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Effect of foliar application of micronutrients and growth regulators on growth and yield of cabbage (*Brasicca oleracea* L. Var. capitata) cv. GOLDEN ACRE

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Abstract : The field experiment was conducted with a view to work out effects of micronutrients and growth regulators alone or in combination of both on growth and yield of cabbage. Among different treatments of micronutrients (zinc sulphate, 0.5%) and growth regulators, (GA_3 @ 100 ppm) recorded significantly higher plant height, leaf area, head volume, head diameter, average head weight, and cabbage head yield. Among all the interactions of micronutrients and growth regulators treatments, interaction M_1G_2 (zinc sulphate 0.5% + GA_3 100 ppm) recorded significantly highest plant height (15.85 cm), stem girth (7.37cm), leaf area (385.93 cm^2), head diameter (16.85 cm), head volume (1089.17 cm^3), average head weight (1018.33 g), cabbage head yield (30.48 t /ha). Other morphological parameter *viz*., plant spread, number of leaves per plant, days taken to head formation remained unaffected by the different levels micronutrients and growth regulators over control.

Key words : Cabbage, Growth, Yield, Micronutrients, Growth regulators

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Cabbage (*Brasicca oleracea* L.Var. capitata) is one of the important leafy vegetable crop and used as salad, cooked, pickling as well as dehydrated vegetable. The cabbage head is rich source of vitamin A, B, C and also contains minerals. It has cooling effect and helps in preventing constipation, increase appetite, speed up digestion and very useful for patients of diabetes.

Due to the intensive cultivation and judicious use of only nitrogenous fertilizers, soils are become deficit in secondary and micronutrients. Since micronutrients are costly chemicals, amelioration of such deficiencies through soil application may increase the cost of cultivation whereas foliar applications may reduce the cost owing to the lesser quantities required and better absorption through the foliage. Similarly growth regulators are also becoming very popular for obtaining higher yields in vegetable crops. They help in the synthesis of metabolites as well as translocation of nutrients and assimilation in different parts, which ultimately resulted in higher yields. Among several growth regulators, gibberellins, and auxins are very popular and being used in commercial scale on number of vegetable crops. Plant growth regulators are effective at very low concentration when used at active growth stage *i.e.*, vegetative growth of the crop. Hence, this trial was undertaken to find out the effect of micronutrients and growth regulators on growth and production of cabbage which is being a very commonly used as salad vegetable.

RESEARCH METHODS

A field experiment was conducted on cabbage cv. GOLDEN ACRE at Horticultural Research cum Demonstration Farm, Department of Horticulture, B.A. College of Agriculture, Anand Agricultural University, Anand during the *Rabi* season of the years 2007 and 2008 with Factorial Randomized Block Design. The treatments comprised of three levels of micronutrients (0.0, zinc sulphate 0.5%, ferrous sulphate 0.5%) and five levels of growth regulators(0.0, GA_3 @ 50ppm, GA_3 @ 100 ppm, NAA @ 100ppm, NAA @ 200ppm) total fifteen