

EFFECT OF DIFFERENT TYPE OF FERTILIZERS ON GROWTH AND YIELD OF OKRA (*Abelmoschus esculentus* L.), KILINCHCHI, SRI LANKAG.K.T. Rathnasoma¹, S.J. Arasakesary¹ and K. Pakeerathan^{1*}¹Department of Agricultural Biology, Faculty of Agriculture, University of Jaffna, 44000, Ariviyal Nagar, Kilinochchi, Sri Lanka**Abstract**

To overcome the malnutrition, economic and food crisis existing in Sri Lanka, our agricultural productivity needs to be increased. Okra, *Abelmoschus esculentus* (L.), is reported to have been a hardy, very important source of nutrition and potential economic returns for many tropical and subtropical countries. The development of agricultural technology to optimize production and growing plants, fertilizers also become more pertinent. This research deals with different types of fertilization and their effect on growth, development, and yield of Okra. The three fertilizer treatments, namely Department of Agriculture's recommendation (T1) as control, SAS fertilizer (T2), and vermicompost +50% of T1 (T3), were compared. The treatments were laid out in RCBD with three replicates for the evaluation of the growth and parameters, pod production, and root biomass. Two-way ANOVA was performed using the SAS software. Duncan's Multiple Ranges Test (DMRT) was used to determine the least significant differences among the treatments at $P < 0.05$. Results from the study showed variations influenced by the treatments. T1 significantly increased the height of the plant (161.73 cm), stem girth (9.77 ± 0.76 cm), and pod yield of 23.45 pods/plant over T2 and T3. Additionally, T1 revealed that the maximum pod girth of 7.58 ± 0.52 cm and number of pods 23.45 ± 4.17 , showing that inorganic fertilizer resulted in better overall growth and yield performances. However, T3, representing organic methodology, evinced continued benefits, as well, in the form of a more balanced nutrient supply and improved soil health. In this, it is possible to interpret that while inorganic fertilizers improve productivity immediately, the integrated use of organic alternatives like vermicompost can actually encourage long-term soil fertility and sustainability in okra cultivation.

Keywords: *Abelmoschus esculentus*, Inorganic fertilizers, SAS fertilizer, Vermicompost, Yield

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