PHENOLOGY STUDY ON *Gliricidia sepium (Jacq.)* Steud FLOWERING FROM VARIOUS PROVENANCES AND ITS FRUIT PRODUCTS AND THE INFLUENCE OF N-P-K FERTILIZER ADDING IN WANAGAMA I YOGYAKARTA

Muh. Restu
15102/II-4/338/00

ABSTRACT

Forest resources were decreased in productivity since the exploitation of them for a variety interests. They needs a rehabilitation effort to improve its productivity. Forest plants breeding is the best way to improve the forest productivity both in quality and quantity, so it needs a research on the reproduction biology, that is flowering phenology and seed production. A kind of plants that can be used for this forest plant breeding is *Gliricidia sepium* (Gamal).

This research was conducted in Wanagama I Fakultas Kehutanan Universitas Gadjah Mada, in the plantation location of provenance experiment for *G. sepium* in plot 17. This research was conducted since March 2001 until October 2001, by using factorial experiment with *Split Plot Design.*

This research aims are: (1) to find out flowering and fertilization phenology of *Gliricidia sepium* from Guatemala, Nicaragua, and Local provenance, (2) to find out pod and seed production by adding fertilizer (3) to find out the best fertilizer provenance and dosage.

Flowering and fertilization phenology of *G. sepium* involved: (1) physical changing of generative organ that marked with step by step changing in the form of (a) leaves falling process, (b) flower induction, (c) flowering initiation, (d) flower growing until *anthesis,* (e) pollination and fertilization, (f) fruit or pod growth, (g) fruit maturity process. (2) the period from flowering process to be mature was 65 – 69 days in some steps: (a) bud forming in early July, (b) flower initiation for 15 – 19 days, (c) the flower is *receptive* 2 – 3 days, (e) pollination and fertilization for 2 days, (f) fruit growth or pod until reaches maximal size in 28 days, (g) maturity process in 16 days.

Peak flowering was in August of flowering percentage of Guatemala 31,25%, Nicaragua 41,66%, and Local 25%.

Fertilizer addition treatment influenced the pod and seed production directly, but its provenance and interaction did not influence directly. Fertilizer adding treatment of dosage 500 gram (P2) to the pod was really different from P0 and P1 treatment, but did not really different from P3. However, for seed production, P2 treatment was really different from other treatments.

The best pod and seed production result is P2 treatment with production result average per tree of 1.288 pods and 27.621 seeds.