

**REVIEW ON THE POTENTIAL OF ENDOPHYTIC MICROORGANISMS  
AS BIOLOGICAL CONTROL AGENTS OF COCOA DISEASES**

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## DECLARATION

This final year project is a partial fulfilment of the requirements for a degree of Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

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## **ABSTRACT**

### **REVIEW ON THE POTENTIAL OF ENDOPHYTIC MICROORGANISMS AS BIOLOGICAL CONTROL AGENTS OF COCOA DISEASES**

This review paper aims to discuss on the potential of endophytic microorganism as bio-control agents to control cocoa diseases. The review covers four main topics which are (i) the current production of cocoa in Malaysia, (ii) the role of endophytic fungi and (iii) bacteria as biological control cocoa diseases and (iv) the future direction of biological control of the diseases using endophytes. Fungal pathogens are the major group affecting the cocoa crops and give negative impact on bean production. There are several approaches have been employed to control the diseases such as cultural, chemical and biological controls. Research and development towards production of reliable biological products are getting much attention among researchers. The application of endophytic microorganisms as biological control agents to combat cocoa diseases is well explored as the microorganisms show big potential to inhibit the growth of pathogens through multiple mechanisms.

**Keywords:** Endophytic microorganism, biological control, cocoa diseases.