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SHORT TERM STORAGE OF LILIUM LONGIFLORUM THUNB. PLANTS IN THE "PUFFY" FLOWER BUD STAGE OF DEVELOPMENT

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On March 27, 'Nellie White' cv. lily plants[4] in 6 inch (15.4 cm) plastic pots grown from 8-9 inch bulbs were selected at the white puffy flower bud stage. Plants were well watered prior to storage, were well rooted and had been forced according to commercial practices. Soil samples were taken. The nutrient levels were: pH 6.5, salts 12, N 58, P 5, K 38, Ca 81 and NH_3 1. These plants had been drenched some three weeks earlier with dexon benlate.

On March 28, these plants were placed in the cooler at 35°F (1.7°C) either under incandescent light (10 ft c), under fluorescent light (10 ft c) or in the dark. Half of the plants were sprayed with a 10 ppm 6-BA solution (10 ml/plant). Plants were removed every 0, 5, 10, 15, 20 or 25 days (March 28, April 2, 7, 12, 17 or on 22). The treatment removed on the April 22 date was stored in darkness only. There were 6 plants per treatment (Table 1).

Observations were:

1) Rapidity of flower bud opening of the "puffy bud" and the remaining primary (1^o), secondary (2^o) and tertiary (3^o) buds.

2) Condition of foliage (loss of chlorophyll) at the end of the cold storage.

3) Maintenance of the foliage and opening of the buds after storage.

4) Capacity of roots to begin functional water uptake.

5) General quality and wholesale or retail customer acceptance at removal from storage.

6) General quality and customer acceptance 5 days after removal.

Plants (soil) were kept moist in the cooler and were watered as needed.

On removal, plants were placed in a "home" situation, an east window exposed at 70°F (21°C) and were watered as needed.

All treatments opened normally. We could not ascertain any treatment differences. We never observed any disease in our aerial or root portion of the plants. However, our cooler was not crowded and air circulation was ample.

Recommendations for Easter 1979:

1) All plants be amply moist when placed in storage.

2) All plant root/medium mass be drenched with fungicide 7 to 10 days prior to storage.

3) All plants be inspected every 2 to 3 days for disease and soil/medium moisture condition.

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In conversations with Mr. Arthur Rosacker, Jr., from Rose Acres, Delray Beach, Florida, he related that he stores his plants in the dark when buds are some 4 inches (10 cm) long for no more than 10 days at 35°F (1.7°C). He sometimes ships these plants north, or moves them back into the field for completion of their growth and development. He also advises to slowly increase temperatures prior to moving plants out into high temperatures. No disease or Botrytis has been observed or been a problem. He has observed it is better to place the plants under saran and not under full sun intensity. Too, he has observed that some 2° and 3° buds may abort, but all 1° buds develop.

Table 1. Treatment combinations of dark, light type and dates plants were removed for those plants which were or were not sprayed with 6-B hormone solution.

No hormone spray	Hormone spray	Date removed
Dark	Dark	
1) 0 days	1) 0 days	March 28
2) 5 days	2) 5 days	April 2
3) 10 days	3) 10 days	April 7
4) 15 days	4) 15 days	April 12
5) 20 days	5) 20 days	April 17
6) 25 days	6) 25 days	April 22
Incandescent light	Incandescent light	
7) 5 days	7) 5 days	April 2
8) 10 days	8) 10 days	April 7
9) 15 days	9) 15 days	April 12
10) 20 days	10) 20 days	April 17
Fluorescent light	Fluorescent light	
11) 5 days	11) 5 days	April 2
12) 20 days	12) 10 days	April 7
13) 15 days	13) 15 days	April 12
14) 20 days	14) 20 days	Arpil 17