

**EFFECTS OF POTATO PEEL-BASED FERTILIZER  
FORMULATIONS ON GROWTH AND YIELD RESPONSES IN  
OKRA**



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**2025**

## ABSTRACT

Okra (*Abelmoschus esculentus*) has gained popularity in various neotropical regions of the world. It holds significant agronomic importance due to its adaptability to various environmental conditions, resilience to pests and diseases, and nutritional value. Potato peels are utilized to produce nitrogen, phosphorus, and potassium-rich fertilizers for the cultivation of crops. Hence, this experiment was carried out to study the effect of a potato peel-based fertilizer formulation on growth and yield responses in okra. It was designed in a completely randomized design with six treatments with five replications each, including a control (T0) with 100% recommended amount of inorganic fertilizer, treatments with 50% recommended amount of inorganic fertilizer (T1), direct application of potato peel fertilizer with 50% recommended amount of inorganic fertilizer (T2), potato peel powder with 50% recommended amount of inorganic fertilizer (T3), potato peel tea with 50% recommended amount of inorganic fertilizer (T4), and fermented potato peel liquid fertilizer with 50% recommended amount of inorganic fertilizer (T5). The soil application of a potato peel fertilizer had significant ( $P < 0.05$ ) effect on growth and yield responses in okra when compared to the control treatments. The results indicated that okra plants treated with fermented potato peel liquid fertilizer with 50% recommended amount of inorganic fertilizer (T5) exhibited superior growth parameters and yield compared to other treatments. Specifically, plants in T5 showed significant increases in plant height, number of leaves, number of flowers, number of pods  $4.00 \pm 0.31$ , pod weight  $56.40 \pm 2.94$ , root length  $8.40 \pm 0.51$ , and pod length  $16.80 \pm 0.80$ . Conversely, 100% recommended amount of inorganic fertilizer (T0) did not significantly enhance growth and yield, suggesting a possible negative impact. Based on the results, it is recommended that a fermented potato peel liquid fertilizer with 50% recommended amount of inorganic fertilizer be applied to okra crops for the best results.

**Keywords:** Inorganic fertilizer, Okra, Potato peel fertilizers, Soil application, Yield

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