



Research Paper

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Effect of boron, zinc and their combinations on the yield of cauliflower (*Brassica oleracea* var. *Botrytis* Linn.) hybrid cultivar – Himani

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ABSTRACT : The experiment was conducted at permanent vegetable farm, Bihar Agricultural College, Sabour, Bhagalpur during two consecutive *Kharif* seasons of 2007-08 and 2008-09. The soil of the experimental plot was sandy loam having pH of 7.4. The treatments comprised of four basal dose of boron in form of borax (0, 5, 10 and 15 kg/ha) and Zinc in the form of zinc sulphate (0, 10, 20 and 30 kg/ha). There were 16 treatment combinations. The experiment was laid out in Randomized Block Design, replicated thrice. The hybrid used was Himani. All the experimental plots uniformly received 200 kg N, 100 kg P₂O₅ and 80 kg K₂O per hectare. The plant height, number of leaves per plant, biological yield, curd weight and marketable yield were found highest with combined soil application of 20 kg ZnSO₄ + 10 kg B/ha which showed statistical equality with 30 kg ZnSO₄ + 10 kg B/ha.

KEY WORDS : Boron, Zinc, Cauliflower, Hybrid cultivar

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Cauliflower (*Brassica oleracea* var. *Botrytis* Linn.) is an important vegetable crop grown in India. Its hybrid group of varieties is highly valued for its medium sized, compact and white curds. Cauliflower in general and variety Himani in particular is heavy feeder of nutrients. In Bihar, the soils of Bhagalpur district are alkaline in nature and characterized by high pH ranging between 8.0-9.0 and due to high pH, boron and zinc become unavailable to the plants. Therefore, for getting higher yield, applications of boron along with zinc are essential. But the informations on the use of boron in combination with zinc are scanty. Therefore, the present investigation was conducted with a view to study the effect of boron and zinc and their combinations on the yield of cauliflower.

RESEARCH METHODS

The field experiment was conducted at permanent vegetable farms, Bihar Agricultural College, Sabour, Bhagalpur during two consecutive *Kharif* seasons of 2007 – 08 and 2008 – 09. The soil of the experimental field was sandy loam with

pH 8.4. The experiment was laid out in Randomized Block Design. The treatments comprised of four basal dose of boron in the form of borax (0, 5, 10 and 15 kg/ha) and zinc in the forms of zinc sulphate (0, 10, 20 and 30 kg/ha). Therefore, there were sixteen treatment combinations which were replicated three times. Seedlings of Himani hybrid were transplanted after five weeks of seed sowing at the spacing of 60 x 40 cm. All the experimental plots uniformly received 200 kg N, 100 kg P and 80 kg K per hectare. Full dose of phosphorus, potash and 40% of nitrogen were applied as basal dose. Rest of nitrogen was top dressed in two equal splits doses at 30 days intervals.

RESEARCH FINDINGS AND DISCUSSION

The results of study are presented in Table 1 and 2.

The results revealed that the growth attribute like plant height was maximum at 10 kg B/ha which was outstanding being significantly superior to other levels of borax. The effect of zinc sulphate was also found significant on plant height. The highest plant height was noted at 20 kg Zn/ha. The maximum plant height was obtained with the application of 20