

## **Influence of pruning and growth regulators on flowering, fruit set and yield of coloured capsicum (*Capsicum annuum* L.) cv. OROBELLE under naturally ventilated greenhouse**

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### **ABSTRACT**

An experiment was conducted during 2005-06 to study the influence of pruning and growth regulators on the yield and quality of coloured capsicum (*Capsicum annuum* L.) cv. OROBELLE under greenhouse, Division of Horticulture, UAS, GKVK, Bangalore. In this experiment two pruning levels (2 branches per plant and 4 branches per plant) and growth regulators (NAA10 ppm and 25ppm, GA<sub>3</sub> 10 ppm and 25ppm) at different combinations were used as treatments. Both during summer and winter, the number of days taken was least for 50 per cent flowering (34.18 and 32.63 days, respectively) and fruit set (7.12 and 5.54 days, respectively) with the treatment T<sub>5</sub> which was the combination of pruning to four branches per plant + NAA 10 ppm. This treatment had also significantly increased number of flowers per plant (34.34 and 39.41, respectively) and per cent fruit set (52.37 and 63.51%, respectively) fruit yield per plant (1.97 and 2.39 kg) and per hectare (118.20 and 143.40 t) in both summer and winter, respectively. Capsicum plants responded significantly to the pruning and application of growth regulators.

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**Key words :** Greenhouse, Capsicum, Pruning, Growth regulator, Flowering and Fruit set.

**C**apsicum (*Capsicum annuum* L.) also known as sweet pepper or bell pepper is one of the most popular vegetable crops grown in India as well as in several other parts of the world. It is believed to be the native of tropical South America (Shoemaker and Tesky, 1995). In India, capsicum occupies an area of 4,780 hectare with an estimated production of 42,230 tones. (Anon., 1997). The productivity of capsicum is very low (10 to 42 t/ha) in India. Capsicum under open field cultivation yields between 20-40 t/ha, where as in a greenhouse the yield ranges from 100 to 120 t/ha

Greenhouse production technology of vegetables emphasizes the need for having appropriate plant densities, plant structure and use of optimum levels of growth regulators in order to boost up the production per unit area by utilizing the available space and nutrients applied. Since not much information is available on greenhouse cultivation of sweet pepper with respect to varying levels of pruning and growth regulators, there is an imminent need to assess the optimum levels of pruning and growth regulators for its cultivation in greenhouse. Therefore, this experiment was carried out to study the influence of pruning and growth regulators on the growth of capsicum plants

### **MATERIALS AND METHODS**

The study was carried out at Precision Farming Development Center, Division of Horticulture, University

of Agricultural Sciences, GKVK, Bangalore. Yellow coloured capsicum hybrid Orobelle developed by Syngenta seed company was used for this study. In both summer and winter seasons raised nursery beds of one meter width, three meter length and 0.4 meter height were prepared after mixing with the recommended dosage of farm yard manure (2 kg/sq.m). Seedlings of hybrid capsicum (Bombi) were raised by sowing centimeter deep at spacing of 10 cm x 5 cm. One month old seedlings were planted at a spacing of 45 cm x 30 cm under naturally ventilated greenhouse. In each treatment 24 plants were planted. There were fifteen treatments and three replications under each growing conditions.

### **Pruning:**

Capsicum plants were pruned to retain two stems and four stems according to the treatment. In two branch pruning, secondary two branches, first flower and shoots under first flower were pinched out. In four branch pruning, the first flower and the shoots under first flower

<b>Preparation of growth regulators</b>		
Growth regulator	Concentration (ppm)	Quantity of growth substance dissolved
NAA	10	10 mg
	25	25 mg
GA <sub>3</sub>	10	10 mg
	25	25 mg