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Research Paper

Effect of spacing and different levels of fertilizer on growth and yield of bell pepper under shade net condition

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ABSTRACT

Bell pepper is one of the important salad vegetable crops with fruits rich in vitamin C. To get the higher productivity, optimum spacing and suitable level of fertilizer are necessary. Therefore, an experiment was conducted to find out the effect of spacings and different levels of fertilizers on growth and yield of bell pepper under shade net condition. The experiment was conducted at Horticulture garden, RARS, Raichur during *Kharif*, 2008.The Spacing S_3 (30 x 30 cm) recorded significant yield (66.90 t/ha^{-1}) with fertilizer dose F_6 (RDF + FYM). Minimum yield was noticed in spacing S_1 at F_1 (46.13 t/ha^{-1}). Spacing S_1 with F_6 fertilizer dose performed better with respect to growth components *viz.*, number of branches per plant, stem thickness, plant spread, at all stages of crop growth. However, plant height was maximum in closer spacing 30 x 30 cm at all levels of fertilizer dose.

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Key words : Bell pepper, Spacing, Fertilizer, Shade net

Capsicum (*Capsicum annum* L. Var. Grossum Sendt.) believed to be the native of tropical South America. Bell pepper is one of the highly remunerative vegetables cultivated in most parts of the world especially in temperate regions of Central and South America and European countries. Similarly it is also grown in tropical and subtropical regions of Asian continent. In the world, area and production of bell pepper is merged with that of hot pepper (chilli pepper).Hence, the exact statistics related to Bell pepper or chilli as whole is given. Holland is the major exporter of bell peppers and it meets the requirements of Indian expatriates in South East Asia, Gulf countries and to some extent in UK. Annual world production of capsicum in the year 2007 amounted to 27.46 million metric tonnes from an area of 1.72 million hectare (Anonymous, 2007). India's contribution was estimated to be 50,500 thousand metric tones from an area of 5,500 thousand hectares (FAO, 2004). Capsicum has a great potential for export. The present trend of expansion in vegetable in India for export and processing will result in a growth in capsicum production. But an improvement of cultural practices to boost production for domestic consumption, processing and export is needed. Hence, the present study was proposed with the objective of finding the optimum spacing and fertilizer level for shade net condition.

MATERIALS AND METHODS

The effect of spacings and different levels of fertilizer dose experiment was conducted under shade net in bell pepper cv. Indra. Experiment was conducted during *Kharif*, 2008 at Horticulture garden, RARS, Raichur situated in North Eastern Dry Zone (Zone-2) of Karnataka at 16^o 12' N latitude and 77^o 20' E longitude with an altitude of 389 meters above the mean sea level. The experiment was laid out in split plot design with three spacings (S_1- 45 x 45 cm), (S_2- 45 x 30 cm) and (S_3- 30 x 30 cm) in main plot treatments and different levels of fertilizers as sub plot treatments with three replications. Different level of fertilizer *viz.*, F_1: FYM alone, F_2: Vermicompost alone (15 t/ha), F_3: 50% FYM + 50% vermicompost, F_4: 50% FYM + 50% RDF, F_5: 50% Vermicompost + 50% RDF and F_6: RDF+FYM were used.

RESULTS AND DISCUSSION

The results obtained from the present investigation are summarized below :

Spacings:

The maximum cumulative yield per hectare was noticed in spacing S_3 (63.96 t/ha).This was due to maximum plant population maintained per unit area