

Final Report to the Slosson Endowment Fund October 2002

Title: Testing of Kohl Lilies for suitability as garden plants.

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Summary

Recently bred *Lilium longiflorum* varieties were tested for suitability as a garden plant and as a nursery product sold in garden centers for this purpose. This was a one-year project, extended at no additional cost to the second year, which ends October 2002.

Budget Summary: \$4,950.00

First year. Growing the lilies as bedding plants: Four clones were tested the first year for their usefulness as bedding plants for the consumer trade. Although original plans called for testing two different container sizes, only one gallon pots were used. The four clones were replicated five times with 20 containers per treatment. The treatments consisted of three growing conditions: inside a greenhouse (Location One), outside in a shelter such as an open-ended plastic house (Location Two), and outdoors unprotected (Location Three). The bulbs arrived on 4/23/01 and were planted and put in the three locations.

All the bulbs arrived in poor condition and in various stages of sprouting. Clones B and D were especially small and infected with basal rot. Clones B and D had serious problems and did not perform well enough to make an adequate evaluation. Most of the bulbs in clone B did not emerge from the soil after planting. Clones A and C produced near normal plants but the buds and blooms were deformed. This was most likely due to the amount of sprouting that had occurred in storage and shipment. The height of the potted lilies ranged from 10-16 inches.

2001 Growers notes by Debbie Weigle: The bulbs arrived at our location in very poor condition. Many bulbs had the entire basal plate consumed with rot. The basal roots were absent or very

sparse. Sprouts ranged from ½-2 inches in length. We have 20 years experience in growing lilies and are quite knowledgeable in evaluating bulb quality. The condition in which these bulbs came to us made it very challenging to produce blooming plants. Our expectation for these lilies was very low. Most experienced commercial growers would have thrown them in the dump pile upon arrival. Instead we used all our experiences as lily growers to coax whatever we could out of these bulbs. We planted the bulbs 4/23/01 and placed the pots in a cool area outside to promote the formation of stem roots. Most of the bulbs from clone B never grew. Clone D was very erratic in emergence and plant growth. When the plants obtained 2-4 inches in height they were moved to their prospective growing areas. This was done on 5/30/01. The bud visible stage was first observed on 6\15\01. The evaluation and photos were done on 7/23/01. Clones A and C produced plants with 1-2 flowers that were slightly deformed. Clones A and C surprised us as to how well they performed for bulbs in their condition. The plants were strong growers and the foliage was very attractive. The lilies seemed hardy and were only sprayed twice to protect them from botrytis. Botrytis is a serious problem during our cool damp summers. The lilies planted in beds outside grew well with little care. The bloom period lasted for 3 weeks. Many of the plants summer sprouted and produced a small second bloom.

It would be interesting to repeat this project with healthy bulbs planted in the fall and on bulbs placed in cold storage. A comparison between naturally vernalized potted bulbs and case cooled bulbs would be useful to growers. Information about the effects of time on cold storage of the bulbs is desirable. Also the time of year the bulbs are planted will effect plant height, days to bloom and bud count. We feel these lilies have some attributes that give them good potential for home garden plants. The bulbs can take considerable abuse and still grow. It makes us curious as to what good bulbs of these lilies would produce.

2002 Growers notes by Debbie Weigle: The bulbs arrived in better condition this year. Sprouting was not as pronounced this season. Most of the bulbs showed some of the classic chocolate brown color and white mycelium on the basal plate caused by fusarium fungus. The bulbs arrived 12/20/01 and were planted in a cool greenhouse with 40°-50° F nights and 60°-70° F days. The greenhouse was not heated and this is the natural temperature range for the coastal Humboldt Bay area. The growing times are much longer at these temperatures but these conditions produce the highest quality lily plants. Because of the basal rot we treated the plants with RootShield (*Trichoderma harzianum*) at the initial watering. Fewer bulbs were supplied and only two clones were tested this season. Again this year the lilies grew much better than what I would expect from this quality of bulbs. The photos of the blooming lilies were taken on 6/20/02. The plants were naturally compact and well proportioned without using growth regulators. The flowers were large and positioned well on the plants. Bud count on a 12 cm bulb was constantly 3-4. The 16 cm bulbs of clone A had 5-6 flowers, but this many flowers were not as well positioned on the plant. The plants fit nicely into 1-gallon containers and could be grown pot-to-pot until the last couple of weeks of production. There were no insect or botrytis problems again this year. We did have to bait for snails and slugs. Overall I thought clone B made a more attractive plant than clone A. The uniformity of clone B was also better than clone A. I thought these plants were very feasible to grow for commercial retail trade if marketed well. A color label noting the fragrance and use in the garden would be helpful. Also

information on the perennial nature of lilies and the growing instructions for future success with the plants would help in the marketing.

Marketing Survey: Gallon size lilies with normal blooms and buds were presented to shoppers two years in a row at a large retail nursery. 32 shoppers were questioned all together and there were more positive responses than negative, 20 positive to 12 negative.

They were asked

1. Do you recognize this plant?
2. Would you considering putting a white lily like this in your garden?
3. Would you buy this gallon size plant for your garden bed?
4. Would you buy bulbs for your garden bed?

The responses fell into two groups.

When recognized as an Easter Lily a common response for question 2 was “ No, it is an Easter Lily and I wouldn’t want it in my garden in summer”, and they wouldn’t want to buy it. Twelve shoppers were in this negative group. Comments were “No, not my type”, “Its an Easter lily, for Easter.” “I fear gophers.” “No, I don’t like the pollen.” “No, don’t care for lilies.” “No, too many at Easter”. “I like lilies taller”. “ Reminds me of funerals” “no luck with bulbs.” “ Not my style”

Another response for question 2 was, “sure, it is a pretty white flower” and yes they would buy it. Twenty shoppers were in the positive group. Some comments were: “I would plant bulbs if they come back.” “Yes, I have a lily garden.” “Yes, I love lilies.”

Either bulbs or the potted plant were acceptable to this group. Some of the comments were: “Yes, but more likely to buy bulbs” “prefer bulbs, cheaper” “not enough time for bulbs, would buy potted plant”. “would like plant in bud” “Yes, I would pay \$7-10 for a plant:” Several people remarked that they liked the fragrance, but several others didn’t.

I observed the prices on other gallon size plants for sale. The lowest priced were \$3.98; many were at \$7.98 and some at \$8.98.

Demonstration: About a dozen bulbs were planted out in a perennial flowerbed for evaluation in mid summer. Photographs were taken of the plants in bloom, surrounded by rhododendron, azalea and other perennials. They worked quite well as a garden bed plant. They did not need staking.

Budget

Period: July 1 2001 to June 30, 2002

Item	Requested Amount	Amount spent to date
Labor: contract with Debbie Weigle to grow lilies	\$2,500	\$4,500
Greenhouse space rental at HSU	\$300	0
Horticultural materials and supplies: Containers, potting soil, Pest and disease control materials,	\$1,600	Included in fee to Debbie Weigle
Travel (one trip to Davis, CA 650 miles)	\$350	0
Marketing survey expenses	\$200	\$50
Total	\$4,950	\$4,550

Other funds: matching in kind funds were used**Signature**

Principal Investigator: _____

Deborah Giraud

December 30,2002

Date