

CURRENT AND POTENTIAL USES OF PLANT GROWTH REGULATORS IN FLORICULTURE AND ORNAMENTAL PLANTS

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Over the years, the use of plant growth regulators have been reviewed extensively and as such my presentation seeks to provide a succinct summary of the uses of plant growth regulators within the ornamental and floriculture industry. The key uses of plant growth regulators in ornamental horticulture and floriculture are height regulation, increased branching, propagation of cuttings, flowering control, enhancing stress tolerance, and enhanced postharvest longevity during shipping, marketing, and display life of cut flowers and potted plants. In most cases, height reduction is desired in bedding, potted and woody ornamentals but in some cases height enhancement is also desired. Recent introduction of triazoles have greatly expanded the uses of PGR's especially in the production of woody crops and difficult to control crops. An excellent review by Fletcher et al (2000) of triazoles has recently been published and I refer anyone interested in further information to this publication. Interest in the use of PGR's to increase branching is increasing as the cost and availability of labor has made mechanical methods of forcing increased branching more expensive. A number of products are on the market but their use is still limited to date because of reasons listed at the end of this expanded abstract. The use of auxins in plant propagation was one of the earliest adoptions of the use of plant growth regulators in the production of ornamentals. This use has led to shorter production times, decreased production costs, and allowed mass production of many species that were difficult to root prior to the advent of synthetic auxins. Finally, considerable success has been achieved in preventing injury induced by ethylene during storage, transport and retail display of ornamental plants and cut flowers. The use of silver thiosulphate and more recently 1-methylcyclopropene to reduce ethylene sensitivity in flowers and aminovinylglycine and aminoxyacetic acid to inhibit ethylene biosynthesis, has resulted in enhanced longevity and display life of several floriculture crops. However, although PGRs are extensively used on high value floricultural crops, their use in production of nursery crops and the maintenance of landscape plants is beset with limitations which include inconsistent species specific response, cost effectiveness, limited label registration, and constraints of uncontrolled environments, application methods, variable cultural practices and a relative lack of resources to assist producers. This necessitates expensive prior "on site" trials at the level of grower. If these constraints can be addressed, new avenues may become available to growers.

LITERATURE CITED

Fletcher, R.A., A. Gilley, N. Sankhla and T.D. Davis. 2000. Triazoles as plant growth regulators and stress protectants. *Horticultural Reviews*. 24:55-138.

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