EFFICACY AND PHYTOTOXICITY OF FASCINATION (6-BENZYLADENINE AND GA4+GA7) ON A VARIETY OF ORNAMENTAL PLANTS

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ABSTRACT

The plant growth regulator product "Fascination" is a combination of 6-Benzyl Adenine (at 1.8% by weight) and Gibberellic Acid (GA_4+GA_7 at 1.8% by weight). During 2004 and 2005 we tested the effect of Fascination on a 37 distinct ornamental crops with the goal of developing independent efficacy and phytotoxicity data for new product label registration. The rate proposed for the product label consisted of 250 ppm a.i. so that this was the 1X rate used in all experiments. In addition to this rate and a control (0X) we also applied the product at half (0.5X, 125 ppm) and double (2X, 500 ppm) strength. In general, for each of the tested species and varieties, 36 plants were randomly chosen and individually tagged for treatment. The plants were grown in greenhouse and nursery settings where the experimentation was carried out using the standardized IR4 Fascination protocol (June 2004) which called for a 6-week time-frame for each experiment. The plants always received 2 foliar spray applications, one on day 0 and another on day 21. Phytotoxicity and efficacy measurements were taken at day 0, 21 and 42. Phytotoxicity evaluations were based on a numerical rating scale of 0 (no injury) to 10 (complete kill). The measurements also included plant height, width and a count of the numbers of shoots or branches per pot.

Fascination was not effective at inducing branching and also caused no phytotoxicity on the following plants: Alchemilla mollis 'Auslese', Campanula persicifolia 'Telham Beauty', Centaurea montana, Coreopsis grandiflora 'Baby Sun', Gaura lindheimeri 'Siskiyou Pink', Gazania linearis 'Colorado Gold', Gypsophila elegans 'Covent Garden', Hibiscus moscheutos 'Disco Belle Pink', Lamium maculatum 'Shell Pink', Lavandula angustifolia 'Munstead', Leucanthemum × superbum 'Snowlady', Monarda didyma 'Jacob Kline', Nepeta cataria, Penstemon sp. 'Red Rocks', Perovskia atriplicifolia, Rudbeckia fulgida 'Goldstrum', Sedum spurium, Solidago rugosa 'Fireworks', and Vinca 'Tall Rosea Mix'. Of these, Fascination was effective at generating longer flower stems (which could be beneficial in cut flower production): Rudbeckia, Penstemon, Campanula, Leucanthemum, Solidago, and Gaura. In the case of the last two, Fascination might also be useful to control flowering.

On the following plants Fascination caused no phytotoxicity and was effective at increasing branching at the 1X rate (250 ppm): Artemisia lactiflora 'Guizho', Hedera helix, Lobelia cardinalis, Phlox divaricata ssp. laphamii, Salvia leucantha, and Stachys byzantina 'Silver Carpet'. Some plant showed benefit from Fascination without phytotoxicity at rates other than 1X: Hypericum calycinum responded well at 125 ppm while Caryopteris clandonensis 'Longwood Blue', Salvia splendens, and Verbena canadensis 'Homestead Purple' resulted in improved branching at a rate of 500 ppm.

The following showed significant phytotoxicity when treated with Fascination: Aquilegia vulgaris plena 'Black Barlow', Astilbe taquetii, Gaillardia × grandiflora 'Summer Kiss', Iberis sempervirens 'Snowflake', Physostegia virginiana 'Vivid', Aster novae angliae 'Purple Dome', and Calendula officinalis 'Orange Mix.'

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