of <i>Davallia fejeensis</i> Hook.....	76
IV.1.3.4. Effect of auxin type and concentration on rhizome length of <i>Davallia fejeensis</i> Hook.....	77
IV.1.4. Acclimatization stage .....	80
IV.2. Second part: Micropropagation of <i>Nephrolepis exaltata</i> Schott.....	82
IV.2.1. Sterilization stage.....	82
IV.2.2. Multiplication stage.....	85
IV.2.2.1. Effect of cytokinins, activated charcoal (AC) and their interaction on shootlet number/explant of <i>Nephrolepis exaltata</i> Schott.....	85
IV.2.2.2. Effect of cytokinins, activated charcoal (AC) and their interaction on shootlet length of <i>Nephrolepis exaltata</i> Schott. ....	86
IV.2.2.3. Effect of cytokinins, activated charcoal (AC) and their interaction on leaf number/ shootlet of <i>Nephrolepis exaltata</i> Schott.....	88
IV.2.2.4. Effect of cytokinins, activated charcoal (AC) and their interaction on fresh weight of <i>Nephrolepis exaltata</i> Schott.....	89
IV.2.2.5. Effect of cytokinins, activated charcoal (AC) and their interaction on total chlorophyll (mg/g fw) of <i>Nephrolepis exaltata</i> Schott.....	92
IV.2.2.6. Effect of cytokinins, activated charcoal (AC) and their	94

interaction on carotenoids (mg/g fw) of <i>Nephrolepis exaltata</i> Schott.....	
<b>IV.2.3. Rooting stage</b> .....	<b>95</b>
<b>IV.2.3.1.</b> Effect of MS strength medium, activated charcoal (AC) and their interaction on rooting percentage of <i>Nephrolepis exaltata</i> Schott.....	<b>95</b>
<b>IV.2.3.2.</b> Effect of MS strength medium, activated charcoal (AC) and their interaction on root number/shootlet of <i>Nephrolepis exaltata</i> Schott.....	<b>97</b>
<b>IV.2.3.3.</b> Effect of MS strength medium, activated charcoal (AC) and their interaction on root length (cm) of <i>Nephrolepis exaltata</i> Schott.....	<b>99</b>
<b>IV.2.4. Acclimatization stage</b> .....	<b>102</b>
<b>V. SUMMARY AND CONCLUSION</b> .....	<b>105</b>
<b>VI. REFERENCES</b> .....	<b>111</b>
<b>VII. ARABIC SUMMARY</b> .....	<b>-</b>

## LIST OF TABLES

No.	Title	Page
1	Effect of exposure in clorox and MC for different times on contamination-free% and survival% of <i>Davallia fejeensis</i> Hook.	60
2	Effect of PGR type and concentration on shootlet number/explant of <i>Davallia fejeensis</i> Hook	62
3	Effect of PGR type and concentration on leaf number/cluster of <i>Davallia fejeensis</i> Hook	64
4	Effect of PGR type and concentration on shootlet length (cm) of <i>Davallia fejeensis</i> Hook	65
5	Effect of PGR type and concentration on cluster fresh weight (g) on <i>Davallia fejeensis</i> Hook	67
6	Effect of auxin type and concentration on root number/ shootlet of <i>Davallia fejeensis</i> Hook	74
7	Effect of auxin type and concentration on root length (cm) of <i>Davallia fejeensis</i> Hook	75
8	Effect of auxin type and concentration on rhizome number/shootlet of <i>Davallia fejeensis</i> Hook	77
9	Effect of auxin type and concentration on rhizome length (cm) of <i>Davallia fejeensis</i> Hook	78
10	Effect of various types, times and their interaction of sterilization agents on contamination- free % and survival% of <i>Nephrolepis exaltata</i> Schott.	84
11	Effect of cytokinins, activated charcoal (AC) and their	86

	interaction on shootlet number/explant of <i>Nephrolepis exaltata</i> Schott	
<b>12</b>	Effect of cytokinins, activated charcoal (AC) and their interaction on Shoot length (cm) of <i>Nephrolepis exaltata</i> Schott	<b>87</b>
<b>13</b>	Effect of cytokinins, activated charcoal (AC) and their interaction on leaf number/ shootlet of <i>Nephrolepis exaltata</i> Schott	<b>89</b>
<b>14</b>	Effect of cytokinins, activated charcoal (AC) and their interaction on fresh weight (g) of <i>Nephrolepis exaltata</i> Schott	<b>90</b>
<b>15</b>	Effect of MS strength medium, activated charcoal (AC) and their interaction on rooting percentage of <i>Nephrolepis exaltata</i> Schott	<b>97</b>
<b>16</b>	Effect of MS strength medium, activated charcoal (AC) and their interaction on root number/ shootlet of <i>Nephrolepis exaltata</i> Schott	<b>98</b>
<b>17</b>	Effect of MS strength medium, activated charcoal (AC) and their interaction on root length (cm) of <i>Nephrolepis exaltata</i> Schott	<b>100</b>



**LIST OF FIGURES**

<b>No.</b>	<b>Title</b>	<b>page</b>
<b>1</b>	Effect of PGR type and concentration on total chlorophyll (mg/g fw) of <i>Davallia fejeensis</i> Hook.	<b>70</b>
<b>2</b>	Effect of PGR type and concentration on carotenoids content (mg/g fw) of <i>Davallia fejeensis</i> Hook.	<b>72</b>
<b>3</b>	Effect of media type on acclimatization for plant behavior of <i>Davallia fejeensis</i> Hook	<b>81</b>
<b>4</b>	Effect of cytokinins, activated charcoal (AC) and their interaction on total chlorophyll (mg/g fw) of <i>Nephrolepis exaltata</i> Schott	<b>93</b>
<b>5</b>	Effect of cytokinins, activated charcoal (AC) and their interaction on carotenoids content (mg/g fw) of <i>Nephrolepis exaltata</i> Schott	<b>95</b>
<b>6</b>	Effect of various media type on acclimatization for plantlet behaviour of <i>Nephrolepis exaltata</i> Schott.	<b>103</b>

## PHOTOS

No.	Title	Page
1	Mother plant of <i>Davallia fejeensis</i> Hook.....	52
2	Mother plant of <i>Nephrolepis exaltata</i> Schott.....	55
3	Explant contamination-free and survival of <i>Davallia fejeensis</i> .....	60
4	Effect of different type and concentration of PGR on shooting behaviour of <i>Davallia fejeensis</i> Hook.....	68
5	Effect of different type and concentration of auxin on rooting behaviour of <i>Davallia fejeensis</i> Hook.....	79
6	Effect of media type on acclimatization for plant behavior of <i>Davallia fejeensis</i> Hook.....	82
7	Explant contamination-free and survival of <i>Nephrolepis exaltata</i> Schott.....	84
8	Effect of cytokinins, activated charcoal (AC) on shooting behaviour of <i>Nephrolepis exaltata</i> Schott.....	91
9	Effect of MS strength medium, activated charcoal (AC) on rooting behaviour of <i>Nephrolepis exaltata</i> Schott.....	101
10	Effect of various media type on acclimatization for plantlet behaviour of <i>Nephrolepis exaltata</i> Schott.....	104

## Abbreviations

Abbreviations	Mean
PGR	Plant Growth Regulator
BAP	6- benzylaminopurine
Kin	Kinetin (6- fur furylaminopurine)
2ip	Isopentenyl adenine
TDZ	Thidiazuron
PAA	Phenylacetic acid
NAA	Naphthalene acetic acid
IBA	Indole butyric acid
IAA	Indole acetic acid
2,4-D	Dichlorophenoxyacetic acid
MS	Murashige and Skoog
WPM	Woody plant medium
B5	Gamborg medium
CH	Casein hydrolysate
DPU	Diphenylurea
Ad	Adenine
GA3	Gibberellic acid
PVP	Polyvinylpyrrolidone
Tween-20	Poly oxyethylene- sorbitanmonolaurate
MC (HgCl <sub>2</sub> )	Mercuric chloride
AC	Activated charcoal
NaOCL	Sodium hypochlorit