

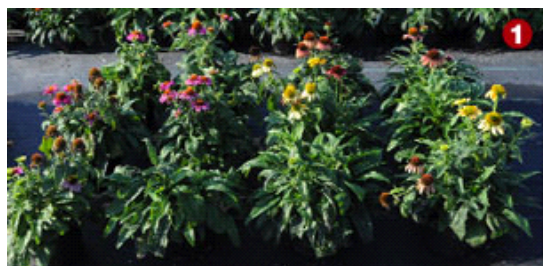
# GROWERTALKS

## Culture Notes

6/27/2014

### Recipe for Fall-Finish Echinacea Production

Bin Liu



How can high-quality flowering echinacea plants be produced to capture fall sales opportunities? This was a question the culture team at Kieft Seed asked in 2012 as we developed our Mum Pals program—a strategy to capture the expanding fall market.



That year, our initial trial results showed plants sown in early April without short-day treatment produced little flowering and no uniformity (Picture 1). However, when a 6-week, 10-hour short-day treatment was applied after transplant, the same crop produced uniform flowers and blooms in bright colors for September sales at retail (Picture 2).

That led to more questions: Can short day treatments be applied to large liners? In addition, can longer daylength, such as 11 or 12 hours, function the same as 10 hours? (In other words, can growers use 11 hours or 12 hours for the short-day treatment?) We were keen to find out.

*Picture 1: Fall flowering echinacea without short-day treatment.*

*Picture 2: Fall flowering echinacea with 6-week short-day treatment.*

*Picture 3: At week 20, echinacea plug or liner reached 2-full-unfolding-leaf stage.*

*Picture 4: Echinacea liners or packs at end of SD and ND treatments at week 26.*

*Picture 5: Cheyenne Spirit flowering plants from different container sizes with different SD treatments at week 36.*

### Material and Methods

To conduct our trials and answer our questions, we used the PowWow Wild Berry and Cheyenne Spirit varieties of echinacea. We sowed the seed during Week 16 using 288, 72 and 50 plug/liner sizes. The 288 plugs were transplanted to 804 and 1801 packs during week 20, so the container sizes for the short-day treatment were 72, 50, 804 and 1801.

We applied a 6-week short-day treatment from week 20 to week 26 at 10-, 11- and 12-hour limits. We also had a Natural Day (ND) treatment as control. After the treatment, we transplanted to 8 x 5-in. mum pots with 3 plants per pot (ppp) for outdoor production. There was no PGR applied during either plug/liner or finishing production.



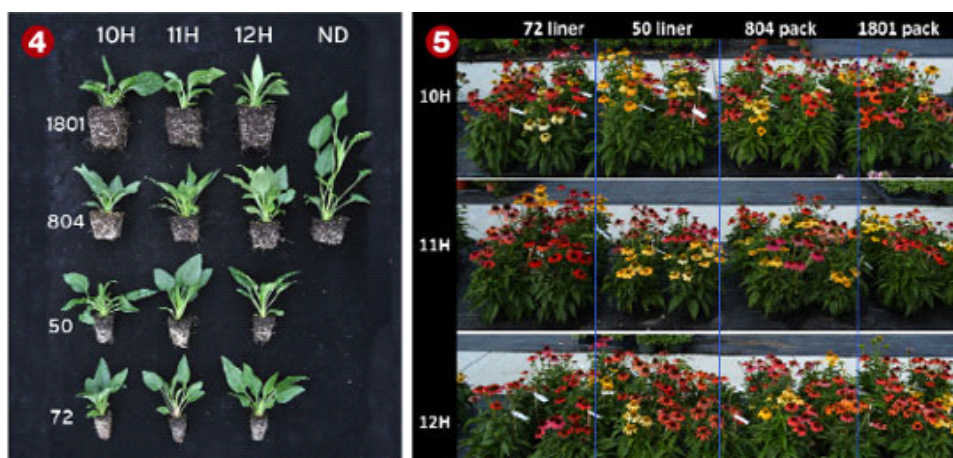
## Results

Picture 3 shows the start of the short day treatment at 2-full-unfolded-true-leaf stage or 288 plug ready-to-transplant stage.

Picture 4 shows plants at the end of the short-day treatment. Plants grown under ND became noticeably stretched. Plants

with the short-day treatment were very compact.

In results after 10 weeks from transplant, the Natural Day plants showed flowers, but there was variability in fullness and plant vigor (Picture 2). For the short-day treated plants, there were high amounts of color in all the pots, all input sizes—and they were ready to sell (Picture 5)!



It was observed that the 1801 packs were slightly more full and slightly more uniform. We believe this is due to the larger volume of soil the plant was in.

## Summary

The 6-week short-day treatment, starting at 2-full-unfolded true-leaf stage, significantly improved PowWow and Cheyenne Spirit Echinacea flowering uniformity. There wasn't a significant difference in results among the short-day treatment from 10 hours to 12 hours, therefore 10-, 11- or 12-hour short-day treatments are all suitable. In addition, the short-day treatment can be applied to various sizes (72, 50, 804 or 1801). This provides versatility for growers depending upon space and resources.

## Conclusion

PowWow Wild Berry and Cheyenne Spirit Echinacea can be successfully produced as a fall crop to reach those key, cool-season decorating and gardening markets.

The key points of success:

- Six-weeks short-day treatment starting at 2-full-unfolded-true leaf stage
- Daylength for short-day treatment can be from 10 to 12 hours
- Short-day treatment can be applied to 72 to 50 liner, pack or finished container. **GT**

---

*Bin Liu is Culture Research Manager for PanAmerican Seed and Kieft Seed.*