EFFECT OF VERMIWASH ON GROWTH AND YIELD OF DIFFERENT COWPEA VARIETIES (*Vigna unguiculata*)

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ABSTRACT

Vermiwash is a liquid byproduct of earthworm activity, is an organic bio-fertilizer rich in nutrients, enzymes, and beneficial microorganisms. The objective of this study was to investigate the effect of vermiwash on growth and yield of selected cowpea varieties (*Vigna unguiculata*). The pot experiment was conducted by using cowpea varieties waruni, dawala, micp 1, Bombay, ANKCP 1,ANKCP 2 and MI 35 recommended by the Department of Agriculture, (DOA) Sri Lanka. Six different concentrations of vermiwash T2 (25%),T3 (50%),T4 (75%),T5 (100%) were tested along with inorganic fertilizer recommendation by DOA and control. All the treatments were arranged according to a completely randomized design with six treatments and five replicates. Vegetative data and yield components were evaluated in response to different applications vermiwash by using Minitab 17 statistical software. The results revealed that Vermiwash application significantly improved growth and yield parameters of cowpea varieties compared to the control and chemical treatment ($p<0.05$). The highest plant height (149.17±9.61 cm by ANKCP 1), number of leaves (35.00± 1.73 by waruni, bombay and ANKCP 1), number of branches (11.66±0.57 ANKCP 1 and bombay), Leaf area index (87.59±5.51 cm by Bombay) were observed under 100% vermiwash application. The lowest days to flowering (48.66±0.57 by Waruni). There is no significant difference between 75% and 100% on the tested vegetative parameters. The lowest days to first mature pods (48.66±1.00 by Waruni),the longest plant length (16.10±2.01 cm by Bombay) ,recorded by under the 100%of vermiwash application. The highest number of pods per plant (6.000±1.0 by Waruni) was recorded under 75% vermiwash application and showed significant differences from control and chemical applications ($P<0.05$). There is a significant effect of vermiwash concentration and variety on plant height, number of leaves, number of branches, leaf area index, days to flowering, days to first mature pods, the plant length, and pods per plant. Findings of this study will be a valuable resource for organic agriculture in Sri Lanka

key words: Vermiwash, Growth parameters, Yield parameters, Treatment, Fertilizer

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