

The Pitfalls of Grafting

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Pitfall 1: Translucent-white, 4-mil Plastic on Cold Frames. A couple of winters ago I covered my cold frames with translucent-white, 4-mil plastic. Before, I had always used clear plastic. I speed up callusing with a hot callus device and it is necessary to have a totally hermetic seal on the grafted area. I use laboratory parafilm to hold the graft tight and seal it at the same time. The grafts spend 2 weeks in the callus device, transplanted into 1-gal containers, and put into the cold frames in February. The translucent-white plastic apparently filters out the sun rays that degrade the parafilm and the plants were effectively girdled. It is not necessary to cut the parafilm when it is under clear plastic as the parafilm will degrade.

Pitfall 2: Hot Callus Device Temperature Pitfall. My hot callus device is outside with a poly covering to protect it from low temperatures. I placed a thermometer a couple stations from the thermostat. The heat wire broke just down from the thermometer so the only grafts getting callused were the dozen or so above the break in the heat unit. The only ones I checked had good grafts and good callusing. The other 340 had no heat and no healing since they are put in the tube with dormant rootstock and scion. The temperature was 40 to 50F.

Pitfall 3: Too Much Water. Some understocks are very fussy about how they are watered. True firs are a good example. A normal amount of irrigation on your other plants will cause stress and even death for those plants that do not like too much water.

Pitfall 4: Weevils. If you get some understock from someone new, be sure to bareroot a few and take a good look for weevils. You might graft them all and down the line the understock will start to die because it is girdled.

Pitfall 5: Labels. About 20 flats of bench-grafted conifers, rare, unusual, and new to me, had been grafted for a few months and it was time to take them out of the greenhouse. Due to the rarity of these plants each one had a flat pointed name tag in the pot. It was late in the day so they were put just outside the greenhouse on the ground. My hoe hands, all 25 of them (weeder geese) systematically removed all the name tags that evening.

More Pitfalls Without a Lot of Detail. If you graft a hardy cultivar with two needles on *Pinus contorta* and send it to a customer in Zone 4 or below it is sure to die. Make sure your understock is hardy in your marketplace. People who grow seedlings can tell you what area and hardiness they are from.

In bench grafting, if your understock has roots that are inactive and you graft it at this time, failure is likely. I like to see 1/4-in. white tips on the roots or indications of buds swelling.

When I receive scionwood in a brown bag by mail, taking 5 or 6 days to arrive, I am reluctant to bother grafting it. I like to cut scion wood for bench grafting around January. I immediately do a quick dip in one tablespoon benlate and 3 gal of water. I use paper towels. Get them thoroughly wet and then ring them out. Seal the towels and scion in a plastic bag and store at 36 to 40F.

Timing When Bench Grafting. If the understock roots are inactive, even if the scion is healthy and the graft was made technically correct, the chances for failure are good. Again, it is important to look for 1/4-in. white tips on the roots or indications of buds swelling.

Propagation Stock Orchard Management and Wood Selection of Fruit and Ornamental Plants

Jonathan La Forge

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Propagation stock sources at L.E. Cooke Co. vary from purchased liners, seedlings, budwood, grafting wood, seed, tissue culture, and unrooted cuttings from seedsmen and commercial suppliers in the U.S., arboretums, and government repositories, to our own 60 acres of seed orchards, bud-scionwood orchards, 5 acres of cutting beds, and 20 acres of field division blocks and berry tipping beds. Because we practice a foundation stock plant program, L.E. Cooke also has Foundation screen houses, a registered mother block, and registered scion and seed tree blocks. These sources provide the 1300 cultivars in our production of 7 million trees per year and over 3500 cultivars in our total collection, many under evaluation from plant breeders and our own customers.

In any discussion of management of these sources, the use of their products controls the stock plant treatment.

<u>Source</u>	<u>Harvest Time</u>	<u>Product</u>
Berry-tipping beds	Mid fall	Rooted tips
Shrub-cutting beds	Winter	Hardwood cuttings
	Spring-summer	Softwood cuttings
Field division blocks	Fall	Division planters
Seed trees	Summer-fall	Seed for rootstocks, ornamentals
Cutting stock trees	Fall-winter	Hardwood cuttings
	Mid summer	Softwood cuttings
		scion/budwood trees
	Winter	Graftwood, bench-grafting scions, spring budwood
	Late spring	June budwood
	Summer	Summer-dormant budwood
Registered increase rows	Fall	Fall budwood
	All	All types, new clones
Screenhouse foundation virus-free trees		New mother blocks, budwood for new mother blocks