

Combine Effect of Vermicompost, Fish Tonic and *Trichoderma viride* with Inorganic Fertilizer Application on Groundnut (*Arachis hypogaea* L.) Growth and Yield

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This research was conducted at the Regional Agriculture Research and Development Centre in Kilinochchi to evaluate the combine effect of vermicompost, fish tonic and *Trichoderma viride* with inorganic fertilizer (NPK) application on groundnut (*Arachis hypogaea* L.) growth and yield. The field experiment was laid out in RCBD, with 3 replicates and 9 treatments: T1 (control), T2 (vermicompost + fish tonic + *T. viride*), T3 (vermicompost + fish tonic), T4 (vermicompost + *T. viride*), T5 (vermicompost), T6 (NPK + fish tonic + *T. viride*), T7 (NPK + fish tonic), T8 (NPK + *T. viride*), T9 (NPK). The application of fish tonic was carried out at weekly intervals. Growth parameters such as days to 50% flowering, plant height, number of branches and plant width, and yield parameters such as number of total pegs with pods, number of matured pods, one plant yield and plot yield were taken. The data was analyzed using SAS (9.4) package. Results of the growth parameters indicated that the T4 showed better performance with days to 50% flowering, plant height, number of branches and plant width and for yield attributes. The T8 showed the highest number of total pegs with pods (51) and matured pods (44). Furthermore, the T8 resulted in the highest yield per plant (52.33 g) and the highest plot yield (5.01 ton/ha). It could be concluded that the application of vermicompost with *T. viride*, and NPK with *T. viride* have a significant ($p < 0.05$) impact on groundnut growth and yield, respectively.

Keywords: Fish tonic, Groundnut, Growth and yield parameters, NPK fertilizers, *Trichoderma viride*, Vermicompost