

THE PROPAGATION OF LILACS (SYRINGA)

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Reproduction of lilacs from cuttings has been practiced at the Descanso Nurseries for a period of approximately ten years with varying success. Sometimes rooting will be as high as 25%, sometimes only 1%. Generally, the average is about 10%. The percentage of take would probably be much higher if we were working with many types of lilacs or with an abundance of named varieties. But our work has generally been restricted to one named hybrid, "Lavender Lady." This report concerns our work with this special plant.

'Lavender Lady' is unique because of its ability to consistently produce fine spikes of flowers year after year with an absolute minimum of winter chilling. Thus our nursery, with sales only in the local area, is primarily interested in this single variety, for many of the finest named varieties of lilacs that perform so well in the East and Middle West will never bloom in warm-wintered Southern California.

We have other hybrid lilacs with virtues similar to Lavender Lady under test at our nursery that appear to be easier to root. However, cuttings of these plants have been limited to only a few hundred, so we can not yet compare relative successes.

We prepare to take cuttings of lilacs from blocks of field-grown mother stock as soon as the growth from the first flush of buds is firm. In our limited operation, we will make up to 30,000 cuttings each year but have success with only from 1500 to 5000. The successful cuttings root readily, on schedule, and grow on to make fine plants. In order to insure even this limited success, we perhaps take cuttings too early and too late. That is; the wood is initially perhaps too green and then within a few weeks it is too old. Our "shotgun approach" is to take about 2000 to 3000 cuttings at a time spaced over about a four-week period. At one time during this interval we get a pretty good strike on one or two days' cutting efforts. In analyzing our very limited success we have concluded that all other things being favorable and equal, the selection of wood is of prime importance.

The cuttings that ultimately do best are not quite the greenest and they are not the most mature. They are firm green. They are not soft that they will snap and yet they are sufficiently soft that they will wilt readily if not attended to properly. Length of cuttings is from 3" to 4" and caliper is about matchstick size. Cuttings are taken from tips that have just reached terminal growth.

The ultimate in sanitation must be practiced in handling the cuttings. The University of California Manual 23 is our guide in this procedure. A separate small greenhouse, 10' x 60', is devoted to the exclusive propagation of lilacs. One week prior to the propagation, the interior of the house is drenched with a Clorox solution under pressure. All parts of the house are exposed to this drench.

A propagation medium consisting of granulated pumice and peat moss is prepared and placed in nursery flats for steam sterilization each day before use.

Cuttings are taken in the morning and prepared and inserted in the medium generally before noon. A light shading is given the greenhouse and initially the house is maintained nearly airtight. Recently we have air-conditioned our greenhouses so that interior temperatures are not excessive. Night temperature is maintained at approximately 65 degrees F. and day temperatures might go as high as 85 degrees F. on a warm day.

We have two types of humidity systems. One operates constantly and sprays a mist under the benches and over the center walk area. The other mist is overheard and is operated at about 75 lb. pressure intermittently. For the first two weeks we attempt to never allow the foliage of the cuttings to get dry. We will hand fog during the day to be sure that no dry spots develop on the benches. After about two weeks the first casualties appear.

Several years ago we used to pinch out the terminal bud of the cuttings. We tried this in an attempt to do away with foliage that was too soft before it fell away. But in nearly all cases, an infection of some sort developed at the point of the pinch and the cutting started rotting from the tip downward. We no longer pinch out terminals. Now our initial trouble seems to come from weak wood that allows the foliage of the cuttings to start falling off at the base of the cutting until nearly all the leaves have dropped; then a black rot starts up the stem. We prick these casualties off daily and continue our sanitation program of drenching and dusting, as suggested in U. C. Manual 23.

The remaining cuttings, and there are precious few, will now commence to callus and the stronger cuttings will develop a light root system. We feel that at long last we have mastered nature but results do not bear out our wishful thinking. For after the cuttings callus, they appear to go dormant. The old leaves get hard and appear to want to drop off. Heat and moisture seem to keep them on, but all growth appears to terminate. Then, on some of the plants, we will notice a swelling of the terminal bud as if it is going to start a cycle of growth. Some root action will develop but it is generally light. Our tests have not indicated that hormone powers make a difference in root growth at this stage.

The development described above takes place about 4 to 5 weeks after a cutting is inserted. From this time on it is a question of watching and waiting. The cuttings appear to be completely dormant, the old foliage deteriorates, and root development is slow.

We start potting off cuttings with roots after about 8 weeks and continue for nearly three months, after which time we will dump all of the remaining cuttings. Most of the material we dump will be callused but our experience is that it will eventually decay and it is not worth our while to nurse them along.

Cuttings that we pot off, while possessing a good root system, are nevertheless dormant and we will not get top growth on these potted

cuttings unless it is an occasional break from a previously dormant growth bud. Such breaks occur in late summer and early in the fall. We do not anticipate growth on the liners until the following spring. Our practice now is to take the established potted liners in peat pots and line them out in raised beds of prepared soil mix and grow them under the shade of Saran cloth. The extra shade provided by the Saran allows the plant to grow a little taller with better foliage. We also are planning to take cuttings from the shade grown plants and test their ability to root, as compared with field grown wood. Limited tests made previously with shade grown wood indicate that we will have better success in harvesting a better grade of cutting wood.

Soon we will be starting another lilac season. This year we are going to experiment with lights to determine if this might influence the plant to remain active and not go dormant. We are also going to place some cuttings under a plastic bench shelter and will continue to work with propagation medium of different types that will provide better packing around the inserted stems. We feel perhaps that our medium is too coarse and too much air is allowed to get to the rooting area of the cutting stem.

We are looking forward to our work and hope that someday we will be able to provide more lilacs on their own roots for use in the southern California area.

MODERATOR MOREY: Thank you, Bob. Our next paper is on the grafting of *Acer palmatum* by Bill Omar of Doty & Doerner, Tigard, Oregon. However, Bill was unable to make the trip to southern California so his talk will be given by Bill (Omar) Curtis, Bill.

THE GRAFTING OF ACER PALMATUM¹

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I take one-year seedlings from beds and line them out in field rows, planted one-half inch apart in the row. After two years in the field they are ready for understocks and can be dug when dormant around November 1st to 15th and then graded for size, root pruned and cut back some. The seedlings are then potted in 2½", 3" or 4" pots.

After potting, they are bedded down on a greenhouse bench in damp peat moss to a level just over the top of the pot. This submerging in peat holds moisture for a long period of time and makes an ideal medium for producing a rapid, well developed root system. Greenhouse temperature should be 55-60 degrees F. top heat. I do not use bottom heat — just let them come along slowly. This seems to work best for me, as I don't want to force bud action too soon. On February 1st, or shortly thereafter, depending on the winter, they

¹Paper presented by Mr. William Curtis, Sherwood, Oregon.