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Springs F & G

Crop Physiology: Growth Regulators

(094) Effect of Growth Regulators on Florescence of *Rhododendron agastum* Balf. et Smith

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One hundred miles of natural *Rhododendron* (Baili *Rhododendron*) in western Guizhou (China) attracted thousands of visitors during their spring flower season. To extend their flowering duration and bring more visitors to this natural wonder, growth regulators, GA₃, Ethephon, Daminozide, and 2,4-D, with various concentrations were sprayed on *Rhododendron agastum* Balf. et Smith (charming rhododendron) for one or five times since November. Plants received GA₃ at 200 and 400 mg·L⁻¹ flowered 10 and 14 days earlier, but no effect on the flowering duration. If sprayed GA₃ for five times, flower initiation were significantly earlier and flower duration was significantly extended. Ethephon did not have significant influence on the blossom. The combined applications of GA₃ and 2,4-D could promote the flowering duration for more than one week. The number of flowers increased as the GA₃ concentration went up and reached 140 flowers per plant at 400 mg/L. GA₃ promoted the growth and elongation of cells. To increase the number of flowers and extend the flowering period, GA₃ could be sprayed five times on the natural communities of *Rhododendron agastum* from November. The applications should improve florescence and better promote Baili *Rhododendron* as one of the popular tour destinations in Guizhou, China.

(095) Benzyladenine (6-BA) Promotes Branching of Herbaceous Perennials

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Benzyladenine, 6-BA (Configure, Fine Americas, Inc.), was applied as a foliar spray to *Gaillardia aristata* 'Gallo Yellow,' *Gaillardia lindheimeri* 'Siskiyou Pink,' *Geranium* 'Rozanne,' *Penstemon digitalis* 'Husker Red,' *Phlox paniculata* 'Laura,' *Veronica longifolia* 'Icicle,' and four *Echinacea* cultivars, Fragrant Angel, Merlot, Sombrero Hot Pink, and Tiki Torch. Plants were treated with 600 mg/L of 6-BA and compared to a control (using only water). The effects of these spray applications on height, number of branches, and phytotoxicity, were assessed at 0, 2, 4, 6, 8 and 10 weeks after treatment (WAT). The number of basal branches on treated *E.* 'Fragrant Angel,' 'Merlot,' and 'Tiki Torch' increased more than 69% at 4 WAT and beyond. Height was suppressed in treated *E.* 'Fragrant Angel' and *E.* 'Merlot' by more than 10% at 4 WAT. Treated *G. aristata* 'Gallo Yellow' plants had a 164% increase in the number of branches at 8 WAT. Treated *G.* 'Rozanne' plants had a 24% increase in the number of branches at 2 WAT. Treated *G. lindheimeri* 'Siskiyou Pink' plants had a 32% increase in the number of branches at 4 WAT. Treated *P. digitalis* 'Husker Red' plants had a 24% increase in the number of branches at 4 WAT and height was suppressed by 25% at 2 WAT. Treated *V. longifolia* 'Icicle' plants had a 118% increase in the number of branches at 2 WAT, after which this difference diminished. Plants that showed no response to 6-BA in terms of branching or height suppression were *E.* 'Sombrero Hot Pink,' and *P. paniculata* 'Laura.' Minor phytotoxicity was observed on all of the *Echinacea* cultivars and *P. digitalis* 'Husker Red' at 2 WAT but damage was insignificant at 3 WAT.

(096) Effects of Exogenous Abscisic Acid on Carotenoids and Fruit Quality in 'Micro-Tina' Tomatoes

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Tomatoes (*Lycopersicon esculentum* Mill.) are one of the most widely consumed vegetables. Tomatoes are studied extensively as models for fruit development and ripening research. 'Micro-Tina' tomatoes are a red fruited, dwarf cultivar with a compact growth habit, and may serve as a model crop for physiological and biochemical research. Abscisic acid (ABA) plays regulatory roles in plant growth and development, in seed dormancy, and plant stress. Recent studies have revealed physiological impacts in late stages of fruit development induced by increasing concentrations of ABA. Changes in ABA concentration, along with