crop cultivation

Ready, Set, Go with Winter Osteospermum Production

If your conditions are right, you can produce this high-margin crop throughout the winter.

By Bob Shabot

Over the past few years, we at the University of Connecticut have been cropping osteospermum as a novelty winter crop, and results have been good in both crop quality and customer acceptance and satisfaction. Since year-round cuttings are now widely available and with the recent introduction of dwarf cultivars in a widening array of colors, the possibilities for winter pot production are better than ever!

The success of an osteospermum pot program or schedule depends on a number of key visual indicators that are easily measured and observed during various crop stages. Our ongoing research indicates that by meeting these targets, a great osteospermum crop can be produced almost by the numbers.

THE PRODUCTION REGIME

For winter production, cropping usually starts October 1 and runs through March. This works well in Connecticut since outside tempera-

Figure 1. Growth sequence of plants at 50° F for bud initiation and development. (Photos courtesy of Bob Shabot)

Figure 2. Finishing the crop at 50° F vs. 60° F and its effect on flower opening.

Figure 3. A nice, florist-quality winter pot of osteospermum 'Sonja' finished in 15 weeks.

tures are low enough to allow for the low greenhouse day/night temperatures needed for bud initiation and development.

In our experiments, plants were established using three or four plugs per 6½-inch azalea pot (with three plugs per pot producing a good mass market item and four plugs per pot making an excellent retail florist product). Containers were filled with a coarse, well-drained bag mix such as Metro mix 510 or Fafard 3-B, and the planted pots were maintained at a night temperature of 62-65° F. The initial watering included a preventive fungicidal drench, since root and crown rots may be a problem early in the crop.

We fertilized the crop with 3- to 4-month slow-release pellets by top dressing each pot with ½ teaspoon of 13-13-13 after planting. After watering in, the plants were fertigated weekly. The first week we used 150 ppm nitrogen and 300 ppm nitrogen every week thereafter. All fertigation was derived from a stock of six parts calcium nitrate and four parts potassium nitrate (equivalent to a 14.5-0-17.6 fertilizer with 120-0 calcium). As an alternative, a peat lite fertilizer special of 20-10-20 at the above weekly rates (150 ppm nitrogen the first week and 300 ppm each week thereafter) will do the trick as well.

Monitoring of pH and soluble salts was done monthly using the pour thru method, and we determined that the best crop performance was achieved at a pH of 5.5-6.5 with soluble salts at levels of 25-100 ppm (equivalent to Spurway extractable).

All plants were pinched to induce better branching. Pinching was accomplished when plants were approximately 2-3 inches tall, usually one week after potting, leaving 8-12 leaves per plant. After pinching, lateral shoot development requires about 2½ weeks to reach a length of approximately 1-1½ inches. When most breaks reach 1-1½ inches in length, the plants were moved to a 50° F (night temperature) greenhouse for bud initiation and development. During this growth stage, the daytime venting set point in the greenhouse should be 60° F, which will allow for an inside air temperature of 60-66° F, depending ➧

CROP OUTLINE

Production Sequence	Production Time (weeks)	Night Temperature Setpoint (°F)	Day Venting Setpoint (°F)
Pot to pinch	1	62-65	75
Laterals 1-1½ inches long	2½	62-65	75
Bud Initiation and Development	6-8	50	60
50° F Flowering Option	5	50	60
60° F Flowering Option	3	60-62	70-75

on outside air temperature. High day temperatures (70° F or greater) during early bud initiation will delay bud development and increase crop time. To avoid this delay, try to have bud initiation complete by the first week of March; this will allow you to take advantage of naturally cool temperatures without cooling your greenhouse.

Following 6-8 weeks at the 50° F regime, flower buds are typically ⅛-¼ inches in diameter. (This is variety dependent, with dwarf types requiring less time and some varieties producing larger or smaller flowers.) At this point, evaluate the need for a PGR application. I find that when plants reach 6 inches in height, or close to it, they should be treated with PGRs. Plants 4 inches or smaller will finish at a reasonable height without PGR application. Our PGR of choice has been a tank mix of 1,500 ppm of both Cycocel and B-Nine applied as a foliar spray to the point of run-off (approximately 1 gal. of solution per 200 sq.ft. of bench area). This mix has proven extremely effective in controlling late stretch of both stem internodes and flower peduncles, especially for crops produced during late March when inside temperatures can reach or surpass 70° F on bright spring days.

Finishing the crop can proceed once the terminal flower buds have reached the ⅛- to ¼-inch size. Two options are available. Option 1: Continue to grow the plants at 50° F night and 60° F day temperatures; thereafter, the first flowers will open in approximately four weeks with one half of the flowers open within five weeks. Option 2: Raise the night temperature to 60-62° F and the day venting set point to 70-75° F. Using the second scenario, first flowers will open in approximately two weeks, with one half of the flowers open within three weeks. This latter option results in a savings of two weeks in crop time compared to option 1. Regardless of the option followed, crop quality was comparable. GPN

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