

After we started this program we noticed a marked improvement in the percentage of healthy successful grafts. However, we still see the presence of some *Pseudomonas* so we are not satisfied that it is 100% effective. This may be because we have recently learned that there is evidence of strains of *Pseudomonas* that are resistant to this treatment. So the question still remains: **JUST WHERE ARE WE WITH THIS DISEASE?**

An Oregon nurseryman, who believes that prevention is fundamental to growing disease-free plants has apparently found a way to produce *Pseudomonas*-free seedlings by growing in plugs without exposure to native soils. Understocks which we have purchased from him seemed to have proven him correct.

This experience leads me to believe that a fundamental basic knowledge of plant science and plant diseases is necessary for everyone in our industry, especially plant propagation. This will lead to proper preventive practices which will in turn yield healthier plants and better crops.

---

## Rooting Lilacs from Softwood Cuttings

### C. Peter Nickerson

Robert Baker Nurseries, 1700 Mountain Rd., P.O. Box 434, West Suffield, Connecticut 06093-0434

I'd like to begin my talk on lilac rooting with a little history. Prior to 7 years ago, French hybrid lilac cuttings were taken the first week of May from a stock block or containerized material. Very soft cuttings were taken and treated with IBA (indole-3-butyric acid) in talc or with an IBA solution [water and alcohol, (1 : 1, v/v)]. Results were very uneven and the continued growth of the liners was uncertain, at best.

As demand for lilacs from our customers increased, tissue-cultured lilac liners were purchased to supplement the lining-out stock propagation was generating. Cuttings were made from these young plants and we were very successful in rooting the cuttings from these juvenile micropropagated liners. I wondered if the higher rooting percentages would continue through successive generations. Because additional tissue-cultured liners were purchased for a second spring, I was able to compare the results from these plants with cuttings from second generation tissue-culture liners. Our rooting results were quite good. Most of the 20-plus cultivars tried rooted over 80%, whether the cuttings were from micropropagated liners or second-generation micropropagated liners. The juvenility of the parent plant from which the cutting was made seemed to be the most important factor.

As far as actual propagation of lilac cuttings, we start of course with our young liners. They are kept at 35 to 40F most of the winter. As their leaves fall in late autumn, we blow the leaves off the plants and onto the greenhouse floor, where they can be raked up and disposed of. The plants are pruned to about a 2-in. height. In mid February, the night time heat is increased to 55F. The liners begin to grow and by late March, the new growth is long enough to use for cuttings. Enough length of stem is removed to allow a two-leaf and one-node cutting to be made. We try to finish our wood gathering by 10 AM so the cuttings are fresh and turgid.

The cuttings are made in a work room next to the sticking greenhouse. After being prepared, they are dipped in one of two IBA preparations. For French hybrids, we

use Dip-n-Grow diluted 1 ounces/5 ounces (water) plus 1/2 teaspoon of the K-IBA (potassium salt of IBA). For other easier-to-root types like 'Miss Kim' and 'James McFarlane', we use Dip-n-Grow (1 : 9, v/v) by itself. The cuttings are stuck in sand flats in a pit house with 25% shade, frequent misting, and very little ventilation. Misting is gradually reduced and ventilation increased as cuttings begin to root, often within 3 weeks. The cuttings are periodically drenched with Banrot or sprayed with Greenshield to control diseases.

As the roots develop, we liquid fertilize with 200 ppm nitrogen on a regular basis. It is important to get them back into growth in order to get the best liner for the following spring. This is relatively easy with the March/April cuttings and more difficult with cuttings stuck in May. The rooted cuttings after hardening-off are potted into cell packs using a peat and sand mix (2 : 1, v/v). I should add that our water pH and carbonate levels are high enough that we can get away with using a low-pH medium like peat/sand. The pH rises as time goes by. The potted liners are watered, fertilized, sprayed, and sheared as needed.

This growing scheme works well for us because we can dedicate a large portion of a gutter-connected greenhouse to lilacs. Additionally, our lilac liners are not bedded out until early June (which gives us the opportunity to get the juvenile cuttings off the liners to be bedded out).

While we have been more successful rooting lilacs than in the past, there are still problems. Foremost is bacterial lilac blight, *Pseudomonas syringae*. We rotate sprays of Agristep and Greenshield along with a culling regime. As different cultivars become popular and others go by the wayside, we hope to maintain a high level of production to meet our market needs.

---

## Propagation of Hydrangeas at Half Hollow Nursery

**Bruce L. Amundsen**

Half Hollow Nursery, P. O. Box 652, Laurel, New York 11948

### INTRODUCTION

With the recent popularity of hydrangeas comes renewed interest in their propagation. Following is an overview of the most common methods currently used for popular taxa with specific techniques used at Half Hollow Nursery. Methods using seed, layering, tissue culture, and cuttings are discussed; propagation from cuttings is emphasized, since this technique is the easiest and most cost-effective.

### METHODS OF PROPAGATION

**Seed.** Growing hydrangeas from seed is easy for most species since they have no dormancy and will germinate without pretreatment. The seed is small and therefore I suggest shallow sowing in the greenhouse during early winter using standard media at a temperature of approximately 70F. *Hydrangea anomala* ssp. *petiolaris* (climbing hydrangea) is one exception—germination is improved by cold stratification (moist chilling) for 2 to 3 months before sowing. Seed can be placed in a plastic bag with a damp medium, such as peat-lite, sealed, and refrigerated at around 40F for the stratification period.