

**DIFFERENT COMBINATIONS OF JEEWAMIRTHA AND COMPOST ON
GROWTH AND YIELD OF COWPEA (*Vigna unguiculata* L.)**

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*Department of Crop Science, Faculty of Agriculture, Eastern University, Sri Lanka***Abstract**

Cowpea (*Vigna unguiculata* L.) is a widely cultivated legume crop in Sri Lanka as it is a popular source of protein in the local diet. Owing to the various environmental impacts and high cost of cultivation caused by synthetic fertilizer, there is a need to find out alternative nutrient sources to be used in cowpea cultivation. Being a crop that has the ability to fix atmospheric nitrogen, there is a potential for the application of organic liquid fertilizer such as *Jeewamirtha* to improve the growth and yield of cowpea as it is a rich source of organic nutrients and beneficial microorganisms. In the present study, a polybag experiment was conducted at a home garden in Moratuwa, Sri Lanka, to investigate the effects of different combinations of *Jeewamirtha* and compost on growth and yield parameters of *Vigna unguiculata* L. (variety *Waruni*) during the period of July to September 2021. The experiment was arranged in a Complete Randomized Design (CRD) with 6 treatments and 10 replicates as; Control - without any fertilizer (T1), 100% *Jeewamirtha* (T2), 75% *Jeewamirtha* + 25% compost (T3), 50% *Jeewamirtha* + 50% compost (T4), 25% *Jeewamirtha* + 75% compost (T5) and, 100% compost (T6). *Jeewamirtha* was prepared and diluted 10 times with water before application and was used within 5 days of preparation. Soil application of *Jeewamirtha* and compost to the crops was started 2 weeks after planting (WAP) cowpea and was done once in every two weeks' time. The results showed that at 10 WAP, T3 produced a higher plant height (22.35%), shoot dry weight (43.03%), root dry weight (40.90%) and, tap root length (28.80%) compared to the control. At 42 days, T3 had the shortest ($p < 0.05$) duration for 50% flowering, producing 75% more flowers per plant compared to the control. Remarkable ($p < 0.05$) 48.0 number of root nodules were present in T3 with an increased percentage of 31.14% compared to the control. T3 continued to remain significantly high ($p < 0.05$), producing 37% more pods per plant compared to the control, representing the highest yield (1.11 tons/ha) among the treatments. In conclusion, the results of this experiment revealed that the application of 75% *Jeewamirtha* with 25% compost to soil achieves a higher growth and yield in cowpea and therefore can be recommended for cowpea cultivation in an environmentally friendly manner excluding the use of synthetic fertilizers. It is also possible to produce *Jeewamirtha* on a large scale due to the cost-effectiveness and on-farm availability of its ingredients.

Keywords: Beneficial microbes, Natural fertilizer, Yield

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