

**EFFECT OF THE ORGANIC LIQUID MIXTURE
ON GROWTH OF BLACK GRAM**


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Abstract

Bio fertilizers are low cost, renewable sources of plant nutrient. Liquid organic fertilizer will increase the availability of nutrients in the soil. In addition to indispensable nutrient availability in the soil structure and soil air reality affects the growth and development of a good plant roots. The development of a plant rooting systems largely determines the plants vegetative growth that will ultimately determine crop production. Jeevamrutha is the fermented product which is used as plant growth enhancing substance. It is a rich source of beneficial micro flora which supports, stimulates the plant growth and helps in getting better vegetative growth and also good quality yield. This experiment was conducted with three different applications of jeevamrutha on Black gram (*MI 1*), which was compared with synthetic fertilizer. This experiment was conducted from July to August 2021. The soil was mixed with compost at a ratio of 2:1 and used as potting media. Five treatments with six replicates were arranged in a completely randomized design with the spacing of 30cm×10cm. Organic liquid mixture (jeevamrutha) was prepared by mixing 100 L of water, 5 kg of fresh cow dung, 5 L cow urine, 1 Kg of jaggery and 1kg pulse flour (Gram flour) in a plastic bucket and allowed to ferment 3 days. Treatments were T₁- once in one week of jeevamrutha application, T₂- once in two weeks of jeevamrutha application, T₃- once in three weeks of jeevamrutha application, T₄- control, and T₅- synthetic fertilizer application.

The parameters measured during the experiment were number of the lateral roots, plant height, leaf area, fresh weight of plant, dry weight of plant, tap root length and leaf number. The data were subjected to statistical analysis. The results showed that there were significant differences in number of the lateral roots, leaf area, fresh weight of plant, dry weight of plant and tap root length at 4th weeks after planting.

The results from this showed that the growth of black gram was improved by the application of jeevamrutha once in three weeks than the synthetic fertilizer application. Therefore the study recommends that the application jeevamrutha can be adapted by the farmers for black gram cultivation instead of synthetic fertilizer because the jeevamrutha is less harmful to the environment and less costly.

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