

## **PLANT GROWTH AND POD YIELD OF INBRED AND HYBRID CHILLI (*Capsicum annum* L.) VARIETIES AS INFLUENCED BY SPACING, NUMBER OF PLANTS PER HILL AND FERTILIZER**

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Growth pattern and nutrient requirement of chilli (*Capsicum annum* L.) hybrids are expected to be different from that of inbreds. Cultivation of hybrids using agronomic recommendations for inbreds may mask the hybrid potential. Objectives of the present study were to investigate the fertilizer and plant density requirements for hybrids and to identify optimum fertilizer and plant density combinations for maximum pod yield. Experiment was conducted during 2010/2011 *Maha* season. Influences of four factors namely; variety, spacing, number of plants per hill and fertilizer, in two levels were tested using a factorial experiment in randomized complete block design. Neither four way nor three way and two way interactions showed significant ( $p < 0.05$ ) impact on the pod yield and pod number, in addition to main effect of fertilizer. Main effects of variety, spacing and number of plants per hill showed significant ( $p < 0.05$ ) impact on pod yield and pod number. Highest pod yield and pod number was observed in inbred (2.20 tons/ha, 759 pods/ plot) than the hybrid (1.25 tons/ha, 249 pods/ plot). Plant spacing of 45x30 cm and 2 plants per hill treatments showed higher pod yield and pod number than the 60x45 cm spacing and 1 plant per hill treatments irrespective of the variety. The average pod weight of hybrid (2.90 g) was significantly higher ( $p < 0.05$ ) in contrast to inbred (1.47 g), while influences of spacing and number of plants per hill were not significant. Sub-optimal climatic conditions (i.e. rainfall, temperature and sunshine hours) during the growing season showed negative impact on growth and development of crop, thus the yields were far below than expected. This study showed that performances of the inbreds are superior in sub-optimal growing conditions, hence it was highlighted the necessity of an upgraded agronomic practices for hybrids to achieve their true yield potential.

**Key words:** *Capsicum annum* L., Hybrid, Inbred, Sub-optimal