

# Grafting Evergreen Magnolias At Monrovia Nursery

By Richard Wells

*Magnolia grandiflora* is easily propagated by seed. In southern California, magnolia seed ripens during October and November and is abundant. Seed is collected, cleaned, and stratified for 30 to 60 days prior to planting in February. Germination rates are normally high, occurring over a 30- to 60-day period. Seedlings are potted into 2" x 2" x 5" bands when they have two to three leaves and are ready for shifting into No. 1 containers by early fall.

The trees resulting from seed production are, of course, highly variable in form, leaf size, leaf color, flowering, growth rate, and tree size. For this reason, over the years many selections have been made and named. At Monrovia Nursery Company we are currently producing four cultivars: M. 'Majestic Beauty™', M. 'Saint Mary,' M. 'Little Gem,' and a cultivar (as yet unnamed) selected for its large fragrant flowers, long period of bloom, and hardiness. All combined, we graft over 35,000 magnolias a year. The following

is a description of the grafting method we use.

Because of the large diameter of the scion wood (10 to 12 millimeters), we must use No. 1 containers for our rootstock. Seedlings of *M. grandiflora* must grow for approximately one year in the No. 1 containers to attain suitable caliper for grafting. This means that the understock is two years old from the time the seed was originally stratified. During September, all of the understock is pruned to a height of 24 inches. This assures uniformity within the grafting tents later. The understock has usually been staked to help produce a straight stem and good working area for the grafters.

During the first part of November, as there has been some cold weather, we begin to prepare the understock for grafting. The stake, all side branches, and most of the leaves are removed. We leave only three to four leaves at the top of the plant. Most of the leaves are removed to permit sunlight to reach the grafts. This sunlight is helpful in preventing disease and also encouraging the scions to grow.



In common side graft the scion, which has long tapering cuts on two sides, is inserted firmly into a 5-6 cm cut in the understock.

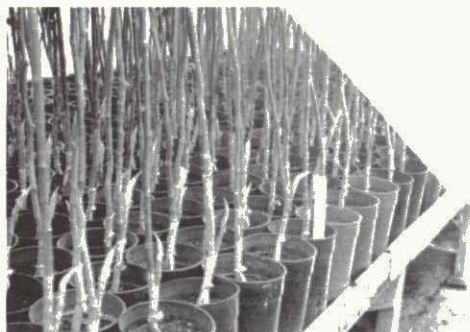


After scion and stock cambial layers are carefully aligned, the graft is tied from the top down with a rubber budding strip.



*Growth starts by the end of the second week, as shown here, and the tent is then opened for brief periods three times a week.*

The plants are then brought into the greenhouses and placed "can tight" into grafting tents. These tents are constructed on raised benches. They are approximately 30 inches in height and are covered with clear polyethylene. The tents provide an environment of high humidity and warm temperature for the grafts. To help prevent disease, we install a small convection tube in each tent. This keeps the air circulating within the tent and helps prevent condensation on the graft scions. Once the tent is filled, the understock is sprayed with Physan (a



*Newly grafted plants, which are kept to uniform size, are placed in a grafting tent, and it is now ready to be closed.*

general disinfectant) and allowed to dry. Prior to grafting, all understock will also be sprayed with Benlate (a fungicide).

All scion wood is collected from trees planted within our nursery. These stock plants are watched closely to ensure vigorous, healthy scion wood. We use only tips which are cut 20 to 25 centimeters in length. All foliage is stripped from the scions and they are disinfected in a Physan bath and then dipped in a Benlate drench. They are then placed in plastic bags and stored in a cooler at 38° F to 40° F until needed. We try to use all scionwood within three to four days.

We use a common side graft on our magnolias. A longitudinal cut is made into the understock about 5 to 6 centimeters in length, ending at a point one fifth the diameter of the plant. The two cuts on the scion will also be 5 to 6 centimeters. The scion is then inserted into the understock and special care is taken to align the cambial layer on at least one side of the graft. The graft is wrapped from the top down with medium tension. A 3/8" x 8" rubber budding strip is used, with a half-hitch placed at the bottom. No sealing compound is used.

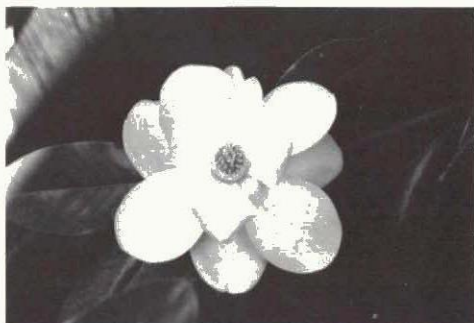
When we finish grafting a bed, the plants are again sprayed with Benlate and the plastic cover is sealed. The tent will remain closed for two weeks.



*This plant of Magnolia 'Little Gem' is shown four years from graft.*



*Magnolia grandiflora* 'Majestic Beauty.'



*Magnolia grandiflora* 'Saint Mary.'

By the end of the second week, the first signs of growth on the scions can be observed. At this time, we begin opening the tents for brief periods three times a week. Within another week or two, the scions will start to unfold their first leaves. When the plants have two or three fully opened leaves, they are ready to be removed from the tents. They are placed on open benches within the greenhouse, where they are misted as needed for two weeks. After this time, they are moved outdoors to a shaded area and the misting continues for an additional two to three weeks.

The transplanting of the grafts into No. 5 containers is done between March and May. It is best to have this job completed prior to hot weather. We normally do not completely remove the understock until about August; rather, we let it act as an umbrella, protecting the tender scion until it has had a chance to grow and toughen up. It is not necessary to remove the rubber strips since exposure to the sun quickly weakens them and they fall off. Most varieties will grow to a height of four feet by the end of the second year.

Supervising the grafting is one of the jobs I like best working as assistant propagation manager at Monrovia Nursery Company. I am a '73 graduate of Cal Poly University's Ornamental Horticulture Department at Pomona, California. For the past seven years I have greatly enjoyed my part in the

production of over 20 million plants a year of some 1200 varieties. Discovering new and better ways to produce our "Distinctively Better Plants" is always a challenge.



*Magnolia* 'Ruby-Rose,' a seedling of *M. dawsoniana* belonging to Rose Del Grosso, has been submitted for registration by Gene German of Fort Bragg, Calif. He believes it is a hybrid but is uncertain of the pollen parent.

Flower 25.5 cm (10 inches) in diameter with 12 tepals, most 11.5 cm by 6 cm (some narrower), spreading, two standing upright in the center, some reflexed; inside, near white at base to red-purple group 62D (RHS color chart); outside, red-purple 68A at base to red-purple group 67D at upper end; stamens 104, 1.9 mm long, curved, red-purple 67C; bud darker than flower before opening; blooming period (northern California) Feb. 25 to April 8.