

GROWTH AND YIELD PERFORMANCE OF SPINACH (*Spinacia oleracea* L.) FERTILIZED WITH VERMICOMPOST AND RICE HUSK CHARCOAL



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ABSTRACT

A study was conducted to evaluate effectiveness of organic and inorganic fertilizer combination on growth and yield of spinach. Vermicompost – Rich husk charcoal mixture is the tested organic manure. The experiment was carried out during February to May 2024 at the Faculty of Technology, Eastern University, Sri Lanka. The study was designed with five treatments and four replicates. Treatments are T₁- Control, Recommended amount of inorganic fertilizer by Department of Agriculture (RDOA), T₂ -1/4 amount of RDOA + vermicompost- charcoal mixture, T₃ - 1/2 amount of RDOA + vermicompost- charcoal mixture, T₄ - 3/4 amount of RDOA + vermicompost- charcoal mixture, T₅ - vermicompost-charcoal mixture. All other agronomic practices were followed based on DOA recommendation. Plant height, number of leaves, leaf area was measured in weekly interval. Plant fresh weight and oven dry weight of cutting were measured at the time of harvesting (6 Weeks after planting). Analysis of variance was performed to determine significant difference among treatments ($p < 0.05$).

Highest average plant height, number of leaves per plant, leaf area, fresh and oven dry weight of plant cutting were observed in spinach plants fertilized with combination of 3/4 of RDOA and vermicompost – rice husk charcoal mixture. Lowest value was observed when vermicompost - rice husk charcoal mixture applied alone. Results suggested that vermicompost - rice husk charcoal mixture combine with inorganic fertilizer enhances growth and yield performance of spinach (*Spinacia oleracea* L.) in sandy regosol.

Usage of vermicompost -rice husk charcoal mixture combined with inorganic fertilizer in leafy vegetable cultivation would be a way to minimize the fertilizer requirements and

cost of production. 3/4 amount of recommended inorganic fertilizer combine with vermicompost - rice husk charcoal mixture would be suitable application rate for spinach cultivation in sandy regosol.

Key words: Vermicompost -Rice husk charcoal mixture, Spinach

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