



UNIVERSITI PUTRA MALAYSIA

***IN VITRO* CULTURE OF *METROXYLON SAGU*
THE SAGO PALM - A PRELIMINARY STUDY**

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***IN VITRO* CULTURE OF *METROXYLON SAGU* -
THE SAGO PALM - A PRELIMINARY STUDY**

by

BASKARAN KRISHNAPILLAY

**A Thesis submitted in partial fulfilment of the
requirements for the Degree of Master of Science
in the Faculty of Science and Environmental Studies,
Universiti Pertanian Malaysia**

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DEDICATED

to the memory of my late

Father

VARGHESE KRISHNAPILLAY

and

to my Mother whose patience and

understanding has been a

constant source of

inspiration for

me throughout

this study



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TABLE OF CONTENTS

| | PAGE |
|--|-------------|
| ACKNOWLEDGEMENTS | iii |
| LIST OF TABLES | viii |
| LIST OF FIGURES | xii |
| LIST OF PLATES | xiii |
| LIST OF APPENDICES | xviii |
| LIST OF ABBREVIATIONS | xx |
| ABSTRACT | xxii |
| 1. INTRODUCTION AND LITERATURE REVIEW | 1 |
| 1.1 Introduction | 1 |
| 1.1.1 Origin Distribution and Ecology of the Sago Palm (<i>Metroxylon sagu</i>) | 1 |
| 1.1.2 Botany and Taxonomy of the Sago Palm | 4 |
| 1.1.3 Economic Uses of the Sago Palm and Sago Starch | 6 |
| 1.1.4 Breeding and Selection in the Sago Palm | 10 |
| 1.1.5 The Role of <i>in vitro</i> Propagation in the Commercialisation of the Sago Palm | 12 |
| 1.1.6 The Aim of the Investigation | 14 |
| 1.2 Review of Literature | 15 |
| 1.2.1 Introduction | 15 |
| 1.2.2 Embryo Culture of Palms | 16 |
| 1.2.3 <i>In vitro</i> Propagation of Palms | 22 |
| 1.2.4 Resume | 30 |



| | PAGE |
|---|-------------|
| 2. MATERIAL AND METHODS | 32 |
| 2.1 General | 32 |
| 2.1.1 Glassware and Cleaning | 32 |
| 2.1.2 Chemicals | 32 |
| 2.1.3 Preparation of Stock Solutions and Culture Media | 33 |
| 2.1.4 Scope of Study | 34 |
| 2.2 Embryo Culture | 34 |
| 2.2.1 Collection | 34 |
| 2.2.2 Storage of Fruit | 34 |
| 2.2.3 Excision of Embryos | 36 |
| 2.2.4 Sterilization of Embryos | 37 |
| 2.2.5 Choice of Basal Medium and Optimum pH | 37 |
| 2.2.6 Effect of Selected Addenda and Environmental Conditions on Development of Excised Embryos | 38 |
| 2.3 Culture of Vegetative Tissues | 40 |
| 2.3.1 Source of Plant Material and Collection | 40 |
| 2.3.2 Selection of Suitable Explants for <i>in vitro</i> Culture | 43 |
| 2.3.3 Surface Sterilization of Explants | 47 |
| 2.3.4 Choice of Basal Medium and Optimum pH | 52 |
| 2.3.5 Effect of Selected Addenda and Environmental Conditions on Excised Explants | 52 |
| 2.4 Histological Studies | 54 |
| 2.4.1 Light Microscopy | 54 |
| 3. RESULTS | 55 |
| 3.1 Embryo Culture | 55 |
| 3.1.1 Collection of Sago Fruit | 55 |
| 3.1.2 Storage of Fruit | 59 |

| | PAGE | |
|-------|--|-----|
| 3.1.3 | Excision of Embryos | 61 |
| 3.1.4 | Structure of the Embryo and Endosperm | 63 |
| 3.1.5 | Surface Sterilization of Embryos | 68 |
| 3.1.6 | Choice of Basal Medium and Optimum pH | 73 |
| 3.1.7 | Effect of Selected Addenda and Environmental Conditions on Development of Excised Embryos | 78 |
| 3.2 | Culture of Vegetative Tissues | 119 |
| 3.2.1 | Source and Collection of Plant Material | 119 |
| 3.2.2 | Selection of Suitable Explants for <i>in vitro</i> Culture | 119 |
| 3.2.3 | Surface Sterilization of Explants | 119 |
| 3.2.4 | Anatomical Structure of Responsive Explants | 140 |
| 3.2.5 | Effect of Selected Addenda and Environmental Conditions on Vegetative Tissues | 142 |
| 4. | DISCUSSION | 179 |
| 4.1 | Embryo Culture | 180 |
| 4.2 | Culture of Vegetative Tissues | 188 |
| 4.3 | Suggestions for Future Studies | 193 |
| 5. | SUMMARY AND CONCLUSION | 195 |
| 6. | BIBLIOGRAPHY | 198 |
| 7. | APPENDICES | 210 |



LIST OF TABLES

| TABLE NO. | | PAGE |
|-----------|--|------|
| 3.1 | Mean Percentage Viability of Embryos from Fruit Stored under Various Conditions | 59 |
| 3.2 | Mean Percentage of Axenic Cultures Two Weeks after Sterilization | 70 |
| 3.3 | Mean Percentage of Surviving Embryos after Six Weeks in Culture | 70 |
| 3.4 | Mean Percentage of Developing Sago Embryos on Two Basal Media | 74 |
| 3.5 | Mean Percentage of Embryos that Showed Growth and Development after Four Weeks in Culture on Tisserat and DeMason (1980) Medium at different pH values | 76 |
| 3.6 | Mean Percentage of Embryos producing both Shoot and Root in Media containing NAA/BAP with or without Charcoal, in the Light or in the Dark | 80 |
| 3.7 | Mean Percentage of Embryos producing only Shoots in Media containing NAA/BAP with or without Charcoal, in the Light or in the Dark | 82 |
| 3.8 | Mean Percentage of Embryos forming Callus in Media containing NAA/BAP with or without Charcoal, in the Light or in the Dark | 84 |
| 3.9 | Mean Percentage of Embryos producing both Shoot and Root in Media containing 2, 4-D/2iP with or without Charcoal, in the Light or in the Dark | 86 |
| 3.10 | Mean Percentage of Embryos producing only Shoots in Media containing 2, 4-D/2iP with or without Charcoal, in the Light or in the Dark | 88 |



| TABLE NO. | | PAGE |
|------------------|---|-------------|
| 3.11 | Mean Percentage of Embryos forming Callus in Media containing 2, 4-D/2iP with or without Charcoal, in the Light or in the Dark | 90 |
| 3.12 | Mean Percentage of Embryos producing both Shoot and Root in Media containing low levels of NAA/BAP with or without Charcoal, in the Light or in the Dark | 97 |
| 3.13 | Mean Percentage of Embryos producing only Shoots in Media containing low levels of NAA/BAP with or without Charcoal, in the Light or in the Dark | 99 |
| 3.14 | Mean Percentage of Embryos producing both Shoot and Root in Media containing low levels of 2, 4-D/2iP with or without Charcoal, in the Light or in the Dark | 101 |
| 3.15 | Mean Percentage of Embryos producing only Shoots in Media containing low levels of 2, 4-D/2iP with or without Charcoal, in the Light or in the Dark | 103 |
| 3.16 | Mean Percentage of Embryos with only Shoots which showed Normal Shoot and Root Development after Three Weeks of Subculture on the best NAA/BAP Media | 114 |
| 3.17 | Mean Percentage of Embryos with only Shoots which showed Normal Shoot and Root Development after Six Weeks of Subculture on the best NAA/BAP Media | 115 |
| 3.18 | Mean Percentage of Embryos with only Shoots which showed Normal Shoot and Root Development after Three Weeks of Subculture on the best 2, 4-D/2iP Media | 116 |
| 3.19 | Mean Percentage of Embryos with only Shoots which showed Normal Shoot and Root Development after Six Weeks of Subculture on the best 2, 4-D/2iP Media | 117 |
| | | 120 |



| TABLE NO. | | PAGE |
|------------------|--|-------------|
| 3.20 | Surface Sterilization of Primary, Secondary and Tertiary Root Sections | 120 |
| 3.21 | Surface Sterilization of Primary Root Segments using Mercuric Chloride (HgCl ₂) | 121 |
| 3.22 | Surface Sterilization of Secondary and Tertiary Root Segments using Mercuric Chloride (HgCl ₂) | 122 |
| 3.23 | Surface Sterilization of Primary Root Segments using Commercial Clorox | 124 |
| 3.24 | Surface Sterilization of Secondary and Tertiary Root Segments using Commercial Clorox | 125 |
| 3.25 | Emerged Leaf Explants Swabbed with 70% Alcohol prior to Sterilization with Mercuric Chloride (HgCl ₂) | 127 |
| 3.26 | Emerged Leaf Explants Sterilized with Mercuric Chloride (HgCl ₂) without prior Swabbing with 70% Alcohol | 128 |
| 3.27 | Emerged Leaf Explants Swabbed with 70% Alcohol prior to Sterilization with Commercial Clorox | 129 |
| 3.28 | Emerged Leaf Explants Sterilized with Commercial Clorox without prior Swabbing with 70% Alcohol | 130 |
| 3.29 | Unemerged Leaf Explants Swabbed with 70% Alcohol | 131 |
| 3.30 | Unemerged Leaf Explants Sterilized with Mercuric Chloride (HgCl ₂) | 132 |
| 3.31 | Unemerged Leaf Explants Sterilized in 0.05% Mercuric Chloride (HgCl ₂) for 5 minutes followed by Commercial Clorox | 133 |
| 3.32 | Unemerged Leaf Explants Sterilized with Commercial Clorox | 134 |
| 3.33 | Stem Apex Explants Swabbed with 70% Alcohol | 135 |



| TABLE NO. | | PAGE |
|------------------|---|-------------|
| 3.34 | Stem Apex Explants Sterilized with Mercuric Chloride (HgCl ₂) | 136 |
| 3.35 | Stem Apex Explants Sterilized with 0.05% Mercuric Chloride (HgCl ₂) for 5 minutes followed by Commercial Clorox | 137 |
| 3.36 | Response of Explants on Media containing NAA/BAP combinations, cultured in the Dark | 146 |
| 3.37 | Response of Explants on Media containing 2, 4-D/2iP combinations, in the Dark | 152 |
| 3.38 | Response of Explants on Media containing only 2, 4-D in the presence of Charcoal, in the Dark | 158 |
| 3.39 | Response of Explants on Media containing only 2, 4-D in the presence of Charcoal, in the Light | 163 |
| 3.40 | Response of Explants Subcultured from NAA/BAP Media after One Month in the Dark onto Media containing 2, 4-D and Charcoal, Cultured in the Light | 169 |
| 3.41 | Response of Explants Subcultured from 2, 4-D/2iP Media after One Month in the Dark onto Media containing 2, 4-D and Charcoal, Cultured in the Light | 175 |



LIST OF FIGURES

| FIGURE | | PAGE |
|--------|--|------|
| 1 | Mean Percentage Viability of Embryos from Fruit Stored under Various Conditions | 60 |
| 2A | Mean Percentage of Axenic Cultures Two Weeks after Sterilization with Mercuric Chloride (HgCl_2) | 71 |
| 2B | Mean Percentage Survival of HgCl_2 - Sterilized Embryos after Six Weeks in Culture | 71 |
| 3A | Mean Percentage of Axenic Cultures Two Weeks after Sterilization with Clorox | 72 |
| 3B | Mean Percentage Survival of Clorox-Sterilized Embryos after Six Weeks in Culture | 72 |
| 4 | Mean Percentage of Embryos that showed Growth and Development after Four Weeks in Culture on Tisserat and DeMason (1980) Medium at different pH values | 77 |



LIST OF PLATES

| PLATE | | PAGE |
|-------|--|------|
| 1 | A Fruiting Sago Palm | 35 |
| 2 | A Cluster of Sago Palms in the vegetative Phase, located in an abandoned Rice Field | 41 |
| 3 | Excised Young Offshoots with some Excision Tools | 42 |
| 4 | Excised Primary, Secondary and Tertiary Roots of the Sago Palm | 44 |
| 5 | Young Emerged Leaves Reddish Green in Colour, used in the Study | 44 |
| 6 | Young Unemerged Leaves, White in Colour, enclosed firmly within two outer Leaf Sheaths | 45 |
| 7 | Stem Apex Tissue (not visible), enclosed firmly within the outer Sheaths of Leaf bases | 46 |
| 8 | Young Unemerged Leaf Tissue exposed from enclosing Leaf Sheaths | 49 |
| 9 | Intact Stem Apex Tissue exposed | 50 |
| 10 | Stem Apex Tissue sliced into two longitudinally to show the Apical Meristem | 51 |
| 11 | Close-up of the infructescence of a Sago Palm | 56 |
| 12 | Collection of Sago Fruit after felling the Fruiting Palm | 57 |
| 13 | A sample of Fertile Sago Fruit | 58 |
| 14 | A sample of Infertile Sago Fruit | 58 |
| 15 | Sago Fruit, Whole Seeds and an Excised Embryo | 62 |
| 16 | Sago seeds cut into two to expose the Embryos | 64 |



| PLATE | | PAGE |
|--------------|---|-------------|
| 17 | Removal of the Sago Embryo from the seed using a single edged stainless steel razor blade | 65 |
| 18 | Excised Embryos with the soft Operculum still attached to the top of the Embryo | 66 |
| 19 | Longitudinal Section through a Sago Embryo | 67 |
| 20 | Longitudinal Section through the Endosperm of a Sago Palm | 69 |
| 21 | Sago Embryos showing Formation of Callus | 95 |
| 22 | Proliferation of the Callus formed from the Sago Embryo | 95 |
| 23 | Example of Shoot and Root Development in a Sago Embryo, Cultured in a medium without Charcoal, and incubated in the Light | 105 |
| 24 | Example of Shoot and Root Development in a Sago Embryo Cultured in a medium containing Charcoal and incubated in the Light | 106 |
| 25 | Example of Shoot and Root Development in a Sago Embryo Cultured in a medium without Charcoal and incubated in the Dark | 107 |
| 26 | Example of a Shoot and Root Development in a Sago Embryo Cultured in a medium containing Charcoal and incubated in the Dark | 108 |
| 27 | Example of a Sago Embryo Forming only Shoot in a medium without Charcoal and incubated in the Light | 109 |
| 28 | Example of a Sago Embryo Forming only Shoot in a medium containing Charcoal and incubated in the Light | 110 |
| 29 | Example of a Sago Embryo Forming only Shoot in a medium without Charcoal and incubated in the Dark | 111 |
| 30 | Example of a Sago Embryo Forming only Shoot in a medium containing Charcoal and incubated in the Dark | 112 |



| PLATE | | PAGE |
|--------------|--|-------------|
| 31 | Sterilized Tertiary Root Segment showing elongation and some swelling in Tisserat and DeMason (1980) basal medium, without hormones or activated Charcoal | 123 |
| 32 | Transverse Section through a Tertiary Root | 141 |
| 33 | Tranverse Section through an Unemerged Leaf | 143 |
| 34 | Longitudinal Section through the Stem Apex of a Young Offshoot | 144 |
| 35 | Swelling and Expansion of the Tertiary Root in Medium containing 25 mg ^l ⁻¹ NAA | 147 |
| 36 | Tertiary Root segment beginning to form Callus in Medium containing 25 mg ^l ⁻¹ NAA after 5 months in Culture | 148 |
| 37 | Example of Unemerged Leaf explant turning Brown after attaining Maximum Expansion in Medium containing NAA/BAP | 150 |
| 38 | Example of Stem Apex Tissues turning Brown after attaining Maximum Expansion in Medium containing NAA/BAP | 151 |
| 39 | Unemerged Leaf Tissues showing the Formation of White Crystalline Callus at their cut ends in Medium containing 25 mg ^l ⁻¹ 2, 4-D | 154 |
| 40 | Proliferation of the White Crystalline Callus formed on an Unemerged Leaf section Cultured in Medium containing 25 mg ^l ⁻¹ 2, 4-D | 155 |
| 41 | Stem Apex Tissues showing the Formation of White Crystalline Callus at the base of the Explants in Medium containing 25 mg ^l ⁻¹ 2, 4-D | 156 |
| 42 | Expanded Leaf Tissues turning Brown in Medium containing Charcoal and 2, 4-D, Cultured in the Dark | 159 |
| 43 | Expanded Stem Apex Tissues turning Brown in Medium containing Charcoal and 2, 4-D Cultured in the Dark | 160 |



| PLATE | | PAGE |
|--------------|--|-------------|
| 44 | Leaf Tissues expanding in Medium containing Charcoal and 2, 4-D incubated in the Dark | 161 |
| 45 | Stem Apex Tissues expanding in Medium containing Charcoal and 2, 4-D Cultured in the Dark | 162 |
| 46 | Unemerged Leaf Tissues Cultured in Medium containing Charcoal and 2, 4-D, incubated in the Light, showing Greening and thickening of its tissues | 165 |
| 47 | Apex Tissues developing into Normal Plant but without Roots in Medium containing Charcoal and 2, 4-D, incubated in the Light | 166 |
| 48 | Apex Tissues Cultured in Medium containing Charcoal and 2, 4-D, incubated in the Light showing Greening and thickening of its tissues | 167 |
| 49 | Unemerged Leaf Tissue subcultured from Medium containing 10 mg l^{-1} NAA and 1 mg l^{-1} BAP showing Callus Formation on Media containing Charcoal and 175 mg l^{-1} 2, 4-D, incubated in the Light | 171 |
| 50 | Stem Apex Tissue subcultured from Medium containing 10 mg l^{-1} NAA and 1 mg l^{-1} BAP showing Callus Formation on Media containing Charcoal and 175 mg l^{-1} 2, 4-D, incubated in the Light | 172 |
| 51 | Rapid Proliferation of the Callus formed from the Leaf and Stem Apex Tissues Subcultured to Medium containing charcoal and 175 mg l^{-1} 2, 4-D | 173 |
| 52 | Transverse section through Nodular Callus showing Budding of the Callus and Differentiation of the Tissues | 174 |
| 53 | Unemerged Leaf Tissue subcultured from Medium containing 2, 4-D/2iP, showing Greening and thickening of the Tissue in Medium containing 175 mg l^{-1} 2, 4-D, incubated in the Light | 176 |



PLATE**PAGE**

| | | |
|----|--|-----|
| 54 | Stem Apex Tissue subcultured from Medium containing 2, 4-D/2iP, showing Greening and Thickening of the Tissue on Medium containing Charcoal and 175 mg l^{-1} 2, 4-D, incubated in the Light | 177 |
|----|--|-----|



LIST OF APPENDICES

| APPENDIX | | PAGE |
|----------|--|------|
| I | Media Formulation after Murashige and Skoog (1962) | 210 |
| II | Media Formulation after Tisserat and DeMason (1980) | 212 |
| III | Preparation of Hampts Solution | 214 |
| IV | SPSS - ANOVA Programme for Embryo Culture in Media containing NAA/BAP | 215 |
| IVa | ANOVA and DNMRT for Embryos Developing both Shoot and Root in Media containing NAA/BAP | 216 |
| IVb | ANOVA and DNMRT for Embryos Developing only Shoot in Media containing NAA/BAP | 218 |
| IVc | ANOVA and DNMRT for Embryos Forming Callus in Media containing NAA/BAP | 220 |
| V | SPSS - ANOVA Programme for Embryo Culture in Media containing 2, 4-D/2iP | 222 |
| Va | ANOVA and DNMRT for Embryos Developing both Shoot and Root in Media containing 2, 4-D/2iP | 223 |
| Vb | ANOVA and DNMRT for Embryos Developing only Shoot in Media containing 2, 4-D/2iP | 225 |
| Vc | ANOVA and DNMRT for Embryos Forming Callus in Media containing 2, 4-D/2iP | 227 |
| VI | SPSS - ANOVA Programme for Embryo Culture in Media containing low levels of NAA/BAP | 229 |
| VIa | ANOVA and DNMRT for Embryos Developing both Shoot and Root in Media containing low levels of NAA/BAP | 230 |



| APPENDIX | | PAGE |
|-----------------|---|-------------|
| VIb | ANOVA and DNMRT for Embryos Developing only Shoot in Media containing low levels of NAA/BAP | 232 |
| VII | SPSS - ANOVA Programme for Embryo Culture in Media containing low levels of 2, 4-D/2iP | 234 |
| VIIa | ANOVA and DNMRT for Embryos Developing both Shoot and Root in Media containing low levels of 2, 4-D/2iP | 235 |
| VIIb | ANOVA and DNMRT for Embryos Developing only Shoot in Media containing low levels of 2, 4-D/2iP | 237 |



LIST OF ABBREVIATIONS

| | | |
|--------------------------------------|---|---|
| ANOVA | - | analysis of variance |
| BAP | - | benzylaminopurine |
| °C | - | degrees centigrade |
| cm² | - | square centimetre |
| 2, 4-D | - | 2, 4-dichlorophenoxyacetic acid |
| df | - | degree of freedom |
| DNMRT | - | Duncan's new multiple range test |
| EtOH | - | ethyl alcohol |
| Fe-EDTA | - | ferrous-ethylenediaminetetraacetic acid |
| g l⁻¹ | - | grams per litre |
| HCl | - | hydrochloric acid |
| HgCl₂ | - | mercuric chloride |
| IAA | - | indole-3-acetic acid |
| IBA | - | indole-3-butyric acid |
| 2iP | - | N ⁶ -(Δ^2 - isopentenyl) adenine |
| Kg/cm³ | - | kilogram per cubic centimetre |
| KH₂PO₄ | - | potassium di-hydrogen phosphate |
| M | - | molar |
| mg l⁻¹ | - | miligram per litre |
| mm | - | millimetre |
| MS | - | Murashige and Skoog medium formulation (1962) |
| M.S. | - | mean sum of squares |
| NAA | - | α - naphthalene acetic acid |
| NaH₂PO₄ | - | sodium di-hydrogen phosphate |
| P.C.I | - | medium formulation (Smith and Thomas, 1973) |



| | | |
|----------------------|---|---|
| P.C.m | - | medium formulation (Smith and Thomas, 1973) |
| S.D. | - | standard deviation |
| S.S. | - | sum of squares |
| 2, 4, 5-T | - | 2, 4, 5 - trichlorophenoxyacetic acid |
| Y₃ | - | medium formulation (Eeuwens, 1976) |
| % | - | percentage |

ABSTRACT

An abstract of the thesis presented to the Senate of Universiti Pertanian Malaysia in partial fulfilment of the requirement for the Degree of Master of Science.

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Supervisor : Dr Zaliha Christine Alang
Faculty : Science and Environmental Studies
Key Words : *Metroxylon sagu*, embryo culture, *in vitro*,
sago palm.

The sago palm (*Metroxylon sagu*) is an under-exploited starch storing tropical crop which has great commercial potential.

Excised embryos of this palm were cultured *in vitro* for the first time. Suitable sterilization methods, media, addenda and cultural conditions for normal development of embryos and for callus production from excised embryos were investigated. As a large number of fruit (1 000 - 2 000) were

