# EFFECT OF OLIGOCHITOSAN AND ACUTE GAMMA IRRADIATION ON KENAF SEEDLINGS

**MOHAMAD AZIZI BIN MOHD SALIMAN**

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

**JULY 2017**

This Final Year Project entitled **"Effect of Oligochitosan and Acute Gamma Irradiation on Kenaf Seedlings"** was submitted by Mohamad Azizi bin Mohd Saliman, in partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences, and was approved by

_____

Dr. Nor' Aishah binti Hasan
Supervisor
B. Sc. (Hons.) Biology
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah Negeri Sembilan.

_____

Lili Syahani binti Rusli
Project Coordinator
B. Sc. (Hons.) Biology
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah,
Negeri Sembilan.

_____

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

Date: _____

## TABLE OF CONTENTS

## ABSTRACT

### EFFECT OF OLIGOCHITOSAN AND ACUTE GAMMA IRRADIATION ON KENAF SEEDLINGS

Kenaf has the potential to be one of the main national industrial crop and has many uses such as paper products. However, the production of Kenaf in Malaysia is relatively low compared to other countries. Hence, study on growth of Kenaf (V36) must be done. The objectives of this study were to determine the effect of acute gamma irradiation and oligochitosan towards Kenaf growth and its correlations. Two treatments were given to Kenaf which are acute gamma irradiation and oligochitosan. Seeds of Kenaf were irradiated with 0, 100, 200 and 400 Gy to observe the growth in plants height, roots length, fresh weight and dry weight. Concentration of oligochitosan (0, 50, 100, 150, 200 and 250 ppm) were treated to the seeds to measure the plant growth for 30 days. Based on this study, 100 ppm concentration of oligochitosan showed a significant growth in plant height ($p=0.006$). Increasing concentration of oligochitosan up to 250 ppm demonstrated low growth in term of plant height ($p=0.006$). Highest plant height of Kenaf was observed when irradiated with 200 Gy ($p=0.000$). However, plant irradiated with 400 Gy showed a significant decrease in plant height ($p=0.000$). There was a moderate and positive correlation between plant growth and acute gamma irradiation ($R^2=0.603$). Weak and positive correlation between plant growth and oligochitosan ($R^2=0.103$). Finding is this study suggest the application of low concentration of oligochitosan and low doses of gamma irradiation to increase plant growth.