

Effect of Trichoderma-Based Biofertilizers on the Flower and Fruit Pattern of Horned Melon (*Cucumis metuliferus* E. Mey. ex Naudin)

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Abstract

The lack of agronomic information is one of the various reasons given for the failure of indigenous vegetables to move from subsistence plants of restricted use to vegetables that are considerably researched, utilized, available, and commercially aggressive. A greenhouse study was conducted at Midlands State University's Department of Horticulture and Agronomy to consider the impact of Trichoderma biofertilizer at different stages on the overall performance of horned melon (*Cucumis metuliferus*). A complete randomized block design (CRBD) was used for this greenhouse experiment. Four Trichoderma-based biofertilizer treatments (0.1 g/pot, 0.2 g/pot, 0.3 g/pot, and 0.4 g/pot) and a control treatment (0.0 g/pot) in four replications were laid down. Inoculation by way of biofertilizer registered significant ($p < 0.05$) results as a greater number of male flowers were recorded. Higher rates of biofertilizers of 0.3 g/pot and 0.4 g/pot gave more flowers, 10.75 and 12.25, respectively, versus lower application rates of 0.1 g/pot and 0.2 g/pot with 6.25 and 6.50 flowers, respectively. The days to flowering increased from 0.0 g/pot (44.75 days) to 0.4 g/pot (49.00 days). Time taken to fruiting was affected significantly ($p < 0.05$) with the application of the biofertilizer. The number of fruits per plant followed the same trend of number of female flowers along the main stem. The number of small fruits increased numerically from 0.0 g/pot (0.5 fruits) to 0.4 g/pot (1.5 fruits) but did not differ ($p > 0.05$) statistically between all treatments. The results of this current study indicate that the Trichoderma-based biofertilizer significantly affects the flowering pattern and fruiting characteristics of horned melon at different application rates. Further investigations need to be conducted to reveal the potential derived from the Trichoderma-based biofertilizer in the production of horned melon.

