

Summer Veneer Bench Grafting of *Acer palmatum* Cultivars[®]

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INTRODUCTION

There are countless ways of propagating *Acer palmatum* cultivars. Bench grafting is probably the most common method, but field budding and even softwood cutting propagation is possible. Softwood cutting propagation of dwarf cultivars is often preferred by bonsai growers. This talk will focus on the method we use at J. Frank Schmidt & Son Co. — summer veneer bench grafting.

ROOTSTOCK PRODUCTION

We grow our own rootstocks from seed that we pick locally. While seed can be picked at any time from September onwards we prefer to pick in late September and early October just as the seed is beginning to turn from green to brown.

Picking seed does not save us a great deal of money over buying seed, but it gives us much better control over the subsequent quality and viability of the seed. We can often pick as many as half a million seeds from one tree. After picking, the seed is allowed to dry in a cool barn for a few weeks. It is then bagged up and stored dry in a cooler until December.

In mid December it is stratified with an equal volume of moist peat and returned to the cooler in 1-gal-sized Ziploc[®] bags. Moisture content at this stage is very important, too dry and the seed will not stratify correctly, too wet and the seed will easily rot. By mid-March the seed is ready for sowing. To check this we remove a bag from the cooler open it up and leave it in a warm greenhouse. If the seed has been stratified correctly it will chit within a couple of days.

The chitted seeds are sown individually by hand in 73-cell 10 × 20 plug trays and covered with a ½-inch layer of perlite. The compost used is a 75% ½-inch and finer Douglas fir bark with perlite and peat added. A 50% rate of 3–4 month Osmocote Plus 15–9–12 is also incorporated into the mix. The plug trays are set out in a cold greenhouse, seedlings begin to emerge in about 7–10 days, they remain in the plug tray for the rest of the growing season.

During the winter months the seedlings are graded and then potted into 3-inch-liner pots and again returned to a greenhouse for growing on. By July of the second year we have a 15-month-old rootstock that is ready for grafting.

GRAFTING

Acer palmatum has some of the largest propagation windows of any plant and by manipulating the environment they can be grafted in just about any month of the year.

All of the following methods and countless variations of them are used by Oregon nurseries to graft Japanese maples:

- Jan – Feb Veneer grafting in heated greenhouses
- Dec – Feb Callus tube grafting of bareroot seedlings
- March – May Veneer grafting in unheated greenhouses
- June – July Veneer grafting under poly tents

- July – Sept Veneer grafting in open greenhouses
- Sept – Oct Veneer grafting in heated greenhouses
- Sept – Oct Veneer grafting under poly tents

We choose to veneer graft our plants in August and September as this is when it best fits into our labor curve.

Before grafting we grade and prepare our rootstocks. Roots extending from the pot are pruned, any low foliage on the stem is removed, and the top foliage is reduced by 50% to 60%.

Scion wood is collected from both stock plants and ball-and-burlap production plants. Selection of the correct scion wood is more critical to the success or failure of the graft than is the actual grafting itself. Soft, new growth or wood that is not fully ripe should never be used as scion wood.

A shallow 1- to 1.5-inch cut is made on the stem of the rootstock and the tongue is not removed. Corresponding cuts are made on both sides of a 4- to 6-inch scion that has between 2 and 3 nodes. The scion is then placed inside the cut made on the rootstock and tied.

We tie all our grafts with biodegradable Buddy Tape®. This tape does not have to be tied and greatly speeds up the grafting process. Our grafting team averaged between 80 and 110 plants per h per person. Each grafter ties their own grafts.

Buddy Tape is biodegradable outside, but it will not biodegrade inside a greenhouse so care must be taken to tie it as directed on the instructions to prevent girdling of the plant stem.

Adapted sewing machine motors are used to help with the tying operation. A sewing machine motor is mounted through the table and controlled with a foot pedal. This spins the custom made pot holders that are attached to the top of the motor. This saves the grafter from the repetitive shoulder motion of having to manually tie the grafts.

AFTERCARE

After grafting the plants are returned to an open-environment greenhouse and overhead irrigated just as they were before grafting. In late September new rootstock growth is removed to allow enough light and air circulation to reach the scions, but the flats are not picked up again until the following year.

Some of the scions, especially those grafted in early August, will break bud and begin to grow a few weeks after grafting. This soft delicate foliage is quite susceptible to *Botrytis*. We prefer the buds not to break and begin growing until the following year.

After the winter the grafted plants are graded in February or early March just as the buds are beginning to swell. At this time about 75% of the remaining rootstock above the graft is removed.

The final grading and heading back is done in April after the newly grafted scions have leafed out. In May the plants are moved to a shade house and hardened off. By the end of May the propagation phase can be considered complete and the grafted liners are ready for planting out, potting on, or liner sales.