



Plant growth regulators in fruit and vegetable crops

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Abstract : The use of plant growth regulators in modern horticulture is well established. Indeed certain fields of horticulture such as asexual propagation are heavily dependent on the use of synthetic growth regulators. During recent years, the interest in fruit and vegetable production has increased rapidly because of good price value and place of vegetables in national food requirement. Yield increase in fruit and vegetable crops has been obtained through improved fruit and vegetable varieties, efficient use of chemicals fertilizers and various agronomic practices. Besides, growth regulating chemicals are also becoming important in the field of horticulture for the modification of vegetative growth, flowering, fruiting and quality. This review deals with the use of plant growth regulators in relation to vegetative growth, control of flowering, effects on fruit set and development and quality of fruit in the perceived future.

Key Words : Growth regulators, Vegetative growth, Yield, Quality

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INTRODUCTION

Plant growth regulators have remained an important component in horticulture from time immemorial because they were effective means of quantitative as well as qualitative improvement in growth and development of crops. Plant growth and development as well as the responses to environmental factors, are highly regulated by complex and coordinated action of the endogenous hormones. In addition to this other plant growth regulators are also reported to be very helpful in this direction by altering the growth and development of plant. The fruiting is regulated at different times of flower emergence (Sharma and Singh, 2000) and at different intensities to maintain the productivity of the plants. The different timings of crop regulation with different chemicals have produced different effects on fruit yield and quality. They have the potential of increasing plant productivity and quality through influence on various metabolic process. Plant growth regulators are known to improve fruit size, appearance and aril quality by direct effect

on fruit growth and development or indirectly by regulating crops load, tree vigour and canopy architecture. The exogenous application of growth regulators has been found very effective in improving fruit size and quality of many fruit crops. Among the growth regulators, a synthetic cytokinin *i.e.* CPPU and promaline have been found very effective in stimulating fruit growth in grapes, apple and cranberry. Besides fruit size, CPPU also modifies the characters such as shape, dry matter and ripening process. In areas, where chilling requirement is not fulfilled during winters, use of hydrogen cyanamide has been found to improve the flowering in horticultural crops. Now a day commercial formulations of these hormones are available in the market and their use is relatively cheap and economical to the farmers. The effect of plant growth regulators in horticultural crop production is briefly reviewed under appropriate sub headings :

Vegetative growth :

Devnath and Kundu (2001) reported that NAA at 200 to 400 ppm resulted in maximum production of new shoots in

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