THE EFFECT OF SEEDSOURCES, SPACING AND DIVERENT LEVEL OF NPK VERTILIZER ON *Gliricidia sepium* (Jacq.) Steud. GROWTH IN WANAGAMA I YOGYAKARTA

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ABSTRACT

Fuelwood is one of the important energy source, because that is easy to get, cheaper and easy to be established. The consumption of fuelwood increasing, as followed the time specialy in village comunity. Species that usually use as fuelwood, must have a high callory value, fast growing species, easly produces bud after cutting and high productifity of fuelwood. *Gliricidia sepium* is one of the spesies that has high fuelwood production, but also have other benefits, such as fooder, living fence, green manure, shadow crops,etc. The Provenance Trials of *Gliricidia sepium* in some countries, showed that Guatemala and Nikaragua provenance were the best seedsources, for that reason, these species needed to be developed in Indonesia and needed to compared with local variety. The objective of this research are: 1). To know the interaction between treatment (seed source, spacing and fertilizer) on *G. sepium* growth. 2). To compare of plant growth variation and adaptation capability from diferent seed sources. 3). To identify the best spacing and and to get the optimal of level NPK fertilizer for *G. sepium* growth.

This research used the split-split plot design,and that was composed as factorial by 3 x 3 x 4, they were 3 seed sources : Guatemala, Nikaragua, and Lokal (Wanagama I) ; 3 spacing : 2 x 2, 2 x 4, 4 x 4 meter and 4 dosages of NPK fertilizer : 0 , 50 , 100, 150 gram per tree. Seed sources as main plot, spacing as sub plot and different dosages of fertilizer as sub-sub plot. The number of bloks are 3, the number treeplots per seedlot are 16, and the total of unit experiment are 3 x 3 x 4 x 3 = 108. The total number of seedling were been planted are 108 x 16 =1728, and number plant were observed (inner plot) are 108 x 4 = 432. The characters were observed are trees adaptation (survival), number of branch, high and diameter of the trees. The data will be analized by analisis of varians and continued by DMRT to identified significansi of the treatments. This research have been started from September 1997 until September 1998. The benefit of this research are to know the best seedsources, to identified the optimal spacing and to get the best of dosage NPK vertilizer for gliricidia growth in Wanagama I

The result showed that diferent seedsources and dosage NPK vertilizer significanly, had the stem height, stem diameter and number of branching. Different spacing no significant on all growth parameters were observed. The interaction between two treatment did not indicate significanly, but interaction on three treatment showed significanly on number of branch. The best seed sources for stem high (312.248 cm), stem diameter (3,7417cm) and number of brancing (5,755) growth from Guatemala and 150 gram of NPK vertilizer result the best for number of brancing growth (5,119). Spacing no one indicate significanly to all growth parameter until the last observation.

Keywords : seed sources, spacing, NPK Vertilizer, *Gliricidia sepium*

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BAB I

PENDAHULUAN

A. Latar Belakang

Hutan menutupi seperempat sampai sepertiga bagian dari permukaan bumi atau kurang lebih 34-41 juta km persegi. Meskipun demikian area hutan yang dikelola oleh manusia secara intensif hanya 4 % atau sekitar 135 juta Ha, termasuk hutan dengan jenis *fast growing spesies* untuk kayu bakar (Dixon dalam Moriera, 1997). Lebih lanjut Moriera (1997), menyebutkan bahwa total kebutuhan kayu akan meningkat, dan kebutuhan kayu bakar pada tahun 2050 akan meningkat dua kali lebih cepat dari kebutuhan saat ini, dibanding kebutuhan kayu oleh industri kayu bulat.

Di Indonesia kayu bakar merupakan sumber energi yang sampai saat ini memiliki peranan penting, terutama bagi masyarakat yang hidup di pedesaan. Kayu merupakan sumber energi yang mudah didapat, murah dan mudah diusahakan, berbeda dengan sumber energi yang lain seperti minyak dan batu bara.

Kubutuhan kayu bakar di Indonesia sendiri pada tahun 2000 diperkirakan 105-114 juta meter kubik, yang didasarkan pada jumlah penduduk Indonesia mencapai 210 juta jiwa dan kebutuhan perkapita antara 0,5 - 2,1 meter kubik (Alrasyid, 1984).

Sumber kayu bakar dapat diperoleh melalui beberapa cara, yaitu 1) melalui pengambilan dari hutan alam; 2) pemanfaatan sisa kayu dari industri kayu dan 3) dengan membuat hutan tanaman kayu bakar (Miranda,1997).