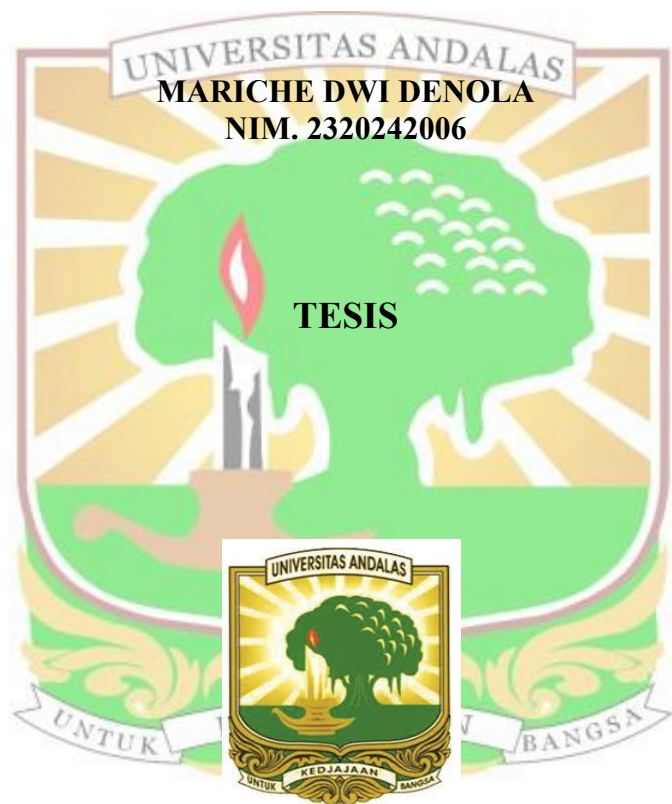


**PENGARUH JENIS DAN DOSIS FUNGI MIKORIZA
ARBUSKULA PADA MEDIA TANAH BEKAS TAMBANG
KAPUR TERHADAP PERTUMBUHAN BIBIT KAKAO**
(*Theobroma cacao* L.)



**PROGRAM STUDI S2 AGRONOMI
FAKULTAS PERTANIAN
UNIVERSITAS ANDALAS
PADANG
2025**

SUMMARY

Mariche Dwi Denola. "The Effect of Type and Dosage of Arbuscular Mycorrhizal Fungi (AMF) in Former Lime Mine Soil Media on the Growth of Cocoa Seeds (*Theobroma cacao* L.)". Supervised by Dr. Armansyah, SP, M.P and Prof. Dr. Ir. Auzar Syarif, MS.

Indonesia is one of the world's leading producers of cocoa (*Theobroma cacao* L.). Cocoa is a strategic commodity in the plantation sector, contributing significantly to the national economy. The challenge in cocoa development is the limited availability of fertile and productive land, requiring alternatives to utilize marginal land such as former limestone mines. Former limestone mines in Semen Padang can be rehabilitated using Arbuscular Mycorrhizal Fungi (AMF). This study aimed to determine the interaction between the best AMF type and dosage, the best AMF type, and the best dosage on the growth of cocoa seedlings planted on former limestone mined soil. The experimental study was conducted from February to June 2025. This study was conducted at the Wire House, Faculty of Agriculture, Andalas University, in Padang City, West Sumatra, in the Seed Science and Technology Laboratory of the Faculty of Agriculture, Andalas University. Root colonization observations were conducted at the Plant Physiology Laboratory, Faculty of Agriculture, Andalas University, Padang.

The study used a factorial Completely Randomized Design (CRD) consisting of two factors. The first factor was the type of AMF, which consisted of three levels: *Glomus* sp., *Gigaspora* sp., and *Acaulospora* sp. The second factor was the AMF dosage, which consisted of four levels: 0 g/seedling, 10 g/seedling, 20 g/seedling, and 30 g/seedling. Observation variables included analysis of post-limestone mine soil, root colonization by AMF, seedling height, number of leaves, fresh shoot weight, dry shoot weight, fresh root weight, dry root weight, shoot-root ratio, net assimilation rate, and relative growth rate. Data were analyzed using analysis of variance (ANOVA), an F-test for significant differences at the 5% level, followed by a *Duncan's New Multiple Range Test* DNMRT.

The results showed no interaction between AMF type and dosage on the growth of cocoa seedlings planted in post-limestone mine soil. The *Glomus* sp. AMF was the best AMF for enhancing the growth of cocoa seedlings planted in post-limestone mine soil. Meanwhile, the AMF dose of 30 g/seedling is the best for increasing the growth of cocoa seedlings planted on ex-lime mining land.