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Role of Plant Growth Regulators in Vegetable Crops

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INTRODUCTION

Plant growth regulators have also been used as an important component in agricultural production. Prior to the discovery of plant hormones. Plant growth regulators are now being used for more than one Million hectares of crop production worldwide per year (Lee, 2003). Plant growth regulator is a modern concept as a management practice for vegetable production. Numerous studies have been conducted to evaluate the influence of growth regulators on vegetables Crops. At present, different plant growth regulators such as GA3, NAA, 2, 4-D, IAA, IBA, 4-CPA, etc. at different concentrations are used in vegetables such as tomato, cabbage, cauliflower and okra for improving yield and quality.

Impact of application of the GA3 and NAA on tomato yield and quality:

Prasad et al. (2013) find out a tomato research with GA3 levels (20, 40, 60, 80 ppm) and NAA levels (25, 50, 75, 100 ppm).GA3 and NAA significantly apply the percentage of fruit collection, the number of fruits per plant and the fruit yield increased compared with the stock. Maximum fruit yield (48.36 t / ha) was obtained with closely followed application GA3 @80 ppm By NAA@100 ppm (47.42 t / ha).

Influence of growth regulators at various concentrations on yields and improved quality

For okra:

Okra (*Abelmoschus esculentus* (L.) is an annual vegetable crop grown in the tropical and subtropical regions. Tropical corners of the world. Various activities like the use of growth will help to achieve this goal. It appears that regulators like GA3, NAA, Miraculous etc. are the most efficient.

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GA3 was identified as Beneficial in okra, since it leads to the regulation of crop growth and development.

Impact of growth regulators at different concentration on yield and improvement of quality on the cabbage:

Cabbage (*Brassica oleracea* var. *capitata* L.), a member of the Cruciferae family. The development of cabbage can be improved by the use of GA3. Cabbage was found to show rapid growth when treated with plant growth regulators (Islam et al., 1993).

Influence of growth regulators at different concentrations on yields and improved quality

Of the cauliflower:

One of the most important cole is the cauliflower (*Brassica oleracea* var. botrytis sub-var. *cauliflora*) The crop is a member of the cruciferae family. Many experiments were conducted in the developed Nations are studying the effects of plant growth regulators on Cauliflower yield and quality. Promising results on the yield and quality of cauliflower and other crops were found due to the use of PGR, such as NAA, GA3, IAA etc (Sentelhas et al., 1987).

Hybrid seed production:

In others, Ethephon was used to create female lines cucurbits. Efficient F1 hybrid in butter-nut squash was developed with female line Produced with 10 Ethephon sprays per week. Plant growth controllers were also used To upkeep gynoecious lines. GA3 sprays were made in cucumber to induce Flowers staminate on gynoecious sides.

PGR methods:

1. **Method of soaking:** The calculated quantity of PGR is dissolved in alcohol, then diluted with Water distilled to make the required solution quantity and concentration (20-2000 ppm), The cuttings are soaked in water 24 hours before they are planted.
2. **Powder form:** PGR powders mixed with organic solvent dissolved in Moist charcoal powder, soybean flour or wheat flour and a standardized paste for preparation. The paste may stand until the solvent evaporates.
3. **Lanoline paste:** The majority of the PGR-promoting roots are readily soluble in lanolin; a lanoline paste that promotes advantageous plant roots is developed by mixing PGR and making to cool in lanoline.
4. Spraying method
5. Root feeding method
6. Injection of solution into internal tissues

CONCLUSION

Plant growth regulators are a group of chemicals used to control and enhance the natural environment. Plant growth processes to better meet food supply requirements in general. Use of the Plant growth regulators may benefit from short-term imperatives. Regulators for Plant Growth Provide immediate and less time-consuming impacts on crop improvement programs. Requirements by plant growth regulators will produce quantifiable benefits for User plant growth regulators must be specific in their actions and must be toxicological and environmentally safe. Industries involved in plant growth regulator development should be well advised of the latest scientific advances in plant growth production. They are not only useful but also profitable for growers, distributors and formation . Some plant growth regulators are required which can inhibit plant photorespiration.

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