

**THE EFFECT OF TORSIONAL FORCES ON THE FORMATION OF  
REACTION TISSUES ON *Swietenia macrophylla* SEEDLINGS**

**Thesis**

**As Part of Requirement to Obtain Master Degree**



**Proposed by:**

**Fanany Wuri Prastiwi**

**23/530686/PKT/01561**

**To**

**MASTER IN FORESTRY SCIENCE**

**FACULTY OF FORESTRY**

**UNIVERSITAS GADJAH MADA**

**YOGYAKARTA**

**2026**

**THESIS**

**THE EFFECT OF TORSIONAL FORCES ON THE FORMATION OF  
REACTION TISSUES ON *Swietenia macrophylla* SEEDLINGS**

Prepared and written by

Fanany Wuri Prastiwi

23/530686/PKT/01561

Has been defended in front of the Board of Examiners

on 8 January 2026

Supervisor I



Prof. Dr. Widyanto Dwi Nugroho, S.Hut., M.Agr.

Supervisor II



Prof. Satoshi Nakaba, Ph.D.

Examiner I



Dr. Ir. Fanny Hidayati, S.Hut., M.Sc. IPM.

Examiner II




Dr. Ir. Hairi Cipta, S.Hut., M.Agr.

This Thesis has been accepted as one of the requirements

to obtain a Master of Science degree (M.Sc.)

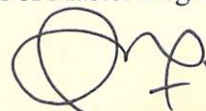
Date: .....

Dean of Faculty of Forestry



Ir. Sigit Sunarta, S.Hut., M.P., M.Sc., Ph.D., IPU.  
NIP: 197107281999031001

Chairman of Master Degree Program



Dr. Ir. Emma Soraya, S.Hut., M. For. IPU.  
NIP: 197601172006042001