Factors influencing plant response to chemical PGR's can be separated into three groups: Plant Factors which include (a) cultivar or variety, (b) physiological stage of plant development, (c) plant status, (d) plant size; Environmental Factors which include (a) weather (light and temperature), (b) medium composition, (c) water quality, (d) crop nutrition; and Physical and Chemical Factors which include (a) residual chemical effects (b) spray droplet size, (c) spray coverage. A brief discussion of each of these factors follows.

Cultivars vary greatly in growth habit, chemical and environmental sensitivity. Selecting the proper cultivar is the most important step in limiting the use of PGR's and in achieving satisfactory results. For example use genetic dwarfs, less vigorous, slow growing or naturally compact plants in lieu of chemicals if height control is important; use free branching cultivars if this growth habit is most desirable. Avoid using sensitive cultivars when possible (those which are easily injured by the chemical being applied) or use the low rate of the recommended range if a sensitive variety is used. Information on plant growth habit is available from plant producers and distributors. Additional information, not available through these channels, must be obtained by individual growers on a "try and see" basis.

The physiological stage of development refers to the actual amount of growth and development which has occurred. Bud diameter, lateral shoot length, number of leaves and plant diameter all refer to physiological stages of development. Two weeks after transplant or pinch are not physiological measures of development. The rate of physiological development will be more rapid for vigorous cultivars grown under warm conditions with high light than for less vigorous cultivars produced under cool, darker growing conditions over the same period of time. Chemicals should be applied at the stage of development specified on the label. If the stage of physiological development is not specified, it is important for the grower to keep records to aid in future decision making. Plants treated too early in development or too late in development may not respond properly. Stunting, damage or a total lack of control can result.

Plant status refers to the physical condition of a plant. Often this term is used in conjunction with water stress, i.e. wilted or nonwilted plants. Wilted leaves do not readily absorb chemicals applied as a spray. Applying growth regulators to wilted or soon-to-be-wilted plants will make uniform chemical control difficult. Irrigate plants prior to spraying. Only apply PGRs to turgid plants.

Forcing greenhouse azaleas

Allen C. Botacchi
Cooperative Extension System

Currently most growers force "prepared" azalea plants that were purchased from specialists. This was not the procedure 20 years ago, when most growers then sheared, shaped and conditioned azaleas for subsequent forcing. Since the azalea is an expensive crop to grow, commercial growers either stopped raising the crop or drastically reduced production in recent years. At the present time the azalea appears to be making a limited comeback.

Assuming that today's grower is starting with a budded ready-to-force azalea, growers should remember the following details:
1. Know the variety/cultivar and its specific or unique requirements.
2. Carefully check with the supplier and determine previous fertility applications. Visually check pot surfaces for slow release fertilizers, either prilled or tablet form. If present, remove it.
3. Note--too many azalea crops are killed or ruined by excess fertilizer. Azaleas are light feeders relative to most greenhouse crops.
5. Promptly remove by-pass shoots (vegetative shoots forming directly below the flower bud) during forcing, as these shoots may cause bud blasting. A slight sideways, twisting motion will do it.
6. Pay close attention to forcing temperatures.

References

Cyclamen from seed

Robert Adzima
Floriculture Greenhouse Manager

Cyclamen grown from seed can be a frustrating crop, but the results can be quite rewarding. The beauty of the finished crop can be very striking, and the sales appeal is very high.

My knowledge is an accumulation of information from The Ball Red Book, Cornell Recommendations, Florist Crop Production and Marketing, Commercial Flower Forcing and about twenty-five years of growing experiences.

During the latter years, we have seen the advent of miniature varieties, fast crop varieties and those with scent. Cyclamen is a slow-growing crop. Using a 50°F night growing temperature, ten to twelve months are required to produce the standard cyclamen from seed.

Cyclamen from seed, sown about January 17 in a 60°F house, finishes or is ready to sell mid-October to about Thanksgiving. We have sown the seed in a number of different mixtures including: soil, peat, perlite (1-1-1), pure peat and peat pellets. These media have produced good crops with variable germination. Good germination for cyclamen is somewhere around seventy percent.

When you order the seed, there are lots of qualifying factors. Seed companies offer cyclamen in a multitude of colors, single and double flowers, fringed flowers, standard and miniature varieties, and with a range of leaf variegation.

Plugs and prefinished plants are also available and should be considered as an alternative to seeding.

We start with pasteurized materials—soil, peat, perlite, flats, pots and covers. Light soil mixes such as a 1-1-1, (soil, peat and coarse perlite) are amended with 4 oz osmocote (14-14-14), 1 oz Electra (5-10-3),

Considerations for the grower when using plant growth regulators

Richard J. McAvoy
Extension Floriculture Specialist

Plant growth regulators (PGR’s) are chemical compounds which alter plant growth and development through hormonal action. Plant growth regulators can be used to increase or retard plant height, prolong or break dormancy, or to promote rooting, branching and/or flowering.

Plant growth regulators represent just one part of a complete crop management system. Optimal crop performance is best achieved with a program of sound cultural practices in a carefully controlled environment. A growth regulator should be used to induce specific crop responses (i.e. reduce height or induce branching) which cannot be achieved through normal crop management. However, growth regulators are not a substitute for proper crop culture and accurate environmental control.

Any factor that affects the rate and quality of plant growth and development will influence the response of a plant to a plant growth regulator. All factors should be considered in a production system. For most PGR’s the recommended dosage to be used for a crop will be presented as a range of values. The decision to work at the top or the bottom of a dosage range must be made by each individual grower. Growers must consider all of the factors affecting plant response to PGR’s relative to the conditions in their own greenhouses.