

EFFECT OF FOLIAR APPLICATIONS OF ZINC AND IRON ON GROWTH AND YIELD OF CAPSICUM cv. CALIFORNIA WONDER UNDER NET HOUSE CONDITIONS

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ABSTRACT

An experiment was carried out at University Department of Horticulture, Dr.P.D.K.V., Akola (M.S.) to study the effect of zinc and iron as a foliar application on growth and yield of capsicum under net house conditions. Experiment was laid out in Factorial Completely Randomized Design with three levels of zinc (Z_0 - 0.0% $ZnSO_4$, Z_1 - 0.25% $ZnSO_4$, Z_2 - 0.50% $ZnSO_4$) and three iron levels (F_0 - 0.0% $FeSO_4$, F_1 - 0.15% $FeSO_4$, F_2 - 0.30% $FeSO_4$), replicated four times with nine treatment combinations. The results of present investigation indicated that, the vegetative growth characters, viz., plant height, stem diameter, branches per plant, leaf area and plant spread as well as the yield contributing characters viz., fruit set, fruits harvested per plant, yield per plant and yield per square meter were found to be maximum in the in the foliar applications of treatment 0.50 per cent $ZnSO_4$.

Key words : Capsicum, Net house, Zinc, Iron, Growth, Yield.

Sweet pepper (*Capsicum annuum* var. *grossum*) belongs to family solanaceae, originated in Brazil. It is considered as one of the important vegetable crops in world. The fruit is seeded berry generally green in colour turning red at maturity and preferably bell shaped at maturity, large, smooth, thick flesh, blocky 3-4 lobbed, square to rectangular in shape. Mostly fruits are non pungent. It is also known as Bell pepper and Simla mirch in northern India.

In India, capsicum is grown on an area about 4,785 hectares with an annual production 42,230 tonnes and the productivity is 8.85 t/ha (Anon., 2005). Presently the area under this crop is very less and is likely to increase in the near future because of heavy demand. However, the yield is low due to severe flowers drop which needs to be increased by adopting improved agro-techniques.

Micronutrients are plays an important role in crop nutrition because of increased demand from high yielding crops and intensive cropping. The continued expansion of cropping on the marginal lands with low levels of micronutrients due to increased use of high analysis fertilizers containing low levels of micronutrients, decreased use of manures, compost and crop residue in some parts of world. The mining of micronutrients reserves in soils make nutrient imbalance. In addition there is an emerging shift in emphasis from the role of

micronutrients in crop production to their levels in the main staple foods in diet of human. Hence, keeping all these points in view, the attempts were made to find out the suitable concentration of zinc and iron for foliar application to maximize the production of capsicum under net house conditions.

MATERIALS AND METHODS

An experiment was laid out in Factorial Completely Randomized Design with three levels of zinc (Z_0 - 0.0% $ZnSO_4$, Z_1 - 0.25% $ZnSO_4$, Z_2 - 0.50% $ZnSO_4$) and three iron levels (F_0 - 0.0% $FeSO_4$, F_1 - 0.15% $FeSO_4$, F_2 - 0.30% $FeSO_4$) and replicated four times with nine treatment combinations in medium cost net house of 264 m². The net house was constructed by using galvanized pipe framed structure covered with 75 per cent intensity shade green colour net at University Department of Horticulture, Dr.P.D.K.V., Akola (M.S.).

The seedlings were transplanted on 27th June, 2005. The uniform and healthy seedlings of capsicum of 42 days old and having 4-5 true leaves were selected for transplanting. The seedlings were transplanted on raised bed with spacing 45 x 45 cm. The solutions of micronutrients zinc of 0.25 and 0.50 per cent concentration and ferrous of 0.15 and 0.30 per cent were prepared by using analytical reagent (A.R.) grade zinc sulphate and ferrous sulphate.

The micronutrient solutions were sprayed as per treatments on 27th July, 2005 and the second spray on