Probable Causes Of Recent Low Bud Count In Croft Lilies When "Forced"

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The Croft lily has achieved the reputation of being one of the world's finest Easter lilies. It has been outstanding as a pot plant and for this reason has had an enviable place in the trade.

Recently, however, forcers have complained of poor bud counts on the plants grown for the Easter market.

The situation became critical with the approach of Easter, 1946 and can no longer be ignored. Douobtless there are reasons for the development of this siuation, and it is the purpose of this article to seek an explanation for such behavior.

The answers to the question may be found in the literature or in the experience of successful growers. If they are not, then studies should be initiated which will lead to a solution of the problem.

It is only natural, of course, for the average forcer to blame the grower for any losses he may experience. This is often unfair since the grower has no control over the bulbs after they have left his hands. It is well known that the most hazard period in the life of the bulb is the time elapsing between leaving the grower's hands and arriving on the forcer's bences. This period brings the distributor into the transaction as a facor of good lily performance.

Be assured that the grower is more than anxious to produce bulbs that will perform satisfactorily on the forcer's benches. We are reminded, however, that "a chain is no stronger than its weakest link." It is essential for us to locate the weak links and strengthen them whenever possible to do so.

Causes of Low Bud-count

Some of the causes of low bud count are apparently known. For example, an article by Neil W. Stuart (in which he told of the influence of temperature and the length of storage on forcing performance of domestic Easter lilies which appeared in the Florists' Review, July 29, 1943, and in the Florists' Exchange and Horticultural Trade World, Sept. 25, 1943) is suggestive, particularly when reviewed in the light of recent experiences. These studies were based on Louisiana-Grown Crofts and Creoles and the results were summarized as follow:

1. Preliminary common or high temperature storage, in either moist or dry peat tends to reduce the effectiveness of subsequent storage at 50 degrees.
2. In comparison with moist (slightly wet) peat, storage, in dry peat results in delayed emergence and flowering, shorter plants, and feder flowers per plant.
3. The adverse effects of dry storage could not be overcome by soaking the bulbs in water overnight prior to potting.

Dry Pack Vs. Moist Pack

A distributor who handled a relatively large portion of the lily bulbs produced in the Pacific northwest in 1945 demanded that his growers pack their bulbs in dry peat. He doubtless had his reasons for ignoring the results of Stuart's studies. When these bulbs failed to produce the anticipated bud counts, however, the distributor was among the first to place the blame on the bulb growers.

Problem of Shrinkage

Another unfavorable result from the use of dry peat as a packing material is the shrinkage of the bulbs. The growers have been severely criticized for selling undersized bulbs. Some of this criticism was doubtless merited. However, experience has demonstrated that when bulbs were packed in dry peat they will lose as much as one whole size by the time they reach the forcer. Such dessication usually means that the roots will wither and dry. Also, such treatment tends to throw the bulb into a period of "dormancy" from which it is aroused with difficulty. Viable roots are evidence that the bulb has had proper care since being dug. It should be emphasized that the lily, in nature, does not become dormant in the sense that the tulip or bulbous iris does.

Development is naturally progressive and should not be permitted to become retrogressive. Northwest growers should capitalize on their ability to supply the forcers with bulbs having viable roots.

Acceleration

The practice of accelerating lilies is of comparitively recent origin. Laurie and Poesch, in their book "Commercial Flower Forcing" (third edition, 1941) make no mention of it. It makes possible the flowering of southern-grown lilies for Christmas trade, or earlier, and is also a means of conserving greenhouse space, since the length of time between the potting of bulbs and the opening of flowers can be materially shortened. Barney Brierley (in his article on Effect of Cool Storage of Easter Lily Bulbs on Subsequent Forcing Performance, appearing in Journal of Agricultural Research, March 15, 1941) states: "Cool Storage of Easter lily bulbs is a convenient primary control over time of flowering. The customary control factor, forcing temperature, can be used as a fine adjustment after this primary control has been applied.'

The studies of Stuart and Brierley show, however, that *acceleration in flowering always results in fewer flowers per plant.* Stuart found that unstored bulbs (the southern-grown creoles and the Crofts) produced 7.5 flowers per plant, with blooms commencing 259 days after planting, while storage for four weeks at 50 degrees halved the flower count and reduced to 134 the number of days to blooming. How do Pacific northwest lilies compare with the southern-grown lilies in their response to such treatment? A second article by Neil Stuart "Influence of Harvest Time and Storage on Forcing Northwest Lilies" in Florists' Review, Sept. 13, 1945- may contain the answer to this question.

Stuart's studies were based on uniform samples of Croft, Estates, and Ace Easter lilies that were grown in Oregon. The bulbs were harvested at intervals of four, six and eight weeks after full bloom.

The three dates of digging were August 15 and 31 and September 15, 1944. The results of these studies were summarized as follows:

"In all three varieties the number of days to bloom was reduced as the storage temperature was lowered. It is especially interest- in to note that in all instances 50 degree storage had less effect in hastening flowering than 35 degree storage, although 50 degree was consistently more effective than 35 degrees in previous experiments with southern-grown Creole bulbs.

It is also interesting to note that as digging was delayed the bulbs with few exceptions, bloomed much faster in all treat

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