



By Erik Runkle



Height Control for Vegetable Transplants

A recent supplemental labeling of Sumagic for use on vegetable transplants has made height control less complicated. There are a few other methods that may be helpful, too.

Compared with ornamentals, controlling plant height of vegetables can be difficult. That challenge has been reduced with the labeling of Sumagic (Valent Professional Products) on tomato, pepper, eggplant, groundcherry, pepino and tomatillo during the young plant stage. This article discusses guidelines for use of Sumagic on these crops, as well as alternative height control strategies.

Sumagic Sprays

Sumagic (uniconazole) is the only plant growth retardant that can legally be used as a foliar spray on young tomato, pepper, eggplant, groundcherry, pepino and tomatillo plants. The recommended label rate is 2-10 ppm at a volume of 2 quarts per 100 square feet of crop. Based on experiments performed at Michigan State University, University of Florida

This strategy is effective, but when taken to an extreme, it inhibits photosynthesis and limits plant growth. By providing a low, constant rate of the nitrate form of nitrogen (no ammoniacal nitrogen) and limiting the amount of phosphorus, stem extension can be suppressed with little effect on other growth attributes.

Negative DIF and Drop

Providing a negative DIF (a cooler day than night) is effective technique in inhibiting stem extension of most crops, including vegetables. A temperature drop during the first two to three hours of the day, beginning about 30 minutes before sunrise, is similarly or slightly less effective. In both techniques, plant response increases as the value of the DIF or drop increases. For example, plants grown with a 68/72° F day/night (-4° F DIF) will be taller than those grown at a 64/76° F day/night (-12° F DIF). If you use a DIF or drop, be sure to maintain your desired average daily temperature and use Virtual Grower to estimate the impacts on energy costs for heating.

Brushing

An effective — though not widely used — strategy is to brush plants repeatedly throughout the day. The goal is to slightly bend plants without tearing leaves or breaking stems. This can be accomplished by hanging plastic or some other material from irrigation booms and operating the booms frequently (10 or 20 times per day). For more information on brushing, read my article from February 2009, "Brushing Plants for Height Control" (www.gpnmag.com/article10047).

Supplemental Lighting

When the daily light integral is low, the addition of light from high-pressure sodium (HPS) lamps can suppress stem elongation. HPS lamps emit a high amount of red light relative to far-red light, which inhibits stem extension, particularly when applied during sunset. GPN

Erik Runkle is associate professor and floriculture extension specialist in Michigan State University's department of horticulture. He can be reached at runkleer@msu.edu or (517) 355-5191 ext. 1350.

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and University of Kentucky, a suggested starting rate for tomato is 1.0-2.5 ppm applied very early in production. Perform small-scale trials to determine appropriate rates for your growing conditions and desired responses.

According to the supplemental label, the cumulative amount of Sumagic may not exceed 10 ppm. In addition, the final application may not occur later than 14 days after the two to four true leaf stage. Currently, Sumagic is registered for use on vegetable transplants in all states except New York (label is pending there).

Limiting Water and Nutrients

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