

The Other Day in The Greenhouse I Was Noticing . . .

by John Erwin

This week I took two field trips with students in the Bedding Plant Production Class to two retail centers. The seed geraniums and impatiens that we saw were very tall and few were in flower. The visits prompted me to review how we control geranium and impatiens height and rate of plant development.

Height Control Basics:

The number of nodes (leaves) on a stem together with the length of the stem segments (internode) between nodes constitutes total plant height. Two 'rules of thumb' identify what factors contribute to leaf unfolding and internode elongation:

- 1) Leaf unfolding increases as the average daily temperature a plant is grown under increases to 76-80°F.
- 2) Internode elongation increases as the difference between day and night temperature increases with temperatures between 50 and 86°F.

We apply growth retardants to decrease the amount of GA_1 present in the stem. GA_1 is the growth hormone that promotes cellular elongation in the stem. Growth retardants such as A-Rest, Bonzi, and Cycocel block the synthesis of GA_1 . The plant produces more GA_1 (hypothesis) when the difference between the day and night temperature is great. Hence, more growth retardant is needed when plants are grown a high +DIF.

Geranium Height Control: The growth retardant of choice for geraniums in the northern U.S. is Cycocel. Cycocel is effective when applied as a foliar spray at concentrations ranging from 500-1,500

ppm. Higher concentrations can result in foliar discoloring (yellowing), particularly along the leaf edges. Therefore, it is preferable that plants are sprayed every 1-2 weeks during periods of active stem elongation with 500-750 ppm to control growth. Start Cycocel applications when seedlings have approximately 4 true leaves. The advantage of Cycocel over Bonzi (also labeled for seed geranium application) is more control over the rate of elongation and less chance of overapplication which can be a problem in northern climates.

Many geraniums I saw this spring were way too tall. Plants were damaged 'right and left' on retail benches presumably during the handling process because of excessively tall stems.

Impatiens Height Control: Impatiens plant height is best controlled using Bonzi. Bonzi is a relatively new growth retardant that is only effective when applied to the stem or as a drench. It is approximately twice as effective per ppm as a drench than as a spray. The difficulty when applying Bonzi as a spray is the possibility of inducing nonuniformity in a crop through uneven application to the stem.

The most common problem when applying Bonzi in northern climates is overapplication. Applying too much Bonzi or allowing the material until it drips from the foliage into the media can result in greater effectiveness than expected.

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GrowerTalks on crop culture. 1991. Geo. J. Ball Pub., pp. 35, 37, 41, 104, 132, 134, 155, 206, 230, 233.

Ball RedBook. 1991. 15 Ed. ed. Vic Ball. pp. 391, 398, 401, 471, 568, 602, 736, 776, 778.

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Remember, in addition to height control, growth retardants have a number of beneficial effects other than height control: insect resistance, enhanced greening of foliar and greater drought tolerance.

Minnesota Commercial Flower Grower's News

Membership is Rising - At a time when many state associations are experiencing difficulties maintaining their current membership, MFGA membership has been showing a steady rise. Most new memberships have been coming from outside Minnesota. In particular we have individuals from Wisconsin and Iowa joining the association. In addition, a number of larger firms from around the country are joining. Most of these new memberships are at the associate level - they receive the bulletin only.

Extension Assistant to be Refilled - The MFGA and the University support a 100% extension assistant at the University of Minnesota. Debra Schwarze has held this position for the last 4 years. Debra has moved to another position. After some thought and discussion with MFGA members and the board of the Widmer Fund, we have upgraded the position to the Research Assistant or Doctoral level. We feel that our membership will be served better by this decision. Until the extension position is filled please leave a message on the phone when you call and 2) be patient in the response time (I receive 30-50 calls a day). More will be published about this in the next issue.

Other States Considering Joint Conference - The MFGA has proposed (voted on during the March meeting) to the Flower Grower Associations in Iowa, Wisconsin, and North and South Dakota that we hold a joint regional conference every other year starting in 1996. Decisions will be made by the end of September.

Other States Considering Receiving Bulletin - A number of other state associations in the upper U.S. are considering adding the MFGA bulletin as part of their membership benefits. Rest assured that this will occur only if the MFGA is benefited at large.

MFGA may support Shared Equipment - The MFGA is considering purchasing general use equipment that can be signed out by any member for use. Examples of possible shared equipment include light meters, wind meters, pH meters, Nutrient Meters, videos, and books etc. etc.

