

As a privileged link between the industry on the one hand and the study of plants on the other, Longwood is in an ideal position to mount this sort of study and will itself reflect and be guided by its discoveries, as well as sharing them with the horticultural and gardening world at large.

Conifer Propagation®

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INTRODUCTION

Propagation of rooted cuttings at Blue Sterling Nursery has always been a top priority both to ensure proper cultivar nomenclature and as a means to control quality. We have used many different methods and experimented many different ways. Out of the many factors to consider while propagating, timing and the space needed were definitely the biggest. The balancing of space available vs. amount needed always seemed to be an issue. Then there was the timing aspect to think about; plants all have a time when taking cuttings is most successful. And all of this is still somewhat based on actual demand or potential demand of that item years before it is saleable. With owners (Jim and Barb) always traveling across the globe searching for new and unusual plants, there always seemed to be more things added. It was very common to receive one 6-inch plant with the expectation of getting 500 cuttings ASAP because of the potential sales value. When talking about a dwarf cultivar it takes multiple cuts to even get 25 cuttings. Sometimes that meant we had to actively force certain plants to continually be able to get cutting wood. So needless to say we had to be very flexible both in timing and also space. While the propagation of most items was well within the proper time frame for great success, others were nowhere close. So like the rest of you, we always had to improvise. Mother Nature doesn't always like to be fooled, and you know how she can get.

GOALS

- Ensuring proper nomenclature of each cutting.
- Achieving highest percentage of success on all cultivars.
- Provide top quality liners to production department.
- Doing all of above as efficiently as possible.

EARLY FACILITY (CIRCA 1983–2000)

- 25 ft × 100 ft arched steel structure with two layers of clear poly.
- Raised benches separated into eight different zones each with controllable under bench heat.
- Each zone had separate misting capabilities controlled by electronic leaf devices.
- Cooling and venting was by two huge fans on the west end and shutters on east end.
- Two oil-fired hot air heaters connected with poly tube for better heat distribution.

MATERIALS

Media. Our propagation mix consisting of 4 peat moss : 40 bark : 2 sand to which is added $\frac{1}{3}$ perlite for aeration.

Flats. 18 or 36 cell trays and 18 × 24 inch flats.

Hormone. Dip 'N Grow®.

Fertilizers. Peters 20-20-20 water-soluble and Nutricote 18-6-8 slow-release fertilizer.

METHOD

The following is our method for rooting *Chamaecyparis obtusa*.

Taking Cuttings.

- In the morning, estimated amount needed to complete daily totals.
- From proper location on plant.
- Placed into empty flats under constant mist within minutes of cutting.

Preparation.

- Removal of lower branches by cutting close to stem to not damage cambium layer.
- Slight trimming of tops to even out crop.
- Light wounding if needed.

Dipping in Hormone.

- Mixing appropriate concentration fresh daily.
- Assembling stems evenly by handful and dipping into solution for a few seconds.

Sticking. One per cell or 100 per flat depending on size.

Labeling Each Tray or Flat. Plant name, date stuck, hormone concentration used.

MAINTENANCE OF ROOTED CUTTINGS

Fungus/Pest Prevention. Application of combination sprays every 7 to 10 days rotating chemicals to prevent resistance.

Fertilizing of Rooted Cuttings.

- Applying liquid through injection with a rate of 50–100 ppm every 4th or 5th watering.
- Applying slow release at lowest rate to cell trays.

Pruning. Very light trimming to promote growth.

Watering. Hand watering as needed.

RESULTS

- After 14 to 28 days callus tissue would start to form.
- After 6 to 8 weeks roots started to appear.
- At approximately 12 to 14 weeks light trimming occurred.
- At 18 weeks cuttings were ready to transplant to individual cells or to 1-gal containers to be hardened off before going to production.
- Labeling again occurred with strip labels for field use.