

Vegetative Annual Liner Dip Trials

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Summary: Commercially available plugs of 'Improved Charlie' vegetative petunia, 'Angel Mist Purple Improved' angelonia, 'Outback Purple' scaevola, and 'Twilight Blue with Eye' verbena were dipped for 10 minutes in 4, 8 or 16 ppm solutions of A-Rest, Topflor (0.38%), or Piccolo. A-Rest at concentrations up to 16 ppm was ineffective for controlling growth of any of the four plant types trialed, therefore higher concentrations may be required. At the concentrations used (<16 ppm), none of the PGRs (A-Rest, Topflor, or Piccolo) provided control of plant diameter of vegetative verbena. Higher concentrations of these PGRs or the use of Sumagic should be studied to determine optimal recommendations. Topflor significantly controlled growth of angelonia and scaevola at 4 ppm and 8 ppm was required for vegetative petunia. Piccolo provided similar control of plant diameter of vegetative petunia as Topflor, but higher concentrations would have to be used for comparable control on angelonia (>16 ppm) and scaevola (9.3 ppm). Although additional trials will need to be conducted to determine optimal concentrations, these results suggest Topflor and Piccolo liner dips are a suitable, cost effective alternative for controlling plant growth of vigorous vegetative annuals.



Objective

This study was conducted to determine the efficacy of A-Rest, Topflor, and Piccolo liner dips on growth control of angelonia, scaevola, vegetative petunia, and vegetative verbena.

Experiment

Commercially available plugs (105 cell) of 'Improved Charlie' vegetative petunia, 'Angel Mist Purple Improved' angelonia, 'Outback Purple' scaevola, and 'Twilight Blue with Eye' verbena were thoroughly irrigated until the substrate was saturated and allowed to drain for 30 minutes. The cell pack portion

containing the soil was then dipped for 10 minutes in 4, 8 or 16 ppm solutions of A-Rest, Topflor (0.38%), or Piccolo. The cuttings were transplanted into 5-inch pots on 20 Feb. 2003 using Berger[®] BM6 root substrate, which contains 75 to 80% Canadian sphagnum peat and 20 to 25% perlite. Plants were fertigated with 150 ppm N from Excel[®] 15-5-15 Cal-Mag. Greenhouse temperature day/night set points were 75/65°F and the plants were grown under natural daylength. The experiment was a completely randomized design with 6 single-plant replications of the ten treatments. Plant diameter (measured at the widest dimension, turned 90°, and averaged) and total plant height (measured from the pot rim to the uppermost part of the inflorescence) was recorded on 10 Apr. for angelonia. On 15 Apr., petunia, scaevola, and verbena plant diameter measurements were recorded.

Results

Angelonia. Plants treated with 4 ppm Topflor were 23% shorter than the nontreated plants. The degree of height control with 16 ppm Piccolo (14.5%) was less than with the Topflor application of 4 ppm. Higher concentrations of Piccolo should be studied to determine optimal concentrations. At the concentrations used (\leq 16 ppm), A-Rest did not provide control of plant height or diameter.

Plant diameter was 23.5% smaller with Topflor at 8 ppm and 9.2% smaller with 8 ppm Piccolo, compared to the nontreated control. The 8 ppm Topflor liner dip resulted in greater control of plant diameter than Piccolo.

Vegetative Petunia. Topflor and Piccolo were similar in their effect on plant diameter. Plants treated with 8 ppm Topflor were 22 inches diameter (15% smaller) and with 8 ppm Piccolo were 55.8 cm in diameter (20% smaller), than the nontreated plants. At the concentrations used (\leq 16 ppm), A-Rest did not

► provide control of plant diameter.

Vegetative Verbena. At the concentrations used (≤ 16 ppm), none of the PGRs (A-Rest, Topflor, or Piccolo) provided control of plant diameter (data not shown). Higher concentrations of these PGRs or the use of Sumagic should be studied to determine optimal recommendations.

Scaevola. Both Topflor and Piccolo controlled plant diameter of scaevola. Plants treated with 4 ppm Topflor were 29.2% smaller than the nontreated plants. To achieve a similar degree of diameter control with Piccolo, 9.3 ppm would be required. While the plants treated with 4 ppm Topflor flowered and were proportional to pot size, higher concentrations stunted plant growth. These results were based on North Carolina growing conditions, therefore concentrations would need to be adjusted for other locations or for growers desiring less control. A-Rest at ≤ 16 ppm did not provide control of plant diameter.

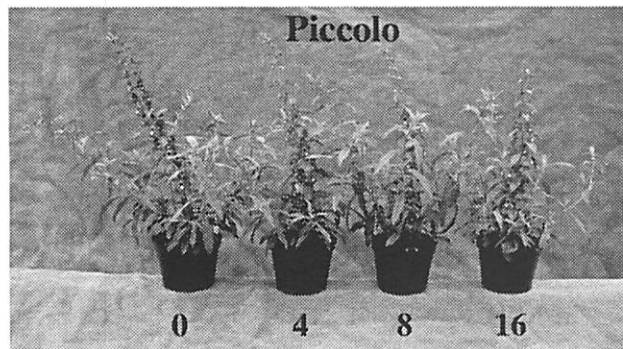
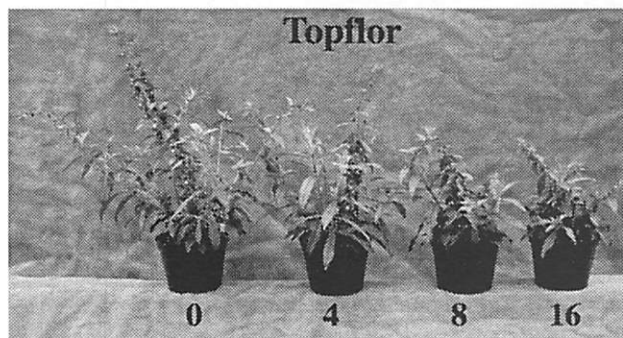
Recommendations

Topflor significantly controlled growth of angelonia and scaevola at 4 ppm and 8 ppm was required for vegetative petunia. Piccolo provided similar control of plant diameter of vegetative petunia as Topflor, but higher concentrations would have to be used for

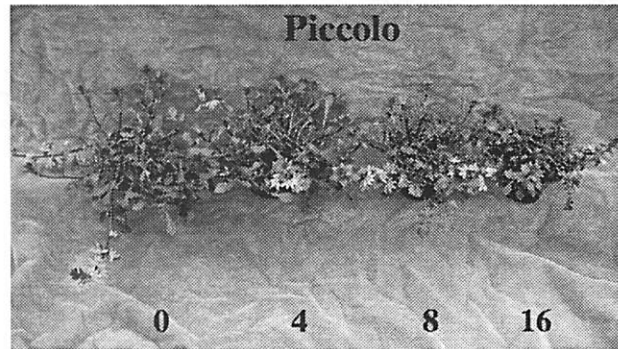
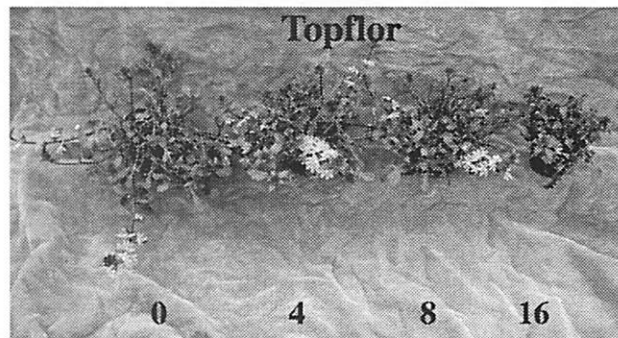
comparable control on angelonia (>16 ppm) and scaevola (9.3 ppm). At the concentrations used (≤ 16 ppm), none of the PGRs (A-Rest, Topflor, or Piccolo) provided control of plant diameter of vegetative verbena. Higher concentrations of these PGRs or the use of Sumagic should be studied to determine optimal recommendations. A-Rest at concentrations up to 16 ppm were not effective for controlling growth of any of the four plant types trialed, therefore higher concentrations may be required. Although additional trials will need to be conducted to determine optimal concentrations, these results suggest Topflor and Piccolo liner dips are a suitable, cost effective alternative for controlling plant growth of vigorous vegetative annuals.

Acknowledgements

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Comparison of Topflor and Piccolo rates on angelonia.



Comparison of Topflor and Piccolo rates on scaevola.