

Research note :

EFFECT OF ORGANIC MANURES AND INORGANIC FERTILIZERS ON GROWTH AND YIELD OF GREEN PEA (*Pisum sativum* L.)

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Results obtained from field experiment indicated that the application of FYM @ 5t/ha recorded maximum plant height and leaf area, higher number of leaves, number of green pods and pod yield over vermicompost. Application of 100 per cent recommended dose of fertilizer enhanced growth characters and produced higher green pod yield.

Integrated use of organic manures and inorganic fertilizers in sustainable combination plays a crucial role in boosting up the agricultural production and productivity. The incorporation of bulky organic manures such as vermicompost, FYM plays important role in plant nutrition especially nitrogen. Therefore, the present investigation was undertaken to study the effect of organic manure and inorganic fertilizers on green pea.

The present experiment was carried out at Instructional Research Farm, Post Graduate Institute, M. P. K. V., Rahuri during *rabi* 2004-05. The soil was sandy clay loam in texture with alkaline in reaction (pH 8.2) and E.C. 0.28 dSm⁻¹. The soil available nitrogen was low (202.73 kg ha⁻¹), whereas, available P and K were high (18.16 and 360.80 kg ha⁻¹). The experiment was laid out in factorial randomized block design with three replications. The Arkel variety of pea crop was selected for the study. The treatment consists of two organic sources (FYM @ 5 t/ha and Vermicompost @2.5t/ha) and three levels of inorganic fertilizers (50, 75, 100 per cent recommended dose) along with control. Cultivated pea crop was fertilized as per the treatment, involving half dose of nitrogen and full dose of phosphorous

and potassium as basal application and half dose of nitrogen as top dressing at 30 days after sowing as per the treatments. A common seed treatment of biofertilizer was given to the pea seed at the time of sowing. FYM and vermicompost were applied before sowing of pea as per treatment. Growth parameters, like plant height, leaf area per plant, number, length and weight of green pods, green pod yield were recorded.

Growth Characters:

Application of organic manures significantly enhanced the plant height, number of leaves and leaf area. FYM @ 5 t/ha improved growth characters over vermicompost. The maximum plant height (43.10 cm), number of functional leaves (65.59) and leaf area (4.52 dm²) were observed at T₂, which was at par with the treatment vermicompost @ 2.5 t/ha. The beneficial effect of organic manures in producing taller plants and more number of leaves might be due to the advancement of time, proper availability of nutrients with conducive soil physico-chemical conditions, increase in soil fertility and also improvement in organic carbon status of the soil (Bhattarai and Singh, 2002).

The growth of pea crop measured maximum in terms of plant height (48.01 cm), number of leaves (71.98) and leaf area (4.45 dm²) were recorded under 100 per cent recommended dose of fertilizer application. The significant increase in plant height might be due to higher availability of nutrients and their uptake (Prasad *et al.*, 1987). Increase in number of functional leaves might be because of response to the applied nutrients through the increased application of N, P and K

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