

5.4S) in liquid form, at 400 ppm N, and then every 10 days until the house has had three applications of the growth solution. We have a central injector we use for the 2 : 1 : 2 so we can fertilize two houses at the same time, making scheduling easier. Because our goal is to be finished fertilizing by the 31st of August, some of the cuttings in the "late stuck" houses do not get the full treatment. These houses all get at least one application of the "starter" followed by 0N-30P-30K sometime in Sept./Oct. to help with hardening off and over wintering. In the spring, we will continue the fertilizer schedule for the crops that are overwintered in the greenhouse, until a total of three applications of the 2 : 1 : 2 is provided.

The obvious result of an intensive fertilization program is increased growth. This in turn requires more maintenance. We maintain uniform size and shape through the use of a mowing system. A Honda mower was chosen for its ability to remove the cut debris. By selecting cutting heights, we can either have short, multi-branched shrubs or tall single-stemmed tree liners. Our goal is to have large caliber liners, with fibrous root systems of uniform size.

Pesticide use is minimal, usually spot applications when needed. Our two worst pests are aphids and spider mites. Solo backpacks are used for spot sprays and a 50-gal sprayer is available for whole-house treatments. When we do spray, every attempt is made to comply with the federal "Worker Protection Standards".

We make use of a computer-aided inventory system, custom designed for our use. It is absolutely essential that we have a reliable method of tracking the plant material. This becomes very apparent at digging, grading, storing, and shipping time. Final destinations for our rooted cuttings include our own West coast dormant and green plantings, Minnesota plantings with a small percentage destined for sales. Cuttings that are dug dormant are graded, root-pruned, if appropriate, counted into lots of 100, labeled, and "jelly-roll" wrapped. They are then either stored frozen in our cooler or sent back to Minnesota for planting or for sales.

In conclusion, let me reiterate that our system has been developed based on our own unique needs to meet our goal of producing the best possible liner material for an incredibly diverse range of woody plants.

"Cuttings" Question-Answer Period

Margorie Sweeney: Where do you get your cuttings from?

Chris Santana: Almost everything is from stock in the field.

Robert Abe: What fungicides do you use as a cutting dip?

Chris Santana: We use several different rooting hormones, such as Dip-N-Grow, Hormodin, and Hormex. We steam pasteurize our beds between crops. We use small quantities of Subdue on an "as needed" basis.

Anonymous: How do you use ozone? Have you noticed an improvement in rooting from ozone-treated cuttings?

Tom Fessler: We use a little swimming pool ozonator. Cuttings are dipped in an ozone-rich solution. We have noticed improved rooting and are very pleased with the ozone-treatment techniques.

Bruce Briggs: Is your computer system measuring or monitoring when to apply water to your gallon-size plants?

Tom Fessler: Our computer is capable of doing that, but we haven't programmed it to do that yet.

John LaForge: What medium do you use inside your greenhouses?

Randy Murphy: It's all pumice in the ground beds and is 10 in. deep with two drain lines under each bed.

Divide and Conquer: Propagation of Herbaceous and Tree Peonies

Richard W. Rogers

Caprice Farm Nursery, 15425 SW Pleasant Hill Rd., Sherwood, Oregon 97140

INTRODUCTION

If there is a critical moment in the propagation of herbaceous peonies (*Paeonia*), it comes at the very moment you attempt to divide a mature plant. All of your dreams for commercial success hinge on that decisive cut. Like the diamond cutter in the TV ad perched on the back seat of a moving car, the next stroke will determine if you'll walk away with two, five-carat stones or a lot of worthless chips.

In the next few moments, I will share with you how this operation is performed at Caprice Farm Nursery. Whether for walk-in customers who will closely inspect our peonies on-site or for our mail-order clients who rely largely on our reputation, we endeavor to provide our customers with healthy, well-grown plants of the highest quality.

HERBACEOUS PEONIES

Let's begin with a caution. Avoid using older plants since by the fifth year the clumps will have grown too big and too heavy to lift without damage to man or peony. I start with a well-watered 3- to 4-year-old plant. I cut the foliage to within 4 in. of the ground. Next, imagine a circle 32 in. in diameter (or 16 in. out from the crown). Using a garden spade and following that circle, dig down the full length of the shovel face, producing an inverted cone of root mass and soil. Supporting the cone with both hand and spade, lift the root mass free of the hole, being careful not to break the brittle roots.

Now off to the work station. Wash the clump, completely freeing it of all clinging soil. Left in place, the weight of this soil is enough to produce unacceptable levels of breakage.

Here's where your money is made or lost. Examine the clump carefully. Count the eyes and find where the main roots connect to the crown. The "eyes" or buds are similar in appearance to those found on the common potato. When done, you'll want three to five eyes supported by a root system at least 8 in. in length.