Success with SunPatiens

The relatively easy-to-grow SunPatiens do have a few nuances that are important to understand for consistent success

By James E. Faust, Jeremy Crook and Kelly Lewis

SunPatiens are growing in market visibility due to several enhancements over traditional New Guinea impatiens:

1. They have a fast production schedule.
2. They can be grown cooler.
3. Their landscape performance in both sun and heat is very good.

SunPatiens are a relatively easy crop to grow; however, like all crops, they do have a few nuances that are important to understand in order to have consistent success. The keys to success include temperature manipulation to fine-tune your production schedule along with height and leaf size management through the use of water restriction and plant growth regulators (PGRs).

Experiments were carried out to provide the timing data needed to make this a programmable crop. This article will provide an overview of the requirements for crop scheduling and for achieving the desired flower count while properly managing plant height and leaf size.

Temperature Management

In this experiment conducted at Clemson University, unrooted cuttings of 19 varieties of SunPatiens were used. The varieties are divided into three forms: Compact, Spreading and Vigorous. The cuttings were stuck directly into 1-gallon containers (1 URC/pot). One week after sticking the cuttings, the containers were moved from the mist propagation environment to three different greenhouses set to achieve average daily temperatures of 60°, 70° or 80° F. The actual day and night temperature targets were 65/55° F, 75/65° F and 85/75° F, respectively. Pinching is not

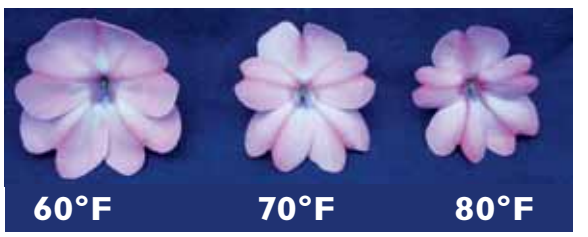

Figure 1: The effect of average daily temperature on the flower size of Compact Blush Pink.

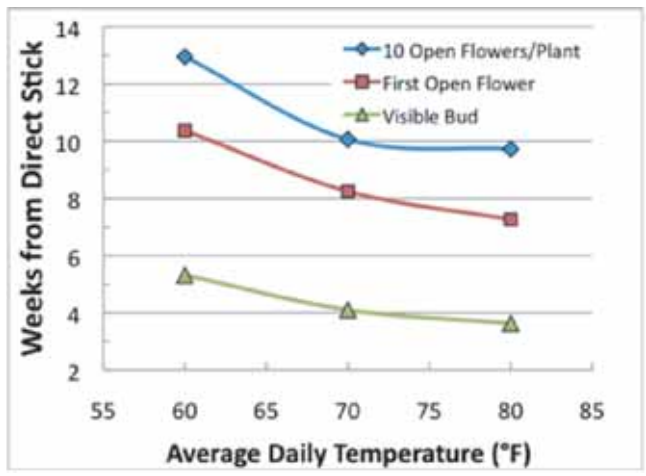

Figure 2: The effect of average daily temperature on the number of weeks to visible bud, first open flower and 10 flowers per plant.

Figure 3: The effect of temperature on Compact White height and flowering.

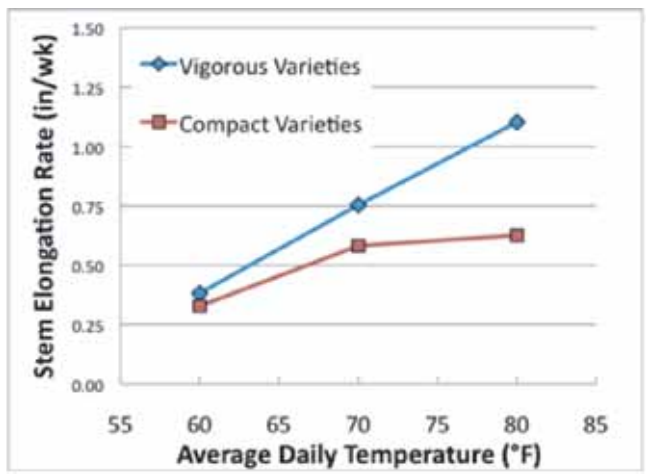

Figure 4: The effect of average daily temperature on the stem elongation rate of Compact and Vigorous varieties.

required as this will just delay flowering. Plant height was measured weekly and flower development was recorded from visible bud through 10 open flowers per plant.

Flower size decreased as temperature increased (Figure 1). In fact, SunPatiens flower size at 60° F can resemble the size of New Guinea impatiens flowers. However, time to flower increased as temperature decreased. Figure 2 shows that time to 10 open flowers takes about 13 weeks at 60° F, while at 70° or 80° F the time required is approximately 10 weeks. Toward the end of our experiment we weren't able to achieve 60° F consistently, so the temperatures in the last several weeks were warmer than 60° F. Nonetheless, the SunPatiens growth under cooler temperatures was better than one would normally expect to achieve with New Guinea impatiens.

While most growers are not going to try to grow SunPatiens at 60° F, this experiment does demonstrate that SunPatiens have a normal appearance at a fairly wide temperature tolerance (Figure 3). This imatiens is relatively cool-temperature tolerant, i.e., no damage or poor leaf expansion was observed at 55°F nights, so average daily temperatures in the low 60s can be used to slow development or potentially save on fuel costs. Landscape performance in cool locations, such as Seattle, also demonstrates their relatively good cool temperature tolerance.

Similarly, an average daily temperature of 80° F is excessive for most plants, but this experiment demonstrated that SunPatiens are relatively heat tolerant, as can also be observed in their landscape performance in the summer in the southern United States. The bottom line is the standard production temperatures are

likely to range from 65° to 75° F, but SunPatiens will tolerate a wide range of non-optimal temperatures, which helps contribute to their functionality in diverse climates across North America.

Height & Leaf Size Management

In terms of stem elongation and vigor, SunPatiens increased in height at a rate of approximately 0.5 to 1.0 inch per week. Figure 4 shows both Compact and Vigorous varieties grown at relatively cool temperatures (60° F) will elongate similarly; however, as temperatures increased up to 80° F, the Vigorous varieties continued to increase in height at a considerably faster rate than the Compact varieties.

Compact and Spreading varieties do not have the same rapid stem elongation that is observed on the Vigorous varieties; however, excessively large leaves can be a challenge on all varieties. Therefore, good water and PGR management practices need to be employed for all varieties in order to achieve the desired final plant appearance.

Water restriction and PGRs are tools that growers need to use properly on SunPatiens. Dr. Catherine Ku at the Ecke Ranch has done some nice experimentation to identify the key strategies. First, PGRs are most useful early in the crop life. Light Bonzi sprays work well. These sprays can range from 2 to 10 ppm and should be made around week 3 or 4 after sticking unrooted cuttings. The Bonzi also can be tank-mixed with 2,500 ppm B-Nine for additional plant height control. Vigor does vary even within the Compact series, so experimentation is necessary by all growers to properly fine-tune their PGR practices.

Water restriction is a useful technique for managing leaf expansion and plant height. Water restriction is defined as reducing the volume of water application by 50 percent, but not altering the frequency of irrigation. Thus, the container does not oscillate from being saturated to being very dry. Water restricted plants are not soaked at each irrigation but are wetted in a fashion that resembles bedding plant production rather than potted plant production.

The timing of water restriction can impact flowering. For example, water restriction performed during the first month of the crop schedule caused a delay in flowering, while water restriction performed during the final portion of the crop schedule (Week 5+) did not delay flowering. Therefore, the preferred method of managing height would be to use PGRs early in the crop cycle and use water restriction later in the crop cycle. Water restriction applied throughout the crop cycle plus PGRs can result in excessively short plants and delayed flowering.

Additionally, SunPatiens have similar nutritional requirements compared to New Guinea impatiens, which is to say they really need a minimal amount of fertilizer. One application of 200-ppm nitrogen made every few weeks or so provides plenty of nutrition. Frequent application of nitrogen will contribute to excessively large leaves.

SunPatiens elongate aggressively when tightly spaced; therefore, it is critical to space containers on a timely basis. In general, once leaves from neighboring plants begin to overlap, which is termed "canopy closure," expect to see a rapid increase in the rate of stem elongation.

In summary, SunPatiens can be programmed for accurate crop scheduling and with a few basic management practices they can be finished with good flower counts in a very reasonable crop time. g

Figure 5. The effect of PGRs and water restriction on 'Compact Magenta' – (from left to right) control (no PGR, no water restriction); water restriction starting week 5; Bonzi (10 ppm) + B-Nine (2,500 ppm) and no water restriction; and Bonzi (10 ppm) + B-Nine (2,500 ppm) + water restriction starting week 5. (Photo courtesy of Dr. Catherine Ku, Ecke Ranch)

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