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Research Paper

Effect of foliar application of growth regulators on growth, yield and quality of cabbage cv. GOLDEN ACRE

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ABSTRACT

An experiment was carried out to study the effect of growth regulators on growth, yield and quality of cabbage cv. GOLDEN ACRE. It revealed that application of GA_3 50 ppm recorded superior results in respect of shape index of head, weight of head, yield per plot and per hectare and staying capacity of head, where as GA_3 75 ppm recorded less number of days required for head initiation and head maturity. However, NAA 50 ppm exhibited more TSS and ascorbic acid content in the head. Keeping quality of head was seen maximum in GA_3 100 ppm application.

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Key words : Cabbage, GA_3, NAA, Growth regulators

Cabbage [*Brassica oleraceae* (L) var. Capitata] is one of the most popular vegetable being grown globally in more than 90 countries, India occupies third position in cabbage production in world. Cabbage Crop is much preferred by the growers because of assured yield and transportable capacity. Nutritionally it is an important source of minerals, vitamin, protein, carbohydrates and diatary fibers. Various workers have recommanded various doses of major and minor nutrients, high yielding varieties, cultural trials and plant growth regulator applications for increasing yield of cabbage. In India, several research workers have studied the effect of plant growth regulators on various vegetables, especially on seed treatment, seedling treatment and foliar application, however, scanty references are available on the effect of foliar application of plant growth regulator on cabbage. Hence, it was felt necessary to undertake the work on effect of foliar sprays of plant growth regulators on growth, yield and quality of cabbage.

MATERIALS AND METHODS

The field trial was conducted at Department of Horticulture, College of Agriculture, Marathwada Agricultural University, Parbhani. The experiment was laid out in Randomized Block Design with ten treatments and three replications. The cultivar used was Golden acre and was transplanted at 45 x 45 cm spacing. The treatment consisted of GA_3 and NAA at 50, 75 and 100 ppm each and succinic acid at 250, 500 and 750 ppm concentrations. The spraying was done at 15 days intrval. Five plants per plot were selected randamly for taking observations regarding growth, yield and quality studies.

RESULTS AND DISCUSSION

The data presented in Table 1 indicated that the growth regulator treatments significantly enhanced the period required to head initiation and maturity over control. The minimum period for head intiliation (37.33 days) and maturity (59.33 days) were found in treatment GA_3 75 ppm (T_2) followed by GA_3 100 ppm. Early head initiation and maturity may be due to supressive action of GA_3 on apical meristem and it's interference with gibberellin biosynthesis resulting in fall in endogenous gibberellin levels. The results in the present study are supported by the findings of various research workers *viz.*, Booij (1990) in cauliflower, Kumar *et al.* (1996) in cabbage.

Shape index of head :

Highest shape index (1.15) was observed in the treatment GA_3 50 ppm followed by NAA 50 ppm. The shape index lies intermediate between oval and round shape. The differences in shape index were due to various polar and transverse diameter of the cabbage and more number of wrapper leaves. The result is in agreement