

## **GROWTH AND YIELD OF GREEN CHILLI (*Capsium annuum* L.) cv. PUSA JWALA AS INFLUENCED BY NITROGEN AND PHOSPHORUS**

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### **ABSTRACT**

To know the effect of nitrogen and phosphorus on growth and yield of green chilli (*Capsium annuum* L.) cv. Pusa Jwala a field experiment was conducted at the College of Agriculture, Bijapur during *kharif* season. The experiment was laid out in a factorial randomized block design with four levels of 0, 50, 100 and 150 kg nitrogen and four levels of 0, 25, 50 and 75 kg phosphorus per ha in combination. Among nitrogen levels studied, 150 kg per ha was significantly better with respect to growth characters like plant height, plant spread, number of primary and secondary branches per plant as well as yield attributing characters like number of fruits per plant and average fruit weight. Similar was the response of most of characters to higher phosphorus (75 kg/ha) resulting in higher yield. Uptake of nitrogen, phosphorus and potassium was significantly higher with higher level of nitrogen and phosphorus.

**Key words :** Green chilli, Yield, Nitrogen, Phosphorus, Uptake

Chillies are the green or dried fruits of *Capsicum annuum* L. belonging to the family solanaceae. Chilli is nature's wonder with two important qualities. They are biting pungency attributed capsaicin and captivating red colour due to the pigment capsanthin. Chillies are used in both green and dry form in all culinary preparations of Indians equally by rich and poor. Chilli is used for extraction of vitamin C, oleoresin and colouring matter. Besides, it is used as herbal medicine for maladies ranging from itch and pains to constipation.

If productivity status of chilli crop in India is studied over a period of two and half decades, there is no significant increase in productivity although the area and production has increased. It is possible to achieve a jump in productivity. Under normal agro-climatic condition, nutrition of plants is the largest single factor influencing yield. Therefore, a balanced and judicious application of nutrients especially nitrogen, phosphorus and potassium is very important. Although there are some general recommendations of inorganic fertilizers for chilli, no precise recommendation for green chilli production are available. With this background in view, an investigation was undertaken to generate information on influence of nitrogen and phosphorus on green chilli production.

### **MATERIALS AND METHODS**

A field experiment was conducted during *kharif*

season of 1997 to find out the effect of nitrogen and phosphorus on growth and yield of chilli cv. 'Pusa Jwala'. The soil was medium black having 8.4 pH, 0.23 dS/m EC and 0.42 per cent organic carbon. The available nitrogen phosphorus and potassium were 150, 22 and 319 kg per hectare, respectively.

The experiment comprised of 16 treatments with combination of four levels of nitrogen (0-N<sub>1</sub>, 50-N<sub>2</sub>, 110-N<sub>3</sub> and 150-N<sub>4</sub>) kg per hectare and phosphorus (0-P<sub>1</sub>, 25-P<sub>2</sub>, 50-P<sub>3</sub> and 75-P<sub>4</sub>) kg per hectare each. The experiment was laid out in a factorial randomized block design with three replications.

The fertilizers were applied in the form of urea, single super phosphate and muriate of potash as the source of nitrogen, phosphorus and potassium respectively. The full dose of phosphatic and recommended dose of potassium fertilizers and half dose of nitrogenous fertilizers were applied four days after transplanting and other half dose of nitrogen was given 30 days after transplanting as top dressing. Irrigation was given as per the requirement of crop looking to soil condition. Growth characters like plant height (cm), plant spread (cm), number of primary and secondary branches, yield attributing characters like number of fruits per plant, average fruit weight (g) and fruit yield per ha were recorded. The uptake of nitrogen, phosphorus and potassium were also recorded. Nitrogen was estimated by Kjeldahl digestion and distillation method, phosphorus by Vanadomolybdate method and potassium by flame photometer.