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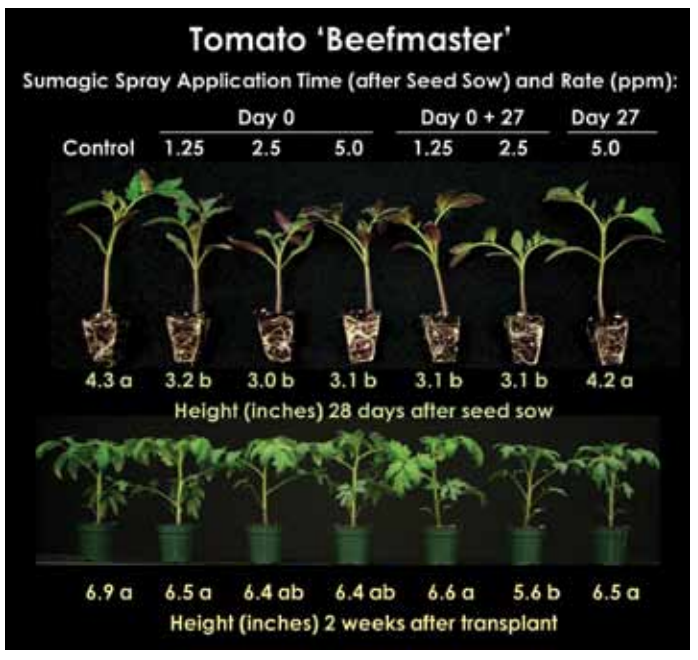
MICHIGAN STATE UNIVERSITY EXTENSION
FLORICULTURE TEAM

Sumagic on Vegetable Transplants



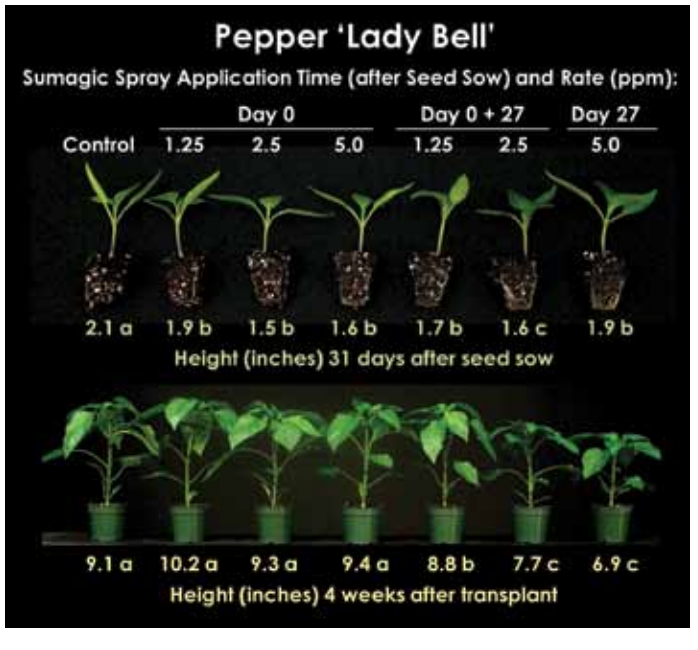


Figure 1. *The effects of one or two foliar spray applications of Sumagic on height of pepper and tomato seedlings, as well as two or four weeks after transplant. Heights followed by different letters indicate statistical differences.*

The plant growth retardant Sumagic (Valent USA) contains the active ingredient uniconazole and is the only plant growth retardant registered for use as a foliar spray on young tomato, pepper, eggplant, groundcherry, pepino and tomatillo plants. The recommended label rate is 2 to 10 ppm at a volume of 2 quarts per 100 square feet of crop. In addition, the cumulative amount of Sumagic may not exceed 10 ppm and the final application may not occur later than 14 days after the four-leaf stage.

Based on early university experiments performed in Michigan, Florida and Kentucky, a suggested starting spray rate for tomato was 1.0 to 2.5 ppm. However, these recommendations were based on limited data. We performed experiments at Michigan State to develop better recommendations for the use of Sumagic foliar sprays on four young vegetable transplant crops. We did not evaluate subsequent effects on flowering or fruiting.

Seeds of eggplant 'Little Fingers', pepper 'Lady Bell', and tomato 'Beefmaster' and 'Early Girl' were sown in 288-cell plug trays and grown a constant 68° F. In addition to an untreated control, there were six Sumagic treatments that were applied as foliar sprays (2 quarts/100 square feet):

- 1.25, 2.5 or 5.0 ppm at seed sow (spray to the media surface)
- 1.25 or 2.5 ppm at seed sow and again when plants had two leaves (27 days after sow)
- 5.0 ppm when plants had two leaves

At 28 days (tomato) or 31 days (pepper and eggplant) after seed sow, seedlings from each treatment were transplanted into 4-inch pots and plant height was measured at different times. Our results follow.

Eggplant. There was little or no effect of Sumagic on plant height at the rates tested, although those treated with Sumagic had smaller leaves. Therefore, rates greater than 5 ppm are likely required to suppress stem elongation.

Pepper. A single spray of 1.25 to 5.0 ppm at seed sow controlled seedling height throughout the plug stage (Figure 1). Two sprays at 2.5 ppm or a single foliar spray at 5 ppm at 27 days after seed sow continued to inhibit stem elongation at two and four weeks after transplant.

Tomato. A single spray at seed sow at 1.25 to 5.0 ppm suppressed stem elongation of seedlings throughout plug production (four weeks). At two and three weeks after transplant of 'Early Girl', most Sumagic treatments still had an effect on stem elongation. However for 'Beefmaster', the two 2.5-ppm sprays was the only treatment that reduced plant height at two weeks after transplant, and the response diminished by three weeks after transplant.

Based on these results, a Sumagic foliar spray applied when seedlings have developed their first leaves was most effective. A single Sumagic spray at 2.5 to 5.0 ppm for pepper and tomato and between 5 and 10 ppm for eggplant is suggested as a starting rate. Growers are encouraged to conduct their own small-scale trials to determine appropriate rates for their growing conditions and varieties. In addition, we urge growers to evaluate possible subsequent effects on flowering time and fruit size before making applications on a large scale. g

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