THE COMPARISON BETWEEN THE CONVENTIONAL FERTILIZER PRACTICE AND ECO-FRIENDLY FERTILIZER PRACTICES ON PLANT GROWTH AND YIELD OF OKRA

(Abelmoschus esculenthus)

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ABSTRACT

Okra (*Abelmoschus esculenthus*) is a valuable vegetable crop, but selecting the best fertilizer practices remains a challenge. Although chemical fertilizers (CF) boost yields, they may harm the environment. Conventional Organic fertilizers and Bio-fertilizers offer sustainable alternatives, but their effectiveness is lower than the Chemical fertilizer. The main objective of this experiment was to compare the effect of conventional fertilizer practices and eco-friendly fertilizer practices on plant growth and yield of Okra. A plot experiment was carried out using three types of fertilizers and combinations namely, Chemical fertilizer, Modern Organic pellet fertilizer and Biofilm bio-fertilizers.

The experiment was laid out in a randomized complete block design with four replicates having the following treatments: T_1 – Chemical fertilizer alone (HORDI Recommendation), T_2 – Organic pellets alone (LBF Recommendation), T_3 – Chemical fertilizer 50% + Biofilm Biofertilizer, T_4 – Organic pellet fertilizer 50% + Biofilm Biofertilizer, T_5 – Chemical fertilizer 50% + Organic pellet fertilizer 50%, T_6 – Chemical Fertilizer 33% + Organic pellet fertilizer 33% + Biofilm Biofertilizer, T_7 – Control (no fertilizer).

The results showed that different fertilizer practices and combinations had significant effects on growth and yield parameters of Okra over the control. Based on the results, T_1 (Chemical fertilizer), T_5 (Chemical fertilizer 50% + Organic pellet fertilizer 50%) and T_6 (Chemical Fertilizer 33% + Organic pellet fertilizer 33% + Biofilm Bio-fertilizer) treatments showed comparable results for the growth and yield of Okra. Further studies under field conditions should be conducted to confirm these results. With the current findings, eco-friendly fertilizer practices can be recommended for the reduction of chemical fertilizers dependency while maintaining growth and yield of Okra.

Keywords: Bio-fertilizers, Chemical Fertilizer, Okra, Organic Fertilizer, Yield

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