

Tips on Finishing the 1993 Easter Lily Crop

Richard J. McAvoy
Assistant Professor and Extension Specialist
Greenhouse Crops.

Once the lily crop reaches the visible bud stage and the end is in sight, growers should pay careful attention to bud development and temperature in order to finish the crop without sacrificing quality. Visible bud for Easter 1993 should occur around February 28 (see 1993 Easter Lily Schedule in last issue of the CGNL). Thirty-five days remain from this date until the week before Easter when sales begin.

While the leaf counting technique is useful for timing the lily crop during the early stages of development, growers must track bud development during the later stages of development to bring the crop in on time for Easter. Ideally, crop development will be close enough to the desired schedule by the time the visible bud stage occurs, so that it can be forced to flower with temperatures somewhere between 55° and 70°F. If forcing temperatures outside of this range are required, crop quality may suffer, the cost of forcing may increase (if higher temperatures are required) or the desired forcing temperatures may be difficult to achieve and lily development may stall (if lower temperatures are necessary). At an average temperature of 55°F, lilies will take about 42 days to reach flowering from visible bud. At each 5°F increase in average temperature, in the 55° to 75°F range, the time from visible bud to flowering will decrease by about four days. For example, at 65°F, this interval takes about 34 days, and at 75°F, about 27 days. As temperature increases an additional 10°F, to 85°F, the process is shorter still, but only by a total of three days.

To estimate the time remaining until lilies in bud reach flowering, measure the current bud length and, using the information in Table 1, find this bud length in the column under the average temperature you are using. Follow the row to the left

to find the number of days remaining until flowering. If this time is too short, use a lower average daily temperature. If the interval is too long, use a higher daily average temperature.

<i>Days to flower</i>	<i>Average daily temperature (°F)</i>			
	<i>60</i>	<i>65</i>	<i>70</i>	<i>75</i>
	<i>Bud length (inches)</i>			
20	1 3/8	1 1/8	1	7/8
15	2 3/8	2 1/8	1 3/4	1 1/2
11	3 1/8	2 7/8	2 1/2	2 1/8
9	3 3/4	3 1/2	3 1/8	2 5/8
7	4 3/8	4 1/8	3 7/8	3 3/8
5	4 7/8	4 3/4	4 1/2	4 1/4
4	5 1/4	5 1/8	4 7/8	4 5/8
3	5 1/2	5 3/8	5 1/4	5
2	5 7/8	5 3/4	5 5/8	5 1/2
1	6 1/8	6 1/16	5 15/16	5 7/8

Apply fertilizer until the week before sale. Unlike poinsettias which suffer a loss of post-harvest quality if fertilized during the final stages of flower development, lily postharvest quality remains high with continuous feed. However, if soluble salts are high in the consumer environment and lilies are under-watered, a problem can develop. For this reason, use clear water during the final week of forcing.

Once lily buds reach the puffy white stage of development, the plants must be stored under cool, dark conditions to delay further flower development. Move plants immediately to a dark cooler and store at 34 to 40°F. If light is used in storage, lilies will stretch. Under ideal circumstances, grower should try to time the crop so that lilies require as little cool storage as possible, preferably one week or less.

Within a crop, Easter lily development will be quite variable, more so than with other crops, such as poinsettia. Typically, 5% to 15% of the crop will come into flower significantly earlier than the average flowering date for the crop as a whole. These plants will require cool storage, possibly for several weeks, to remain viable for Easter sales.

When the time required in cool storage increases beyond one week, a number of undesirable problems may arise. After

three weeks of cool storage, many lily buds will fail to open, leaf yellowing (chlorosis) will increase, the incidence of *Botrytis* will increase (see the *1993 Easter Lily Schedule* in CGNL #170 for *Botrytis* control measures), the shelf life of flowers will decrease by as much as 25% and susceptibility to physiological wilt and bud sunburn, upon removal from cool storage, will increase. To prevent physiological wilt, place lilies in a cool environment and do not expose to direct sun upon removal from the cooler. Removing lilies from the cooler at the end of the day, when light and temperature levels are low, will allow time for the lilies to gradually warm up to the new environment.

Lilies ship best when buds are still closed. Sleeve and box lilies one to three days before buds open. If buds are already open, remove anthers before sleeving. *Botrytis* is a greater problem when lilies are shipped in plastic sleeves than in paper sleeves. Condensation on the plastic surface is the cause of this problem.

In summary, because of the complex and variable nature of this crop, proper timing, careful monitoring of crop development and the ability to both force and delay lily development are essential elements of lily crop production. Use the information in this article to help time final crop development in 1993.

