

EFFECT OF PLANT GROWTH REGULATORS ON GROWTH OF CABBAGE (*Brassica oleracea var. capitata*)

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ABSTRACT

Studies on influence of GA, NAA, urea sole and in combination on different growth parameters on cabbage (cv. pride of India) were studied at Dept. of Horticulture, Marathwada Agricultural University, Parbhani. Among the various growth regulators and their different concentrations studied, application of GA 50ppm was found significantly superior over most of the treatments followed by NAA 50 ppm in terms of plant height, plant spread, circumference of stem, leaf area, fresh and dry weight of plant, root spread, fresh and dry wt. Except in case of average plant spread which was followed by NAA 100 ppm.

Key words : Cabbage, GA₃, NAA.

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 nutrient is helpful. Now a days plant growth regulators have been tried to improve growth and ultimately yield. Among the growth regulators GA and NAA exhibited beneficial effect in several crops (Chhonkar, 1967; Badawi and Sahhar, 1978; Kumar *et al.*, 1996). However, information on the effect of GA₃, NAA and urea in cabbage under mild tropical conditions of Marathwada region is not available. Therefore, the present experiment was carried out to study the effect of GA₃, NAA and urea on growth of cabbage.

MATERIALS AND METHODS

The experiment was conducted on cv. PRIDE OF INDIA during *rabi* (winter) season 2001-2002 at the Department of Horticulture, College of Agriculture, MAU, Parbhani. The experimental soil was fairly uniform, medium black cotton type with good drainage. The trial was laid out in R.B.D. with fourteen (14) treatments and with three (3) replications. The treatments consisted of two sprays of GA or NAA at concentrations 25, 50, 75 and 100 ppm along with their combinations and 1 per cent urea was sprayed at 15 and 30 days after transplanting. Uniform cultural practices were adopted and observations on plant height, number of leaves per plant, plant spread, circumference of stem, fresh and dry weight of plant and roots, the spread of root, leaf area per plant were recorded.

RESULTS AND DISCUSSION

Data relating to the effect of GA₃ and NAA along with urea on growth of cabbage are presented in Table 1 and 2.

Growth parameters :

Growth is a function of various vegetative characters put together viz., height of plant, number of leaves, plant spread, leaf area per plant, circumference of stem, fresh and dry weight of plant etc. The different growth parameters were significantly affected by the application of different growth regulator treatments.

Height of plant :

The results obtained in the present studies indicate that plant height was significantly increased due to the treatments GA 50 ppm and NAA 50 ppm. Similar results were obtained by Patil *et al.* (1987). Kumar *et al.* (1996) found that when GA or NAA each at 25, 50, 75 and 100 ppm was applied one month after transplanting, the plant growth was best at GA 50 ppm. Further, they found the best growth in terms of plant height with the application of GA at 50 ppm followed by NAA at 50 ppm. The results obtained in the present investigation are in confirmative to those reported by these earlier workers. In the present studies GA₃ at 50 ppm or NAA at 50 ppm were found better than their higher concentrations. This may be due to the fact that response of a plant through a hormones is restricted upto a certain concentration of the plant hormone, above which the positive effect declines and negative response may occur.