

Cleanliness in Propagation with the Use of Agribrom

Dan Klupenger

Klupenger Nursery and Greenhouses, Inc., 24075 Klupenger Road NE, Aurora, Oregon 97002

INTRODUCTION

Klupenger Nursery and Greenhouses, Inc. is a 50-year-old company specializing in rhododendrons, florist azaleas, Japanese maples, grafted conifers, and many other assorted shrubs. We have been in the same location for the past 37 years. Using houses and benches that have been used for many years creates some challenges, one of which is cleanliness. We do as much as we can to maintain a clean and usable propagation area. Our benches are treated yearly with wood preservative, the glass is cleaned on a regular basis, and the trails get top-dressed with gravel as needed. We even spray an entire area with chlorine prior to putting in a new crop. Despite these measures, the fact that things have been around for a while, disease has a lot of places to hide.

DISCUSSION

With our longer rooting crops such as rhododendron (8 to 12 weeks), florist azaleas (6 to 8 weeks), and conifers (12 to 18 weeks), we were starting to see algae growth and sometimes it would be very severe, covering the entire flat and bench just as the rooting was completing. We use some fertilizer to get the plants going and this just accentuates the problem. Our vent system creates a lot of air movement so a lot of mist is used to offset the drying. Again more water more algae. Another problem we were starting to experience was *Rhizoctonia* setting in on the rhododendron cuttings in a very short time after sticking. This was a major problem. After calling in the experts and checking everything from the water to the soil it was determined that *Rhizoctonia* spores were all over the greenhouse just waiting for a host. It was suggested to Vapam the greenhouse to kill all the propagules, but this was not practical. The alternative was a slow but steady treatment with bromide or more specifically Agribrom. Eventually it would knock out the population of the disease.

A few years earlier I attended a conference where Dr. Harry Tayama from Ohio State was making a presentation on the effects of bromide in the greenhouse and how there would be no more moss and algae on the walks, if you only used this product. This sounded great, but what was the application method? He came out and set up a trial in one of our cold frame houses and the results were somewhat dismal. Further experimentation was done by others and the eventual best use was in the propagation area, mainly because of the continual application required. If you used bromide injection in your misting lines, it was possible to keep the walks and pipes clean of moss and algae. It was also possible to get some disease control and was not phytotoxic to most crops.

MATERIALS AND METHODS

The method of application is to install an automatic pool chlorinator. The cost is about \$100.00 and can be purchased at any pool or spa supply house. This is tapped into the main water source and meters a small amount of bromide into the misting

system all the time. We try for 5 ppm to 25 ppm. Agribrom is available in tablet form so all you need to do is be sure your chlorinator remains full of tablets. There is a testing kit available to test the rate of bromine in the water. There is a manual regulator to adjust your flow but we have found that wide open is the best for us.

RESULTS

It did take some time to see the results. The chemical must clean up your pipes first then it will start to work on the other areas of the house. By the next year of sticking rhododendron cuttings we had very little problem with *Rhizoctonia*. There was also very little algae or moss. We have seen no phytotoxicity to any of our crops. The only evidence of the bromine use is a brownish color on the misting lines. We did think at one time that there may have been a phytotoxic problem so we turned it off. Shortly after turning it off, we saw an increase in disease on our *Acer* grafts so we knew it was having some effect on disease. In another instance we noticed it was not working and we had an increase in algae.

We have seen some additional uses of the bromine. For example, when cleaning our cuttings prior to sticking we add a couple of tablets to the rinse barrel. This has proven to be beneficial. Also, in some of our poly houses where we have them installed, the diseases that we get throughout the winter seem to be less. Bromine is not the answer to all of our problems and our place can always be cleaner, but it is an inexpensive tool that certainly makes a difference.

Propagating Clonal Rootstocks of *Pyrus communis*

William M. Proebsting and Luigi P. Meneghelli

Department of Horticulture, Oregon State University, 4017 ALS, Corvallis, Oregon
97331-7304

Pear is difficult to propagate efficiently by cuttings. This is due, in part, to the sensitivity of cuttings to the stresses associated with propagation and declining rooting potential as stock plants mature. We found that the expanded, sub-apical portion of softwood shoots is resistant to stress and roots well. Furthermore, cuttings from young stock plants have high rooting potential. Based on this and other information, we propose a set of guidelines for propagating softwood cuttings of pear.

INTRODUCTION

Clonal rootstocks of pear are typically propagated by hardwood cuttings. In Oregon, cuttings are collected either early or late in dormancy, callused for 2 or 3 weeks to induce root primordia and then refrigerated until soil conditions permit field planting. Developing alternative methods would complement this process and enhance the supply of high quality liners. We have been conducting a systematic study of softwood cuttings of clonal pear rootstocks. We report here effects of stock plant age and cutting type on rooting.