

Improve Branching of Upright Sedums with PGRs

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When we talk about using plant growth regulators (PGRs) to improve branching of perennials, we get questions about the upright sedums. Some of our growers have given up on using *Sedum* liners, especially for the early spring production because they just can't get them to branch and fill out in the container. So in this e-Gro Alert, let's talk about using the branching compounds, Configure (benzyladenine, BA, Fine Americas, Inc.) and Augeo (dikegulac sodium, OHP Solutions, Inc.), on upright sedum.

In our research on using Configure and/or Augeo during production of *Sedum* 'Autumn Joy', we looked at applications during liner production as well as the effects of post-transplant or multiple applications on the finished plants. We started with unrooted cuttings in 72-size cells, rooted under mist for 18 days at which time the roots were visible on all sides of the root ball but it was not intact. The day after removal from mist, the liners were treated with the PGRs. Along with an untreated control, we

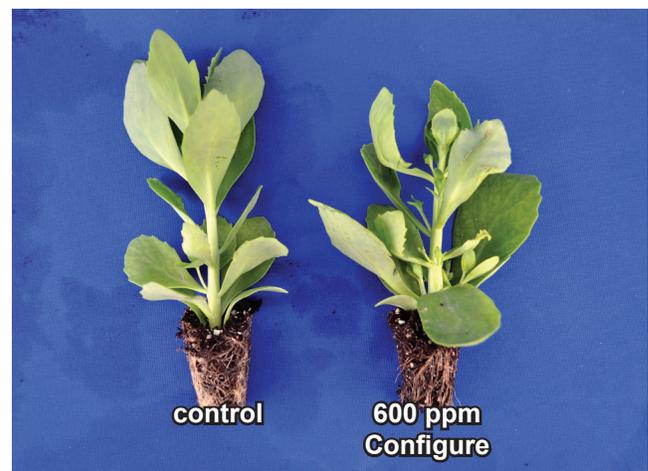


Figure 1. *Sedum* 'Autumn Joy' treated with a foliar spray at liner: control (left), 600 ppm Configure. Photo at three weeks after treatment.

applied 600 ppm Configure, Augeo at rates ranging from 400 to 1600 ppm and a tank mix of 600 ppm Configure and 400 ppm Augeo.



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Configure on liners. So, let’s talk about these treatments individually. First, *Sedum* ‘Autumn Joy’ was very responsive to 600 ppm Configure with treated liners (12.8 branches) having four times the number of lateral branches counted on untreated controls (2.8 branches) at 3 weeks after the initial treatment (WAIT, Figure 1). These liners were also a little shorter than control plants but had a greater shoot dry weight. So the Configure-treated liners were more well-branched, and had more mass, than control liners.

Configure on finished plants. These *Sedum* liners were then potted into quart pots and grown on for another 3 weeks. Configure was applied to some of these plants for the first time about 5 days post-transplant, and applied again to some of the plants previously treated at the liner stage to provide a multiple application. So in this grow out phase, we had plants that were treated with 600 ppm Configure once in the liner stage, once at 5 days post-transplant, or both in the liner and post-transplant stages. Finished plants (in bud) were evaluated for branching and growth at 6 WAIT. A single Configure application at the liner stage did not increase the numbers of leaders (defined as shoots with their own lateral branches) or lateral branches on the finished plants; but the single application post-transplant resulted in four times the numbers of leaders and lateral branches as found on control plants (Figure 2a). Configure applied at both times (Figure 2b) resulted in the same increases in branching but the resulting plants had better form and uniformity than those where Configure was only applied post-transplant.

Note: You might need some growth control with these plants, especially if you try a quart-pot program, but upright sedums are quite responsive to spray applications of paclobutrazol in the 80 to 100 ppm range in the South (adjust rates for the northern U.S.).



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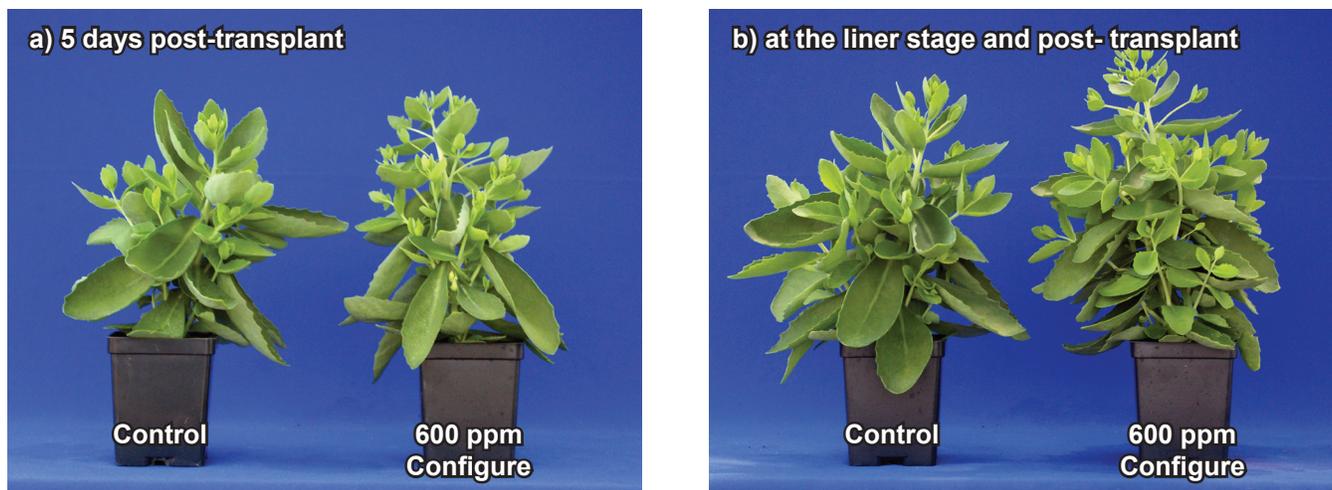


Figure 2. *Sedum* 'Autumn Joy' control (left) or treated with 600 ppm Configure (right) applied as a foliar spray: a) at 5 days post-transplant or b) at both the liner stage and post-transplant. Photos at six weeks after initial treatment.

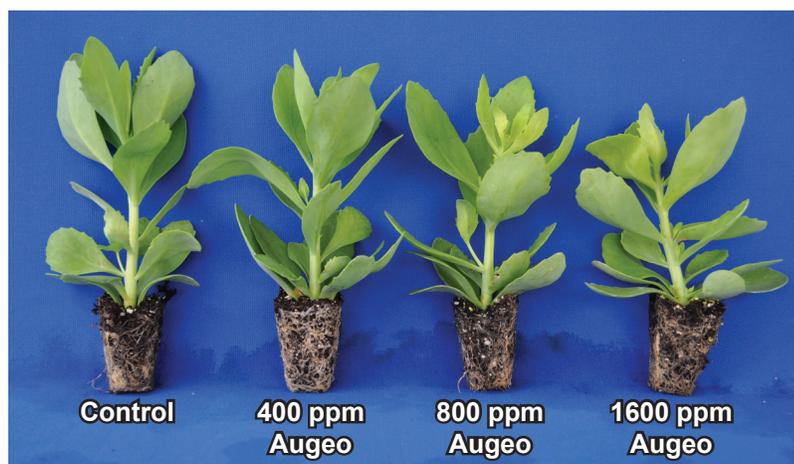


Figure 3. *Sedum* 'Autumn Joy' liners treated with one foliar spray at liner stage (left to right): control; Augeo at 400, 800, or 1600 ppm. Photo at three weeks after treatment.

Augeo on liners. While all Augeo applications increased the number of branches on *Sedum* 'Autumn Joy' we will only discuss 400 ppm Augeo because higher concentrations resulted in greater chlorosis, and in some cases stunting, of the finished plants. Augeo at 400 ppm doubled the number of branches on *Sedum* liners compared to control liners at 3 WAIT without reducing growth or causing chlorosis of the leaves (Figure 3).

Augeo on finished plants. Using the same protocol as described above for Configure, the finished plants from a single Augeo application

at either the liner or post-transplant stage were not different from untreated controls at 6 WAIT. However, when both applications of 400 ppm Augeo were made, finished plants had twice as many leaders and nearly three times as many branches as untreated controls at 6 WAIT (Figure 4). Note: finished plants from both applications of Augeo were slightly lighter in color at 6 WAIT than controls. So make your Augeo treatments as early as possible in the crop cycle to allow time for plants to green up.

Tank mix Configure and Augeo.

The tank mix had effects nearly identical to those noted with Configure alone during liner production. However, on finished plants at 6 WAIT, two applications of the tank mix resulted in twice the number of leaders and nearly twice the number of branches as we counted on plants treated with Configure alone at both application times (See Figure 4). Many of these branches were shorter (all laterals greater than 2 mm in length were counted) than those counted on plants treated with Configure alone. We did not see these results with other crops so we are not ready to conclude that these are synergistic effects.

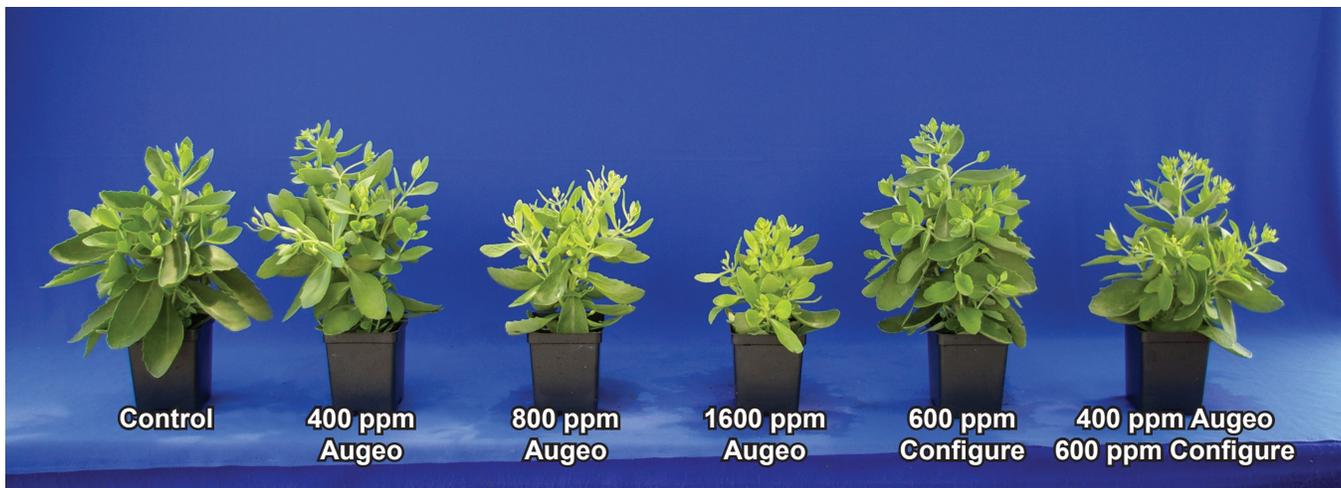


Figure 4. *Sedum* 'Autumn Joy' treated twice with a foliar spray, once at liner stage and again at 5 days after potting (left to right): control; Augeo at 400, 800, or 1600 ppm; 600 ppm Configure; tank mix 400 ppm Augeo + 600 ppm Configure. Photo at six weeks after the initial treatment.

Key Points for for Increasing Branching of Upright Sedums

- Make the first application of either 600 ppm Configure or 400 ppm Augeo in the liner tray.
 - Liners should be actively growing with ~2 to 4 leaves at the time of spray applications.
- Repeat application within one week after potting. Early application of Augeo is critical to allow any time necessary for recovery from chlorosis.
- Use the recommended spray application volume (1 gallon per 200 square feet) to thoroughly wet leaves.
 - For Configure, good coverage is critical since BA is primarily taken up by the leaves and does not readily translocate out of the leaves to other plant parts. Add a labeled surfactant to your spray solution.
 - For Augeo, good coverage is recommended. Do NOT use additional surfactants.
- Apply PGR foliar sprays when plants are under low stress conditions.
 - Plants should ALWAYS be treated with PGRs under low stress conditions, but products like Configure are absorbed best under low drying conditions, e.g., early or late in the day, cloudy days, or under high humidity. Do not irrigate overhead within four hours of Configure application.
 - Products like Augeo applied to plants under stress result in greater phytotoxicity symptoms.
- As with all PGRs keep records of your applications and results.
 - Always keep notes to aid in improving your results with subsequent crops.