

UNIVERSITI TEKNOLOGI MARA

**BROWNING INHIBITION IN *IN VITRO*
REGENERATION OF *MUSA PARADISIACA* CV.
TANDUK USING ASCORBIC ACID**

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Dissertation submitted in partial fulfillment
of the requirements for the degree of
Master of Science
(Plant Biotechnology)

Faculty of Plantation & Agrotechnology

February 2020

AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicate or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Micropropagation of banana is well known and the product derived from it is accepted among banana plantation community. Tissue culture banana basically having better characteristics than banana plant resulting from conventional cultivation. It is due to the plant selection where the plant having much better quality will likely to be choose. With the help of micropropagation technique, it is feasible to produce hundreds to thousands of planting materials with super-trait which is exactly the same as mother plant. In Malaysia, tissue culture technique for several banana cultivar has been established. Unfortunately, it is not for banana known as Tanduk. Problems surrounding tissue culture of *Musa paradisiaca* cv. Tanduk is mainly due to its high phenolic content which will leads to browning. Unsolved browning issue will cause the death of the plant. In this study, minimization of browning is our concern where micropropagation of *Musa paradisiaca* cv. Tanduk were subjected with three (3) different treatments: 1) Ascorbic acid 0.0 – 20.0 mg/L; 2) Photoperiod of 16 hours light and 8 hours dark, and 24 hours darkness condition; 3) Half and full medium strength. The result shows that 15.0 mg/L ascorbic acid in a 16 hours light and 8 hours darkness photoperiod were observed to effectively minimize browning in the initiation stage. It is supported by PPO Assay data conducted simultaneously. Finally, variation among the treated banana plants were observed morphologically and the observation conducted shows insignificant variation among the treated banana plants.

ACKNOWLEDGEMENT

Firstly, I wish to thank God for giving me the opportunity to embark on my Master Degree and for completing this long and challenging journey successfully. My gratitude and thanks go to my supervisor Assoc. Prof. Dr. Asmah Awal, and co-supervisor, Prof. Dr. Norzulaani Khalid. Thank you for the support, patience and ideas in assisting me with this research project.

Special thanks to my wife, Maszlin Mohd Yusof for always supporting me during the ups and downs and for being my discussion buddies throughout this journey. Not to forget, my kids Muhammad Fathurrahman, Muhammad Lutfirrahman and Muhammad Amar Rahman. My appreciation also goes to my mom, father, family, colleagues and friends for helping me with this project.

My gratitude also goes to my employer Intellectual Property Cooperation of Malaysia (MyIPO) for the scholarship and study leave awarded to me. Without the assistance from MyIPO it will be a lot more difficult to complete this journey.

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