

Cultivation of sweet pepper cultivars (*Capsicum annuum* var. *grossum* L.) under shade net in tropical plains of Tamil Nadu

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ABSTRACT

Shade net can be commercially exploited for successful year round cultivation of high value thermo sensitive vegetable sweet pepper. To explore the possibility of using shade net houses for year round production of sweet pepper by modifying the inside environment ,an experiment was taken up at Horticulture unit, Department of Soil and Crops, Agricultural College and Research Institute, Tamil Nadu Agricultural University, Killikulam using two sweet pepper cultivars viz., Indra and Kohinoor during two seasons viz., September, 2004-March,2005 (Season I) and June-December, 2005 (Season II) under three levels of shade (open field condition, 35 per cent and 50 per cent).The experiments were laid out in factorial randomized block design. Observations were recorded on yield characters, physiological characters and biochemical constituents. From the experiment it was concluded that 35 per cent shade is most suitable for cultivating sweet pepper under tropical conditions and sweet pepper cultivar Indra is a suitable cultivar for cultivation under shade net for year round cultivation .

Key words : Sweet pepper, Shade net, Chlorophyll, Proline, Leaf temperature.

Sweet pepper occupies a place of pride among vegetables in Indian cuisine because of its delicacy and flavor occupied with rich content of ascorbic acid and other vitamins and minerals. There is always a large and sustained demand of sweet pepper round the year in big cities. Since sweet pepper is sensitive to growing environments, growing sweet pepper in open condition is not possible in tropical condition. Shade net can be commercially exploited for successful year round cultivation of high value thermo sensitive vegetable sweet pepper. To explore the possibility of using shade net houses for year round production of sweet pepper by modifying the inside environment ,an experiment was taken up at Horticulture unit, Department of Soil and Crops, Agricultural College and Research Institute, Tamil Nadu Agricultural University, Killikulam during two seasons viz., September,2004-March,2005 (Season I) and June-December,2005 (Season II)

MATERIALS AND METHODS

Studies were conducted to know the effect of shade levels viz., open field condition, 35 and 50 per cent during during two seasons viz.,September 2004 to March, 2005 and June – December 2005 on yield, physiology and biochemical characters of sweet pepper cultivars viz., Indra and Kohinoor .The experiments were laid out in factorial randomized block design and a plot size of 4.5 x 2.2 m was used for each treatment. Raised beds of 80 cm width were formed with a furrow of 40 cm between two beds.

Forty five Days old seedlings were transplanted in paired rows on both sides of the the drip laterals adopting a spacing of 60 cm between rows and 45 cm between plants. The recommended dose of N, P and K at 150 : 150 : 150 kg/hectare was applied through fertigation. Observations were recorded on yield characters viz., fruits/plant, fruit length, fruit girth, mean fruit weight, seeds/fruit, yield/ha, physiological characters viz. cell membrane integrity, relative water content, stomatal diffusive resistance, transpiration rate, leaf temperature, chlorophyll content and light transmission ratio)and biochemical constituents viz., soluble protein, peroxidase activity, nitrate reductase activity and proline content).Five plants selected at random in each treatment and each replication were used for recording plant growth and yield characters.

RESULTS AND DISCUSSION

Effect of shade on yield and yield parameters:

The yield characters recorded in sweet pepper cultivars under different shade levels in two seasons are tabulated in Table 1 and 2.The yield is decided by the parameters like number of fruits per plant, fruit length, fruit girth, fruit weight and seeds per fruit. Prevailing weather parameters significantly influenced the yield parameters and more number of fruits per plant were observed under 35 per cent shade (22.35,18.15) than open (5.70,3.20) and 50 per cent shade (16.05,12.98) in sweet pepper cultivar Indra. This is in line with the findings of El Aidy (1986b) who reported that tomato plants grown