

IS THERE A LILY TO TAKE THE PLACE OF 'ACE' OR 'NELLIE WHITE'?

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Easter lily growers have been hoping for a long time that the perfect lily would be available to them. That perfect lily would grow vigorously but never get too tall. The plant would be covered with flowers at the ideal stage when sold, without any need to move plants to cool or hot greenhouses to slow down or speed up flowering. Foliage would be abundant, dark green, attractive, with no evidence of virus, leaf scorch, tip burn or nutrient deficiencies or toxicities. No pathogen would attack the roots and aphids would have no appetite for the leaves.

We don't believe we saw such a specimen in 1992 as we evaluated seven selections and two named cultivars.

Bulbs were received from the Easter Lily Research Foundation and planted immediately (October 24, 1991), in Fafard Mix #4. A Truban drench was applied after the bulbs were potted. Pots were placed in the greenhouse at a night temperature of 63°F, and were moved to a 38°F cooler on November 14. They remained there

until December 30, when they were forced at a 62° night, 70° day temperature. Plants were grown in a glasshouse with no light reduction. They were fertilized either with a combination of calcium nitrate : potassium nitrate or 20-10-20, at weekly intervals. A Subdue application was made on March 17 but insecticides weren't needed or used. No growth regulator was used and no effort was made to control plant height with negative DIF or with cool temperatures during the first two hours of light each morning. Plants were not moved to control timing. Plant heights were measured and recorded on February 18, March 10, and March 31 and when the first flower was open on each plant. Dates of shoot emergence and first open flower were recorded. Flowers and buds were also counted.

At least two bulb sizes were received for each entry. Numbered selection 77-126 came in four bulb sizes and there were three sizes for 83-41 and 255-3. Two bulb sizes of both 'Ace' and 'Nellie White' were used as commercial controls.

Results and Discussion

Data revealing some growth and flowering characteristics of the selections and cultivars are shown in Table 1. Pictures of some entries are shown in Figures 1, 2, and 3. These plants were representative of each selection. 'Ace' and 'Nellie White' plants are shown in Figure 1, so the reader can compare the established cultivars with the selections.

Excessive plant height would have been more of a problem with 'Ace' and 'Nellie White' than for most of the numbered selections. Flowering was delayed with the selection 5301, as plants from either bulb size did not flower until April 18th and 20th. Number of flowers was influenced by bulb size on 'Ace', 77-126, 83-34, 86-106, 255-3, and 5301. More concrete data on the relationship between bulb size and floriferousness is being developed, based on a telephone conversation the senior author had recently with Rob Miller, Dahlstrom and Watt Bulb Farms, Inc., Smith River, CA. Rob indicated that a minimum of four flowers is expected by



Figure 1. Left, 'Ace' (8 1/2-9 1/2); right, 'Nellie White' (7 1/2-8 1/2).



Figure 2. Two numbered selections in the 1992 trials: left, 77-126 ($8-8\frac{1}{2}$); middle, 82-111 ($7\frac{1}{2}-8\frac{1}{2}$); right, 82-111 ($8\frac{1}{2}-9\frac{1}{2}$).

chain stores, while the requirement for retail florist shops is at least 5 or 6 flowers. Only the smallest bulbs of selection 77-126 resulted in a bud count less than 4.

The substrate received fungicide drenches on October 24 and again on March 17, no disease organisms were ever encountered, so no comments can be made about disease susceptibility for the named cultivars and selections. No insects were detected on any entry, either.

It is not yet known if any of the numbered selections will prove to be superior to 'Ace' or 'Nellie White'. The selections were evaluated at several sites in the United States and any decisions will be based on national performance. Readers should note that the lilies in this evaluation were given the Controlled Temperature Forcing (CTF) treatment and were not case-cooled. Faster flowering, taller plants with fewer flowers might have been produced if the bulbs had been case-cooled but that is just conjecture on our part.

'Nellie White' bulbs used in a growth regulator study conducted this spring were case-cooled and the control plants were about 20 inches tall, flowered by April 2, and there were approximately 5 flowers per plant.

In preparation for the 1993 Easter season it would be prudent for readers to obtain and read the new publication, "Easter and Hybrid Lily Production", written by William B. Miller at Clemson University. Bill grew up on an Easter lily bulb farm in Smith River, California and has devoted much of his academic career to conducting research on Easter lilies. Information for ordering this fifth volume in the Timber Press Growers' Handbook Series was given in the February 1992 issue of the Bulletin.

The authors wish to acknowledge the Easter Lily Research Foundation for sending bulbs for the evaluation, to Fafard for contributing the potting medium and to Grace/Sierra for donating some of the fertilizer. Thanks also are extended to Mark Hardy, greenhouse staff, for his diligent attention to the crop.

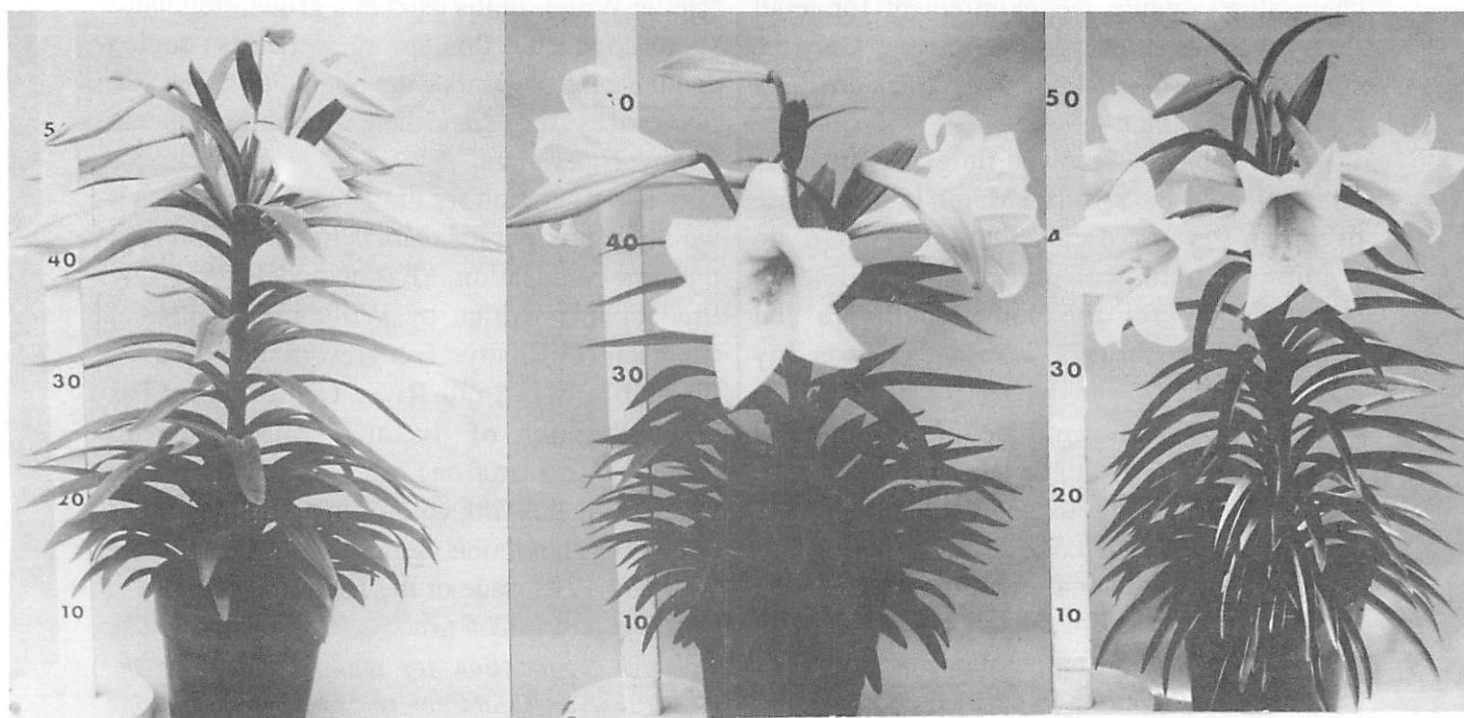
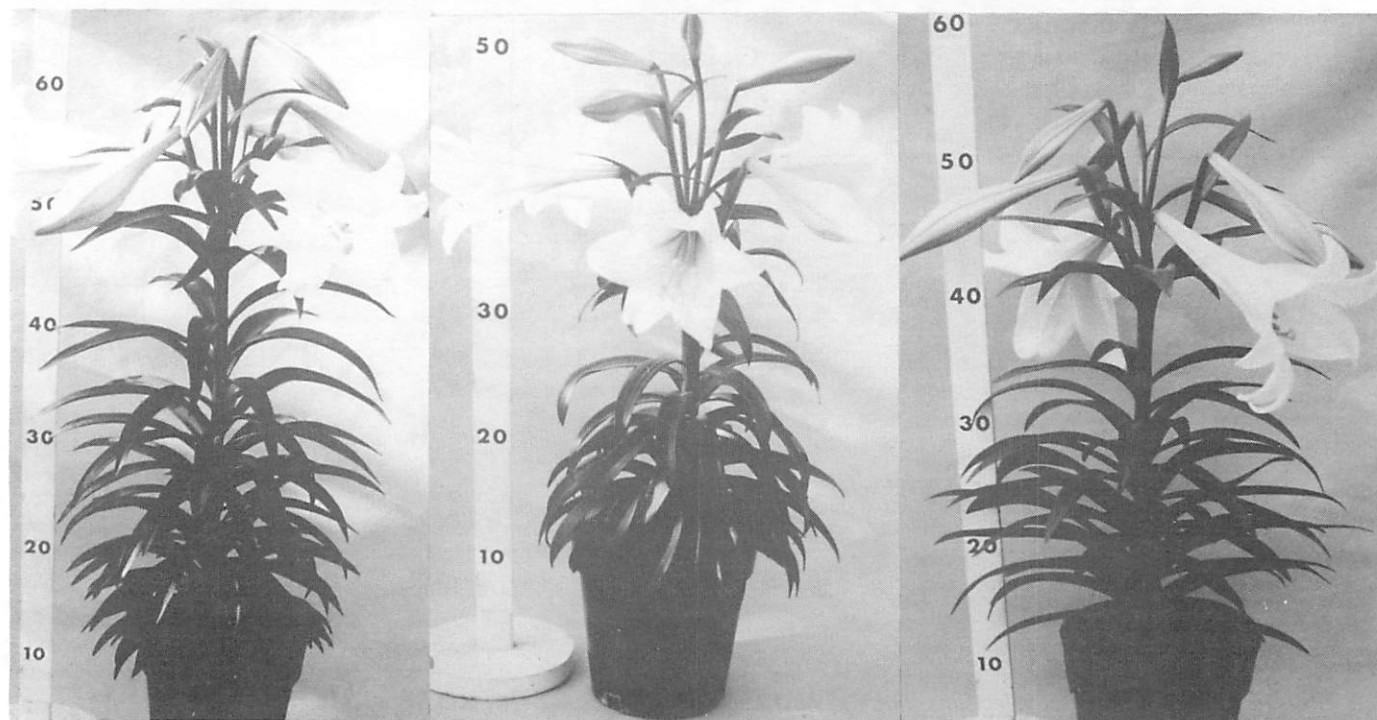


Figure 3. More numbered selections: Top: left, 83-34 ($9\frac{1}{2}+$); middle, 83-41 ($7-8\frac{1}{2}$); right, 86-106 ($8\frac{1}{2}-9\frac{1}{2}$); Bottom: left, 255-3 ($6\frac{1}{2}-7\frac{1}{2}$); middle, 5301 ($7\frac{1}{2}-8\frac{1}{2}$); right, 5301 ($8\frac{1}{2}-9\frac{1}{2}$). Note wide foliage on 5301. The measuring stick is in centimeters. Zero is even with the base of the pot (1" = 2.5 cm).

Table 1. Growth and flowering of nine Easter lily selections or cultivars in 1992. Trials conducted at North Carolina State University, Raleigh.

Selection	Bulb Size (inches circumference)	Plant height (inches)				Dates of		Number of flower buds
		2/18	3/10	3/31	Final	Shoot emergence	1st open flower	
77-126	7 - 7 1/2	5	6	11	11	November 25	April 7	3.5
	7 1/2 - 8 1/2	5	7	12	15	December 6	April 8	4.0
	8 - 8 1/2	4	7	12	15	January 5	April 7	6.0
	8 3/4 - 9 1/2	5	8	14	16	December 10	April 8	5.5
82-111	7 1/2 - 8 1/2	4	8	13	14	December 31	April 3	6.0
	8 1/2 - 9 1/2	5	9	13	14	December 15	March 31	5.5
83-34	7 1/2 - 8 1/2	5	9	15	16	November 13	April 5	4.5
	8 1/2 - 9 1/2	5	10	18	19	January 5	April 8	6.0
	9 1/2 ⁺	4	8	16	19	December 27	April 14	9.5
83-41	7 - 8 1/2	4	5	12	15	November 13	April 14	7.0
	8 1/2 - 9 1/2	6	11	18	20	November 24	April 8	7.0
86-106	7 1/2 - 8 1/2	4	6	13	15	December 4	April 12	5.5
	8 1/2 - 9 1/2	4	6	13	17	January 16	April 17	6.5
255-3	6 1/2 - 7 1/2	5	8	15	16	November 4	April 7	7.0
	7 1/2 - 8 1/2	6	8	15	16	November 2	April 6	7.5
	8 1/2 - 9 1/2	6	9	17	17	November 5	April 5	8.5
5301	7 1/2 - 8 1/2	3	4	10	16	November 13	April 18	6.0
	8 1/2 - 9 1/2	4	5	10	17	November 11	April 20	7.5
Ace	7 1/2 - 8 1/2	6	8	16	18	November 13	April 9	7.5
	8 1/2 - 9 1/2	8	12	21	21	November 6	April 6	9.0
Nellie	7 1/2 - 8 1/2	6	10	19	21	December 19	April 11	6.5
White	8 1/2 - 9 1/2	7	10	19	21	December 18	April 11	6.5

Bulbs potted 24 October 1991, placed at 63°F; moved to 38°F on 14 November 1991; forced at 62°F starting 30 December 1991.