

## Effect of plant growth regulators on yield of cabbage (*Brassica oleraceae* var. *capitata*)

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### SUMMARY

The effect of GA3 and/or NAA (both at 25, 50, 75 or 100 ppm) on the yield and yield parameters of cabbage (cv. PRIDE OF INDIA) was investigated in the field at Department of Horticulture, college of Agriculture, Parbhani. The highest yield was obtained with GA3 at 50 ppm followed by NAA at 50 ppm (332.01 and 331.06 q/ha, respectively) Combinations and higher concentrations of plant growth regulators proved less effective.

**Key words :** Plant growth regulators, Cabbage, Yield, Yield parameters.

Vegetables are high yielding and provide nutritional security, more employment, more cash and foreign exchange. Cabbage is one of the most popular vegetable in India accounting 6.3 per cent of total world production. To increase the yield of cabbage, application of major and minor nutrients is helpful as well as this can also be improved by breeding. Nowadays plant growth regulators have been tried to improve growth and ultimately yield. Ram *et al.* (1973), Patil *et al.* (1987) and Kumar *et al.* (1996) tried various growth regulators to obtain better yield of good quality heads in cabbage and obtained encouraging results. Hence, it was felt necessary to undertake the work on the effect of foliar spray of plant growth regulators on yield of cabbage.

### MATERIALS AND METHODS

The experiment was conducted at Department of Horticulture, College of Agriculture, MAU, Parbhani during *rabi* season 2001-2002 on cultivar "Pride of India". The experiment was laid out in RBD with 14 treatments and 3 replications. The experimental site was having fairly uniform, black cotton soil with good drainage. The treatments consisted of two sprays of GA or NAA at concentrations 25, 50, 75 or 100 ppm along with their combinations and 1 per cent urea was sprayed at 15 and 3 days after transplanting. All standard cultivation practices were adopted and observations regarding time of head initiation and maturity, weight and size of head, yield per hectare were recorded.

### RESULTS AND DISCUSSION

Data relating to the effect of GA and NAA along with urea on yield and yield parameters of cabbage are presented in the Table 1.

### Yield parameters:

#### Period of head initiation:

From the results obtained in the present investigation it is revealed that the head initiation was significantly advanced due to application of GA and NAA at different concentrations. It was revealed that the minimum period of head initiation was in the treatment GA 75 ppm which was followed by GA 100 ppm and NAA 100 ppm. Number of workers have demonstrated that the maturity of the vegetable crops is hastened due to the application of plant growth regulators (Bukovac and Wittwer 1957; Chhonkar and Jha, 1963; Ram *et al.*, 1973).

Kumar *et al.* (1996) found that the treatments GA at 50 ppm and NAA at 50 ppm reduced the number of days required to start the head formation in cabbage. The results obtained in present investigation are in confirmative to those obtained by Kumar *et al.* (1996). The plant growth regulator treatments significantly increased the plant growth compared to control. As the plant growth was hastened, this might have caused in the hastening of the process of head formation within the plant.

The maturity of head was also hastened due to application of different plant growth regulators. The earliest harvestings were obtained from the plots which were treated with GA 75 ppm.

Chhonkar and Jha (1963) found that the application of NAA to cabbage plants resulted in earlier head maturity. Chauhan and Balwant Singh (1970) also obtained earlier maturity of cabbage heads due to the application of GA 15 ppm in two sprays. The results obtained in the present investigation are in confirmative to these findings. The plant growth regulator treatments reduced the number of days required for the initiation of head. This has resulted in the earlyness in the maturity of

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