



## Influence of foliar application of GA<sub>3</sub> and NAA on growth, yield and quality of cabbage (*Brassica oleracea* var. *capitata*) cv. GOLDEN ACRE under South Gujarat conditions

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### ABSTRACT

A field experiment was conducted during *Rabi* season at Instructional Farm, Regional Horticultural Research Station of ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari to assess the response of cabbage to foliar application of PGRs namely, GA<sub>3</sub> and NAA with different concentrations. The trial was laid out by using cv. "Golden Acre" in randomized block design with three replications and total eight treatments comprised of three concentrations of each PGRs namely, GA<sub>3</sub> (5, 10 and 15 mg/l) as well as NAA (25, 50 and 75 mg/l) along with distilled water spray and absolute control. Foliar spray of GA<sub>3</sub> and NAA was given a month after transplanting of cabbage. The observations for growth, yield and quality attributes were recorded. The results revealed that foliar spray of GA<sub>3</sub> at 5 mg/l significantly affected days taken for head formation, height and spread of plant, stalk length, weight, diameter, firmness and dry weight of head as well as cabbage head yield. The maximum head yield of 29.39 t/ha was noticed in the treatment of foliar application of GA<sub>3</sub> 5 mg/l.

Saravaiya, S.N., Koladiya, P.B., Patel, A.M. and Patel, D.A. (2010). Influence of foliar application of GA<sub>3</sub> and NAA on growth, yield and quality of cabbage (*Brassica oleracea* var. *capitata*) cv. GOLDEN ACRE under South Gujarat conditions, *Asian J. Hort.*, **5** (2) : 393-395.

**Key words :** Cabbage, GA<sub>3</sub>, NAA, Growth, Yield and quality

The cabbage belongs to the family Brassicaceae is one of the most popular vegetables of cole group in the world. India comes next to China in cabbage production. The leading cabbage growing state is West Bengal whereas, in terms of productivity Uttar Pradesh is on the top. Total area under cabbage cultivation in India is 3,10,000 hectares with an annual production of 68,70,000 MT. The crop shares about 4.3% of the total area under vegetable and 6.06% of the total vegetable production. (Salaria and Salaria, 2009).

In Gujarat cabbage occupies an area of 22,955 hectares with total head production of 4,04,560 MT during 2008-09. (Anonymous, 2009). Cabbage is grown for its compact head mostly as a winter crop in the plains of India. The growth behavior of many plants could be modified or controlled by applying small amount of plant growth regulators, either by seed soaking, root dipping or whole plant spray. Among several growth substances, gibberellins and auxins are very promising and these are being used on large scale in number of vegetable crops. The role of GA<sub>3</sub> has been reported to be involved in

regulation of growth through cell division and enlargement (Sach *et al.*, 1958). Naphthalene acetic acid has been found to promote growth and development of the plant. The concentration of the chemicals, environmental conditions and the methods of application play an important role in determining their practical utility. Keeping all these points in view an investigation was carried out to study the influence of foliar application of GA<sub>3</sub> and NAA on growth, yield and quality of cabbage cv. "Golden Acre" under south Gujarat conditions.

### MATERIALS AND METHODS

The field experiment was conducted at Instructional Farm, Regional Horticultural Research Station of ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari during *Rabi* season on cabbage cv. "GOLDEN ACRE". The experiment was laid out in Randomized Block Design. The treatment comprised of three different concentrations of GA<sub>3</sub> (5, 10 and 15 mg/l) and NAA (25, 50 and 75 mg/l) along with distilled water spray and absolute control. The spraying was done 30