

**APPLICATION OF DIFFERENT LEVELS OF COMPOST AND
BIOCHAR ON GROWTH PERFORMANCE OF *Glycine max* (L.)**



BY

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ABSTRACT

Biochar is a black carbon product derived by the pyrolysis of organic materials. Compost is the product of degraded organic matter by composting process. Both are cost effective and environment friendly soil amendments which is used in the crop production to improve plant available nutrient content. In this context, experiment was conducted to identify the effect of different levels of compost and biochar on the growth performance of *Glycine max.* (L).

The pot experiment was conducted in a Crop Farm, Eastern University, Sri Lanka. The experimental design was Complete Randomized Design (CRD) with six treatments and six replicates. In this experiment different levels of compost with biochar and inorganic fertilizer was used. The treatments were T1- 100% compost, T2-75% compost with 25% biochar, T3- 50% compost with 50% biochar, T4- 25% compost with 75% biochar, T5- 100% biochar and T6- inorganic fertilizer (control).

The growth parameters were statistically analyzed and the outputs showed significantly ($p < 0.05$) increase among the treatments on plant height (3.25%), number of leaves (13.04%), leaf area (17.25%), chlorophyll content (15.2%), number of flowers (12.67%), nodule-numbers (27.74%), effective nodules (39.16%) and the total biomass (16.52%). Plant height, number of leaves and the chlorophyll content was not significantly affected at the initial stage. However, all the observed parameters were statistically significant at 6th week after planting.

The experiment revealed that T4 treatment (25% compost with 75% biochar) showed significant increase in number of leaves, leaf area, chlorophyll content and number of flowers when compared to other treatments. However, total biomass in T4 and T6 treatments were not significantly different. Therefore, 25% compost with 75% biochar

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