

many. He started with Monrovia Nursery; now he is at Armstrong Nursery. He is the supervisor of propagation there and will be talking on propagation of lilacs. Ken Inose is with K & Y Nursery, Gardena, California. He will be talking on pumice as a rooting media. Then from Canada we planned to have with us Walt Van Vloten, but Walt didn't make it; he did send along his propagator, Harold Elzinga, again from Canada. And then Bob King from California Propagation Co. at Sepulveda. He again will be talking on something that we're all concerned about—the relationship in propagation between light, temperature, and humidity. So, basically, this is what we will have this morning on our panel. Ted, would you take over from here and talk on the screen bottom flats? Thank you.

**THE USE OF SCREEN BOTTOM FLATS
FOR SEEDLING PRODUCTION
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Seedlings of many plants produce pronounced tap roots in their initial stage. This is especially characteristic of materials from arid and semi-arid areas such as the southwest of the United States and parts of Australia, South Africa, and the Mediterranean region. When transplanting from the seed flat to pots, it is necessary with these materials to drastically reduce the size of the root system in order to avoid bending of the roots. This very often results in loss of the seedling.

One way to overcome this problem is by root pruning the seedlings prior to the transplanting operation. In the past this was sometimes done by using a material toxic to roots in the bottom of the flat. Copper was most commonly used, either as a screen laid in the bottom of the flat, or by coating the flat heavily with copper naphthenate. This is effective in killing the growing point of the taproot, but there is a danger of getting an excess of copper into the seedlings, which could lead to various nutritional disturbances.

In the College of Agriculture at UCLA, screen bottom flats are used for starting seedlings of plants native to the Nevada desert. These flats are built of one-inch thick redwood for the sides and discarded Saran screen for the bottoms. This screen is the grade usually used to give about 50% shade. To support the Saran a piece of 2" x 4" mesh turkey wire is used. The depth of the flat is determined by the size of the container to be used in the transplanting. A flat 1¼" deep is about right for transplanting to 2¼" peat pots. The flats are raised above

the bench a few inches so air can circulate underneath to dry off the root tips as they come through the screen.

The medium used is industrial #3 grade vermiculite. This material is easy to water, holds moisture moderately well, and has good aeration. With many larger seed it is not necessary to supply nutrients in order to get the seedlings large enough for transplanting. With some species, especially those with very small seed, it is necessary to fertilize. One-half strength of a complete nutrient solution, such as Hoagland's, is used when needed.

When planting in a medium such as vermiculite, and feeding when necessary, it is possible to obtain close control of the growth. It is desirable to have the seedlings on a nutrition program lower than that which would give maximum growth. A low-nutrient level, especially with nitrogen, results in a higher root to top ratio.

Several advantages have been found with this system. The seedlings can be transplanted to pots or cans with virtually no loss of the root system, resulting in less mortality. By keeping the nutrition low, the seedlings are sturdy and easily handled. Plants can be held longer in the seed flats if necessary and still be usable.

MODERATOR BRIGGS: Our next speaker now will be Dieter Lodder:

PROPAGATION OF SYRINGA VULGARIS 'LAVENDER LADY' FROM CUTTINGS

DIETER W. LODDER

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Syringa vulgaris 'Lavender Lady' is one of the few cultivars of this species which performs reasonably well under Southern California conditions and is, therefore, of economical importance to nurserymen in this area.

Unlike the French lilacs which are budded or grafted, *S. vulgaris* 'Lavender Lady' is normally propagated by softwood cuttings. This plant is not incompatible with the commonly used understocks such as *Syringa vulgaris*, *Ligustrum*, or *Forsythia*, but it is raised from cuttings because its growth is slower than that of these understocks and, if grafted, would result in extremely heavy suckering from the understock.

Success with the rooting of softwood cuttings of *S. vulgaris* 'Lavender Lady' at Armstrong Nurseries was unpredictable. Through experiments, a successful method was found which is described as follows: