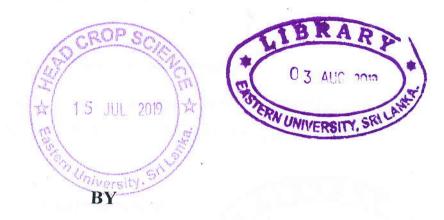
## APPLICATION OF VERMIWASH ON GROWTH AND YIELD

# PERFORMANCES OF GREEN GRAM (Vigna radiata)

### IN SANDY REGOSOL



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#### ABSTRACT

Foliar fertilization is one of the important methods to apply nutrients to crops. It has been used as a mean of supplying supplemental doses of minor and major nutrients, plant hormones, stimulants, and other beneficial substances. A field experiment was conducted at the crop farm, Eastern University, Sri Lanka to study the effect of vermiwash application on growth and yield of green gram (*Vigna radiata*), variety MI 5 in Sandy Regosol. The experiment was laid out in a Randomized Complete Block Design (RCBD) with five treatments and four replicates. The treatments were recommended inorganic fertilizer application (T1), ½ doses of recommended basal and top dressing with 25% vermiwash (T2), 50% vermiwash (T3), 75% vermiwash (T4) and 100% vermiwash (T5). Vermiwash was applied at once in two weeks and the performance was recorded at 2<sup>nd</sup>, 4<sup>th</sup>, 6<sup>th</sup>, 8<sup>th</sup> weeks after planting (WAP).

The results revealed that number of branches and leaves per plant, total number of nodules and effective nodules, number of flowers, days for 50% and 100% flowering, number of pods per plant and number of seeds per pod were significantly (P<0.05) varied at 8<sup>th</sup> week after planting and it was high in T4. Minimum duration of 30 days and 35 days were taken by T4 for 50 % and 100 % flowering respectively. Foliar application of vermiwash increased the root length and fresh and dry weights of root were high in T5 followed by T4 at 2<sup>nd</sup>, 4<sup>th</sup>, 6<sup>th</sup> and 8<sup>th</sup> WAP. However, there was no significant (P>0.05) variation between T5 and T4 in dry weight of shoots. Further, application of vermiwash significantly influenced (P<0.01) plant height, fresh weight of plant, shoots and roots, dry weight of roots, chlorophyll content, leaf area, leaf area index, TSS, yield and yield components. Yield of 7.25 tons/ha was achieved in T4 and it was 2.5 times greater compared to control. The minimum TSS observed in T4 (4.3 Brix) can be recommend for diabetic patients.

This study suggests that application of ½ doses of recommended basal and top dressing with 75% vermiwash (T4) would be more suitable for cultivation of green gram in sandy regosol.

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