

***IN VITRO* SEED GERMINATION OF *Archidendron  
pauciflorum* (JERING)**

**NUR SYAHIRAH AZHAR**

**Final Year Project Report Submitted in  
Partial Fulfilment of the Requirements for the  
Degree of Bachelor in Science (Hons.) Biology  
In the Faculty of Applied Sciences  
Universiti Teknologi MARA**

**JULY 2016**

This Final Year Project Report entitled “*In Vitro* Seed Germination of *Archidendron pauciflorum* (Jering)” was submitted by Nur Syahirah Azhar, in partial fulfilment of the requirements for the Degree of Bachelor in Science (Hons.) Biology, in the Faculty of Applied Science, and was approved by

---

Dr. Rosli bin Noormi  
Supervisor  
B. Sc. (Hons.) Biology  
Faculty of Applied Science  
Universiti Teknologi MARA  
72000 Kuala Pilah Negeri Sembilan

---

Ilyanie binti Haji Yaacob  
Project Coordinator  
B.Sc. (Hons.) Biology  
Faculty of Applied Science  
Universiti Teknologi MARA  
72000 Kuala Pilah  
Negeri Sembilan

---

Dr. Nor'aisyah binti Abu Shah  
Head of Programme  
B.Sc. (Hons.) Biology  
Faculty of Applied Science  
Universiti Teknologi MARA  
72000 Kuala Pilah  
Negeri Sembilan

Date: \_\_\_\_\_

## TABLE OF CONTENTS

	Page
<b>ACKNOWLEDGEMENT</b>	<b>iii</b>
<b>TABLE OF CONTENTS</b>	<b>iv</b>
<b>LIST OF TABLES</b>	<b>vi</b>
<b>LIST OF FIGURES</b>	<b>vii</b>
<b>LIST OF ABBREVIATIONS</b>	<b>viii</b>
<b>ABSTRACT</b>	<b>ix</b>
<b>ABSTRAK</b>	<b>x</b>
<b>1.0 INTRODUCTION</b>	
1.1 Background Study	1
1.2 Problem Statement	4
1.3 Significance of the Study	4
1.4 Objective of the Study	5
<b>2.0 LITERATURE REVIEW</b>	
2.1 History	6
2.2 Tissue Culture	7
2.3 Seed Sterilization	9
2.4 Seed Germination	10
2.5 Phytohormone on Seed Germination	11
<b>3.0 METHODOLOGY</b>	
3.1 Materials	
3.1.1 Raw Material	12
3.1.2 Chemicals	12
3.1.3 Apparatus	12
3.2 Methods	
3.2.1 Seed Selection	13
3.2.2 Culture Media Preparation	13
3.2.3 Bean Sterilization	13
3.2.4 Bean Germination	14
3.3 Data Analysis	
3.3.1 Phytohormone Concentration	15

<b>4.0</b>	<b>RESULTS AND DISCUSSIONS</b>	
4.1	Beans selection	16
4.2	Beans sterilization	17
4.3	Beans inoculation	18
4.4	Light intensity	21
4.5	Growth rate of seed germination	23
4.6	Contamination rate	28
<b>5.0</b>	<b>CONCLUSIONS AND RECOMMENDATIONS</b>	30
	<b>CITED REFERENCES</b>	31
	<b>APPENDICES</b>	34
	<b>CURRICULUM VITAE</b>	38

## ABSTRACT

### ***IN VITRO* SEED GERMINATION OF *Archidendron pauciflorum* (JERING)**

*Archidendron pauciflorum* is known in medical field to have high medicinal value. It is collected for medical purposes including for cancer cases. Despite that, there is an obstacle for its production due to the presence of seed dormancy. Therefore growing the seeds *in vitro* was done to break the seed dormancy by using a few concentrations of different phytohormones. Tissue culture is one alternative to increase crop production hence, a study was conducted to see which plant hormone could help to increase the seed's growth rate. Indole-3-acetic acid (IAA) and 1-Naphthaleneacetic acid (NAA) were added into the culture media each with different concentrations (1 - 5 mg/L). Results were shown as quickly as four days of inoculation where the seeds inoculated in the media with IAA had grown their shoot and roots; grew the best with the concentration of 1 mg/L under dim light condition. However, results were obtained only with 1 mg/L and 2 mg/L NAA due to the condition of the seeds where the embryos were dead in the concentration of 3 mg/L, 4 mg/L and 5mg/L. This matter should not be a concern as IAA evidently could be used to increase the growth of *A. pauciflorum* seeds. The result was assumed to be able to aid the plant production of this species.