

## Propagation: Necessity is the Mother of Invention

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I was recently asked, "What is your nursery?" I stumbled in my thinking and then said the normal answer; "We propagate and grow many types of broadleaf evergreens, deciduous shrubs and conifers". I can remember walking away from this answer with a question in my mind as to what kind of nursery my husband and I had and how did it get to where it is today.

The necessity in the beginning, 13 years ago, was money. Lots of children bound for college, two jobs that wouldn't provide that kind of income, and a two-acre home in the country.

We were going to raise berries but Jack Bigeji, a nurseryman friend, suggested that we go into the nursery business. Not knowing anything about the nursery business, we felt it was necessary to educate ourselves. We selected a propagation night course at our local community college and away we went in the fall.

Four weeks into the course we rooted a plant. It seemed easy and I could see dollar signs all over the place. Just cut a stem from a plant, put some hormone on it, stick it in a flat on some heat and watch it make money for you. This is so easy, why didn't I know about this sooner?

After our community college class, we recognized that maybe there were some other things we should know about propagation. I went to work for Ed Shultz "for free" if he would teach me how to operate a nursery. It was a great experience! Ed taught me a number of useful things: how to ball and burlap a broom stick, how to weed, work in the rain, and how to propagate quality nursery stock. At the same time, his family taught us that the nursery business was a wonderful way of life.

One day Ed came to me and told me I was fired! He said the work was enjoyable but the object was to make a profit. It was time to start our own nursery. It was good he did, otherwise I would have stayed forever!

On our own with enthusiasm but no money, necessity made us be inventive. We needed a propagation house to work in, so we built a quonset type house with water pipe, bending it ourselves with a borrowed bender. We used electric cables for bottom heat and room fans for ventilation. For flats we used bulb flats that were 2 ft. x 3 ft. x 9 in. deep which were free from a local bulb farmer. We filled these with pumice and stuck cuttings on the kitchen table at night. The flats weighed about 95 lb a piece! We hauled them to the propagation house with an old door laid across a wheelbarrow. Soon they rooted but we needed to sell them, so we invented a market for ourselves. We sold them to other propagators in the area who were short for their orders.

Finding true-to-name cutting stock became a necessity. Nurserymen in our area would allow us to come onto their fields and take cuttings for credit on propagation material. Places of business in town would allow us cutting rights if we would prune all their plants for them. The State of Oregon would issue us permits along freeways and state roads for certain plants if we would give them credit on plants that they might need in the future.

One late evening, we were taking cuttings around an office building. It was cold and very late so we decided to take a break and get a cup of coffee. We pulled into the parking lot of a nearby restaurant. We started to get out of our car and were surrounded by a group of armed policemen that had decided that we might be the persons who had been burglarizing local businesses. The necessity at this point was to stay out of jail! I can't tell you how glad I was that we had a written permission letter from the owner to take cuttings, as it provided our alibi.

We started sticking conifer cuttings in early March because bottom heat cost money. The easier growing junipers were treated with Hormex #8 and put into pumice flats. The harder-to-root cuttings, such as *Juniperus chinensis* 'Robusta Green', were treated with Hormex #45. They were watered periodically during the day and left with 45% shade over them through the summer. In the winter the house was covered with poly and no bottom heat used. They rooted very well with very little expense. We also took our *Photinia × fraseri* cuttings in a similar fashion. When the *Photinia* leaf was completely green on the new growth and the stem was still red, we stuck the bottom of a 4- to 5- in cutting into straight Woods Rooting Compound and put it into pumice flats. Rooting was fast and they were a good money maker for us.

In December we take our *Arctostaphylos uva-ursi* 'Massachusetts' cuttings, treat with #3 Hormodin and stick them into flats of peat and perlite. These cuttings are then put onto heated beds with temperatures kept at 66 to 70° F. The rooting percentages are very high for us and our turnover is quick. We felt we had invented a few ways to increase profit.

As the demand for propagation material grew, so did we. Most of the money we received from the plant material went back into building the nursery. We knew we needed certain equipment to be able to increase our production, so we started touring other nurseries to see what was needed and what could be invented to save costs. Well, it was easy to see that we just *couldn't* get along without having a million dollar propagation house that had all sorts of really neat fog systems, steam bottom heat, mist booms, and lots of employees. The problem was that none of the local banks would give us a million dollars free!

A new propagation house was built using professionally made components assembled according to our own needs—bigger and arranged efficiently. Heat beds were made from scratch using dense building insulation on the ground. Next a handmade grid of P.V.C. pipe was laid down over the insulation and covered with pea gravel. We learned that a regular household water heater would produce enough hot water to heat the beds. We experimented with a small, cheap pump to move the hot water through our pipes. A common thermostat turned the pump on and off automatically to get the heat level we desired in the propagation bed.

For summer propagation, cooling was a necessity. Water mist that would not soak the cuttings in the flat was most desirable. We found that by boosting the water pressure to about 125 psi with an in-line pump through normal mist nozzles, we had made wet fog. This system was cycled on-off with a standard time clock to get the needed cooling and water.

As the value of fog grew more obvious for some rooting processes, we looked at the expensive commercial systems and decided to try inventing something more within our budget. Being a mother, I had long before learned all about room vaporizers and humidifiers for sick kids. You guessed it, several of the new

electronic room fogging humidifiers will create fog in a greenhouse and they are very inexpensive.

As the numbers of plants and hours increased in the nursery, we found that we needed help. We enlisted our children until they went on to college to pursue law, science, medicine, or anything that would keep their hands reasonably clean. The hiring of employees became a necessity. Other than some mechanization in planting, we have found that there is no invention around to take the place of good employees.

The necessity for good business practices became immediately clear when a big customer didn't pay his bill. We then invented policies and practices to safeguard ourselves. Marketing, advertising, and educating ourselves by going to different nursery chapter meetings became an asset to our business right away. The association and education that the I.P.P.S. organization has given us is invaluable. Going to different trade shows has not only been fun but also profitable for contacts and orders.

Growing nurseries need lots of room. The two acre country home was sold for the 12 acre new nursery site. The necessity for more room has brought us to building a new, neat, clean nursery and a new home. What fun!

Now if asked what is my nursery, I would reply; "Our nursery is profitable and Ed Schultz and family were right, it is a wonderful way of life"

The goals that were ours in the past, are still the goals of today. Necessity and invention become the way we achieve our goals. Let's hope that the necessity of preserving our industry and our planet will make us all be inventive so that those coming after us can also have a wonderful way of life in the future.