

# **Effect of Organic and Inorganic Nitrogen Sources on Growth of Garden Peas (*Pisum sativum L.*)**

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## **Abstract**

Garden pea is an important vegetable crop due to its high protein content and many other uses. The plant requires nitrogen which supports the plants rapid growth and encourages the healthy development of foliage, leaves, leaf size and higher yield. Nitrogen is also involved in the structures of all amino acids proteins as well as many enzymes. This makes nitrogen an important plant element required by garden pea thus making this experiment very important. The experiment was carried out at University of Embu school farm between January and April, 2019 to determine the effect of organic and inorganic nitrogen fertilizer sources in growth and development of garden pea (*Pisum sativum L.*) The specific objectives of the study are: To determine the effect of inorganic nitrogen sources on growth and development of garden pea, the second one is to determine the effect of farmyard manure on growth and development of garden pea and lastly to evaluate the effects of combined nitrogen fertilizer and farmyard manure on growth and development garden pea. The treatments to be tested are farmyard manure (T1), CAN (Top dressed) (T2), CAN combined with farmyard manure (T3) and treatment 4 which is control (no fertilizer). The experimental design that was used was Randomized Complete Block Design (RCBD) and treatments are to be replicated three times. Results showed that CAN (T2) treatment outperformed other treatment at all levels of measurement of plant heights and number of branches. FYM +CAN came second followed by FYM and control plots having the least height and least number of branches. The effect of the four treatments was also replicated in the time taken to 50% flowering and 50% podding with CAN treated plots taking short time to flower and to form pods followed by FYM+CAN, FYM and finally control. CAN (top dressed) fertilizer easily releases its nutrients in a conducive environment hence a fast and healthy growth was experienced. In the farmyard treated plots there was slow release of manure nutrients in the soil for utilization by the plant hence a slow response in terms of the growth was experienced. In the control experiment plots there was no fast growth due to lack of additional nutrients to improve plant growth. CAN gave the highest number of pods, this was due to fast release of nutrients by CAN followed by FYM+CAN then FYM and finally control giving least number of pods.