

PENGARUH MEDIA DAN PUPUK NPK TERHADAP PERTUMBUHAN SEMAI KEPUH (*Sterculia foetida* L.) SELAMA TIGA SETENGAH BULAN

Mohamad Imam Sobirin¹, Suryo Hardiwinoto², Widiyatno³

INTISARI

Kepuh merupakan tanaman yang berprospek untuk dikembangkan menjadi biodiesel karena memiliki kandungan minyak tinggi pada bijinya. Akan tetapi, keberadaan kepuh yang semakin langka dan regenerasi kepuh sulit diperlukan perlakuan khusus. Pertumbuhan semai kepuh bergantung pada media semai dan penyerapan unsur hara yang tersedia. Kesuburan tanah dan kecukupan unsur hara sangat penting untuk pertumbuhan yang optimal, apabila kekurangan keduanya dapat menghambat proses fotosintesis dan pertumbuhan semai kepuh secara umum. Tujuan penelitian ini yaitu untuk mengetahui pengaruh media semai, dosis pupuk NPK, dan interaksi kedua perlakuan terhadap pertumbuhan semai kepuh.

Penelitian ini dilakukan pada semai kepuh umur tiga setengah bulan, menggunakan Rancangan Acak Lengkap (RAL) Faktorial dengan 2 faktor yaitu 2 taraf media semai (media tanah dan media tanah + pupuk kandang 1:1) dan 4 taraf dosis pupuk NPK (0 gram/semai; 2 gram/semai; 4 gram/semai; dan 6 gram/semai). Setiap perlakuan terdapat 10 kali ulangan. Pertumbuhan semai kepuh selama tiga setengah bulan dilakukan pengamatan untuk parameter presentase hidup, pertumbuhan tinggi, dan diameter, kandungan klorofil daun, biomassa, kekokohan semai, dan indeks mutu semai. Hasil pengamatan di analisis dengan analisis varians (ANOVA), dan uji lanjut menggunakan *Duncan Multiple Range Test* (DMRT) jika menunjukkan pengaruh secara sangat nyata maupun nyata.

Hasil analisis menunjukkan bahwa media tanah + pupuk kandang (1:1) memberikan pengaruh nyata pada parameter tinggi, diameter, biomassa, dan indeks mutu semai. Pada parameter kandungan klorofil dan kekokohan semai menunjukkan media tanah memberikan rerata lebih tinggi. Kemudian perlakuan dosis pupuk NPK 4 gram/semai memberikan pengaruh nyata pada tinggi, diameter, biomassa akar, dan indeks mutu semai. Sedangkan perlakuan dosis pupuk NPK 6 gram/semai memberikan rerata tertinggi pada biomassa tajuk, kandungan klorofil, dan kekokohan semai. Selain itu, interaksi media tanah + pupuk kandang (1:1) dengan dosis pupuk NPK 4 gram/semai menghasilkan pertumbuhan tinggi dan diameter tertinggi serta pada biomassa memberikan pengaruh nyata. Interaksi media tanah dengan dosis pupuk NPK 6 gram/semai memberikan rerata tertinggi kandungan klorofil pada daun semai kepuh.

Kata Kunci: *Kepuh, Pertumbuhan, Media, Dosis Pupuk NPK*

¹Mahasiswa Fakultas Kehutanan Universitas Gadjah Mada

²Dosen Fakultas Kehutanan Universitas Gadjah Mada

THE EFFECT OF MEDIA AND NPK FERTILIZER ON THE GROWTH OF KEPUH SEEDLINGS (*Sterculia foetida* L.) FOR THREE AND A HALF MONTHS

Mohamad Imam Sobirin¹, Suryo Hardiwinoto², Widiyatno³

ABSTRACT

The Kepuh tree (*Sterculia foetida* L.) emerges as a prospective plant for biodiesel production owing to its high oil content in its seeds. However, the increasing rarity of Kepuh and the challenges associated with its regeneration necessitate special treatment. The growth of Kepuh seedlings is contingent upon the germination medium and the absorption of available nutrients. Soil fertility and the adequacy of nutrients are crucial for optimal growth; a deficiency in either can impede the photosynthesis process and the overall seedling growth of Kepuh. The objective of this research is to investigate the influence of germination media, NPK fertilizer dosage, and the interactive effects of both treatments on the growth of Kepuh seedlings.

The study was conducted on three and a half month old Kepuh seedlings, employing a Factorial Completely Randomized Design (CRD) with 2 factors: 2 levels of germination media (soil medium and soil medium with manure fertilizer) and 4 levels of NPK fertilizer dosage (0 grams/seedling, 2 grams/seedling, 4 grams/seedling, and 6 grams/seedling). Each treatment was replicated 10 times. Observations on Kepuh seedling growth over three and a half months were made for parameters such as survival percentage, height, diameter, leaf chlorophyll content, biomass, seedling robustness, and seedling quality index. The observed results were subjected to analysis of variance (ANOVA), and post hoc analysis was performed using Duncan Multiple Range Test (DMRT) if significant effects were detected.

The analysis results indicate that the soil medium with manure fertilizer (1:1) significantly influences the height, diameter, biomass, and seedling quality index. Regarding chlorophyll content and seedling robustness, the soil medium alone exhibited a higher mean. Furthermore, the NPK fertilizer dosage of 4 grams/seedling significantly affected height, diameter, root biomass, and seedling quality index. Meanwhile, the NPK fertilizer dosage of 6 grams/seedling yielded the highest mean for canopy biomass, chlorophyll content, and seedling robustness. Additionally, the interaction between the soil medium with manure fertilizer (1:1) and NPK fertilizer dosage of 4 grams/seedling resulted in the highest height and diameter growth, with a significant impact on biomass. The interaction between the soil medium and NPK fertilizer dosage of 6 grams/seedling yielded the highest mean for chlorophyll content in Kepuh seedling leaves.

Keywords: *Kepuh, Growth, Media, NPK Fertilizer Dosage*

¹Student at the Faculty of Forestry, Gadjah Mada University

²Lecturer at the Faculty of Forestry, Gadjah Mada University