

Comparing Paclobutrazols

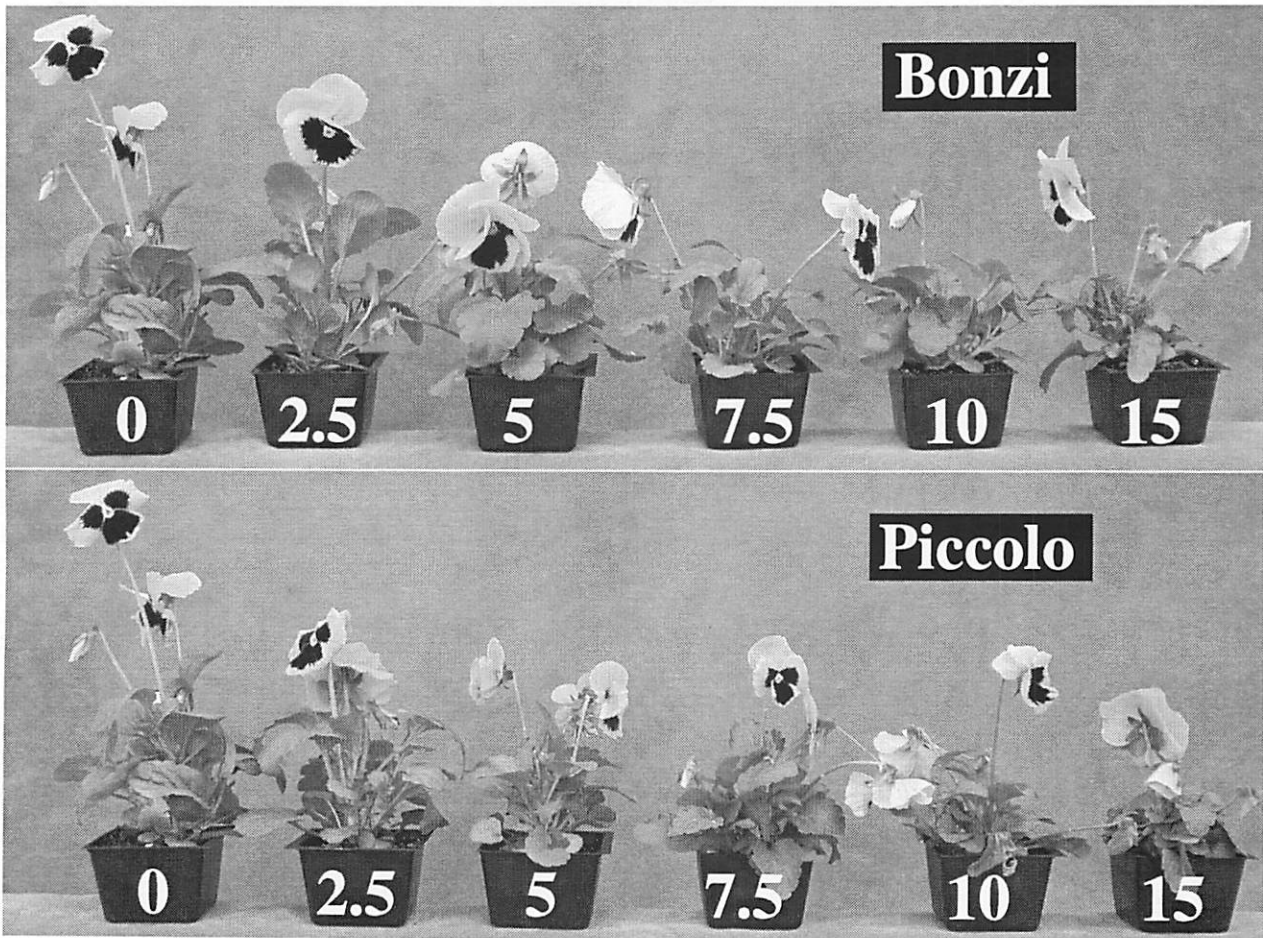
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Over the past two years, a number of major changes in the PGR world have been occurring behind the scenes. These changes will continue for the foreseeable future and be noticed by growers as new compounds are introduced. The bottom line is within the next five years, growers will be the ones to benefit from having a wider variety of PGR options and compounds at their disposal. These offerings will expand every grower's PGR toolbox and improve their management options for producing outstanding plants.

One such change was the introduction during the summer of 2003 of Piccolo. Piccolo is a 0.4% paclobutrazol and has been marketed in Europe since 1983 by Fine Agrochemicals Ltd. Bonzi, which is marketed by Syngenta, is also a 0.4% paclobutrazol. Both have their own unique, patented inert ingredients

(carriers). Growers have been asking "how do the two paclobutrazols compare"? To answer that question, we at NC State University have conducted a number of comparison trials, using both foliar sprays and substrate drenches, to see how they stack up. Below in text and photographs is a summary of our findings.

Pansy Foliar Sprays: Foliar sprays of Bonzi and Piccolo were compared for their efficacy on 'Majestic Giant Yellow Blotch' pansies. Foliar spray concentrations ranged from 2.5, 5, 7.5, 10, and 15 ppm, plus an untreated control. The application of both plant growth regulator resulted in a darker leaf color. Plant height and plant diameter were 46% and 32% smaller, respectively, with the application of either paclobutrazol at 15 ppm, as compared to the



- ▶ untreated control. At similar concentrations, both paclobutrazols provided a similar degree of control of plant height and plant diameter.

Geranium Foliar Sprays: Foliar sprays of Bonzi and Piccolo were compared for their efficacy on 'Noblese' geraniums. Foliar spray concentrations ranged from 5, 10, 20, 30, and 40 ppm, plus an untreated control. Plant height, canopy height, and plant diameter were 21%, 20%, and 17% smaller, respectively, with the application of either paclobutrazol at 20 ppm, as compared to the untreated control. At similar concentrations, both paclobutrazols provided a similar degree of control of plant height, canopy height, and plant diameter.

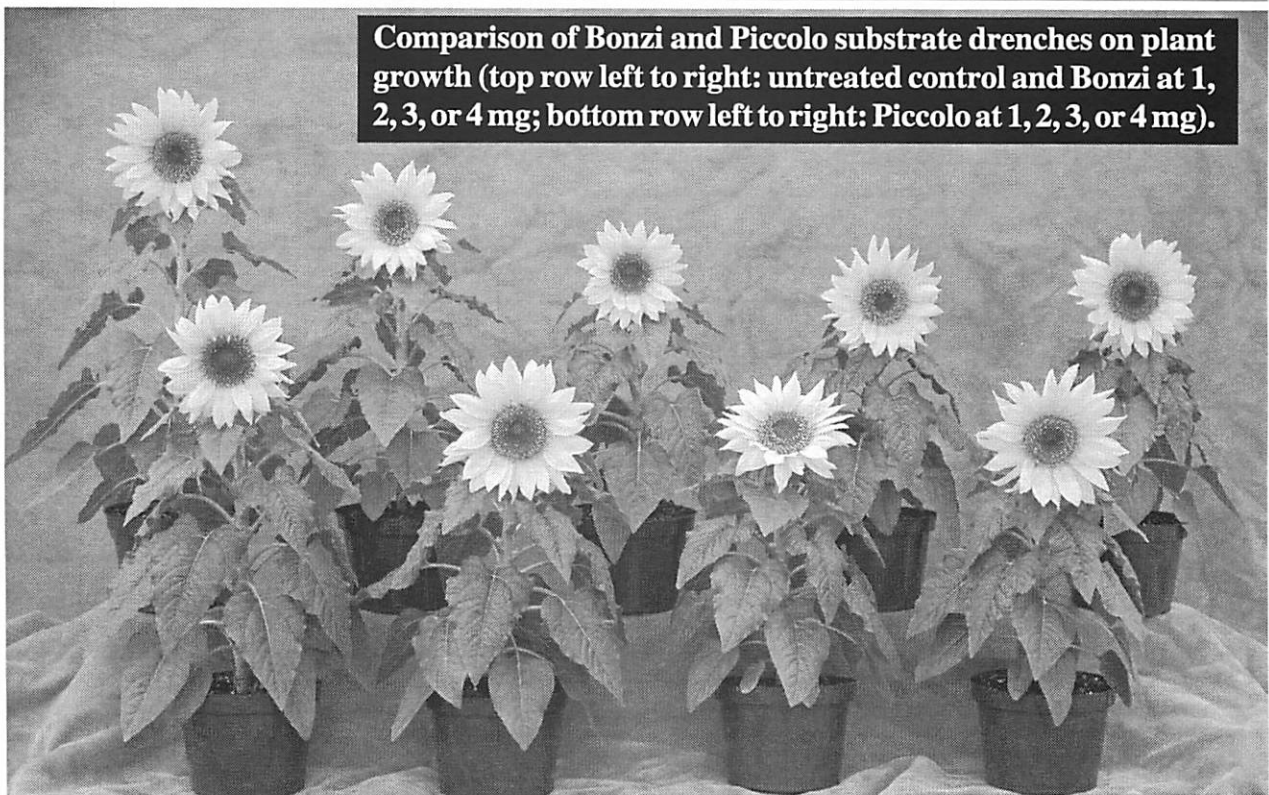
Pot Sunflower Substrate Drenches: Substrate drenches of Bonzi and Piccolo were compared for their efficacy on 'Pacino' pot sunflowers. Drench concentrations ranged from 1, 2, 3 and 4 mg of active ingredient per pot, plus an untreated control. Phytotoxicity was not observed with either formulation at the highest concentration of 4 mg. That was to be expected based on our earlier experiments with Bonzi.

Plant height and plant diameter were 29% and 23% smaller, respectively, with the application of 4 mg paclobutrazol as compared to the untreated control.

The degree of control with paclobutrazol substrate drenches was similar to previous studies conducted by Dr. Whipker. Flowering was not affected by paclobutrazol type or drench concentration. When comparing the same concentration, both paclobutrazols provided a similar degree of control of plant height and plant diameter. Based on these results it appears both Bonzi and Piccolo have similar efficacies as a substrate drench on 'Pacino' pot sunflowers.

Conclusions: In order to confirm what we saw visually, we conducted extensive statistical comparisons to determine if both chemicals did in fact control growth similarly. We found statistically at any given concentration applied, both chemicals provided a similar degree of control. This is consistent with results we also found with pot tulips and vegetative annuals, but not reported here. Growers will need to consider the efficacy of the formulation, price and service when selecting a PGR to apply.

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Comparison of Bonzi and Piccolo substrate drenches on plant growth (top row left to right: untreated control and Bonzi at 1, 2, 3, or 4 mg; bottom row left to right: Piccolo at 1, 2, 3, or 4 mg).