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

Armstrong Nurseries
Ontario, California

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:

Softwood cuttings are taken as soon as new spring growth was available which is in mid-March in Southern California. Nodal cuttings are taken and stuck into flats filled with a rooting medium of five parts No. 3 Sponge Rok and one part, regular grind, Canadian peat moss. The flats are placed under intermittent mist. Four to 5 weeks later, all cuttings are taken from the flats while still under intermittent mist but without going through the usual hardening-off period prior to potting.

In our experiments, close to 50% of the cuttings rooted heavily. They were potted and placed into a greenhouse where high humidity was provided. The humidity was gradually reduced over the next 3 weeks, during which the plants continued growth with rapid root formation.

When the cuttings were dug from the flats most of those without roots had produced a heavy callus which probably developed during the first weeks in the greenhouse. Some heavily callused cuttings were found with a single, heavy root which had emerged from an area around the base of the cutting, not blocked by callus.

All callus was removed and the cuttings were re-stuck into new flats. This time Hormex #3 was used. At the start we used Hormex #1. While being processed during potting and resticking, the plant material must be kept moist, as the cuttings were not hardened off prior to the first pulling.

Six weeks later, about 70% of the reset cuttings were rooted, potted, and left under humid greenhouse conditions until sufficiently established.

Syringa plants produce heaviest growth during early spring, which means, with reference to rooted cuttings, that little or no new growth can be expected during the first year. In order to force growth on our newly potted plants we moved several flats to cold storage where they were kept for two months at 40° F. and then returned to a shade house. Two to 3 inches of growth developed within the first month; however growth stopped when, during a few days this summer, temperatures rose over 110° F. We plan to conduct additional experiments in forcing growth during the first year.

We found that cuttings of *S. vulgaris* 'Lavender Lady' must be taken when they are quite soft. The tissues will become hard and woody during the rooting process. Cuttings made from mature spring growth were of wood that was too hard and they failed to root. To obtain highest rooting percentages, rooted cuttings must be pulled after 6 weeks. Callused cuttings should be treated as described above and returned to the cutting flats until rooted.

MODERATOR BRIGGS: Would Ken Inose come forward? Ken will now talk on pumice as a rooting medium.