

# Grafting

By Leo Manuel (phone: 858/484-9280, email: rarefruit@san.rr.com)

Beginners may want to practice grafting with fruit trees that are easier. Apples and pears are probably easiest with peaches, plums, nectarines, and apricots a bit more difficult. Success will give you confidence to try anything. Below are descriptions of four grafts: Cleft, Splice, Whip-and-tongue, and Saddle. I use the Whip-and-tongue most frequently, followed by the Cleft graft. I seldom use the plain Splice and have never used the Saddle graft. There are other grafts used in top working older trees.

**Tools and equipment:** It helps to have a sharp knife. I like to use one with a straight edge, rather than a curved one, as most pocket knives have. I like to use single-edge razor blades for cutting the tongue for the whip-and-tongue graft. They are available in most hardware and drug stores. I like Freezer Tape, hard to find, but it doesn't disintegrate when exposed to the weather for a year or more, and acts as a I.D. tag (if you use non-fading ink to write) until after the graft begins to grow and you use a metal tag for more permanent identification. Knives and grafting tape are available in A.M. Leonard catalog (800-543-8955.) They also have a wide variety of clippers, other garden tools and aluminum plant ID tags.

**1. Cleft Grafting:** I sometimes use a cleft graft, especially for scions that are very small in diameter. It is useful for beginners, but you should try the other types as well. It is easy to wrap the union, unlike the plain splice graft. Place the scion so that the cambium is in contact, at least on one side, but both, if possible.



Figure 1 Cleft Grafting: Rootstock Cleaved To Match Scion Diameter

**Cleft Grafting: Usually used for topworking older trees, but here used for small diameter scions and rootstock. (Scions from 0.25" to 1.00")**

**2. Splice Graft:** Splice grafting (Figure 2) is used to join a scion onto a rootstock. This simple method is usually applied to materials that callus or "knot" easily, and is used on plants with a stem diameter of 1/2 inch or less. In splice grafting, both the stock and scion should be approximately the same diameter. A small piece of adhesive tape can hold the scion and rootstock together while you wrap plastic tape tightly around the two.

**Parafilm can be used to wrap the entire scion, instead of using the plastic bag.**

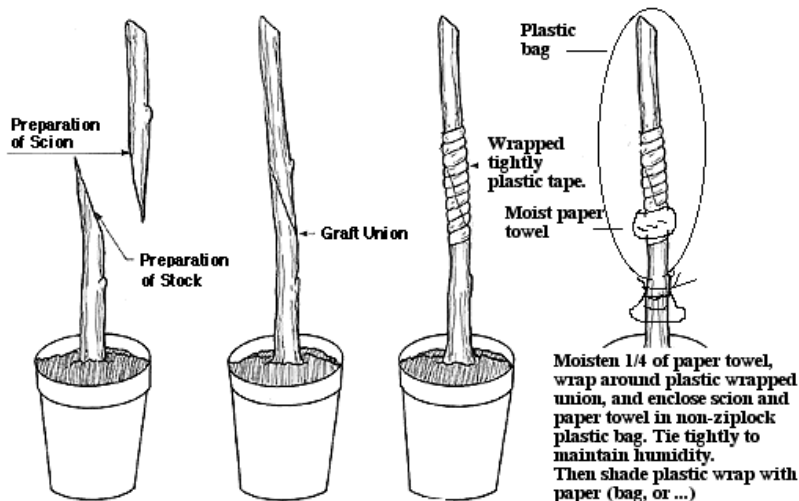


Figure 2: Splice Grafting

cooking the scion. The paper may be a paper bag, or a 8.5 x 11 inch white printer paper wrapped around the bag, tied with string below, and folded at the top to keep sun rays out. However, you can open the top and look in to see if the graft has begun to grow.

Preparing the Stock and Scion. Cut off the rootstock using a diagonal cut 3/4 to 1 inch long. Make the same type of cut at the base of the scion. [Note: Longer than 1 inch may be used when the grafts are known to be difficult to take. More cambium contact increases the probability of success.

Inserting the Scion. Fit the scion to the stock. Wrap this junction securely with rubber grafting strips or plastic tape (the latter is my choice.) Wrap tightly.

Moisten 1/4 of a paper towel and roll it into a small diameter roll. Wrap the paper towel around the union area, and place a non-ziplock plastic bag (used bread wrapper, etc.) over the top of the scion and over the paper towel. Expel most of the air and tie the bag tightly below the paper towel. Lastly, cover the plastic with a paper cover to keep the sun from

## Grafting (continued)

**3. Whip and Tongue Graft:** The whip and tongue technique (Figure 3) is the one I have used most frequently. Both the rootstock and scion should be of equal size and preferably no more than 1/2 inch in diameter. The technique is similar to splice grafting except that the whip on the rootstock holds the tongue of the scion in place (and vice versa). This leaves both hands free to wrap the joint.

Cut off the stock using a diagonal cut. The cut should be four to five times longer than the diameter of the stock to be grafted. I usually have a diagonal cut of about 2 inches. Make the same kind of cut at the base of the scion.

Unless your knife is very sharp, use a single-edge razor blade to cut the 'tongue.' Begin the cut about one-third of the distance from the tip. Draw the blade down at an angle through the wood and pith. Stop at the base of the initial diagonal cut. This second cut should not follow the grain of the wood but should run approximately parallel to the first cut.

Prepare the scion in the same way. Fit the scion into the rootstock so that they interlock whip and tongue. Be certain that the cambia are aligned.

Wrap the junction tightly with a non-adhesive plastic tape. Tie it off. To keep the scion from drying out and dying, moisten a piece of paper towel, roll it into a small diameter length and wrap loosely around the plastic tape. Pull a transparent plastic bag (non-ziplock) over the scion and tie tightly below the moistened paper towel, after expelling most of the air from the bag. Then shade the plastic bag with a paper bag or sheet of typing paper until the scion begins to grow. (This may begin within a few weeks, and the bags will be removed when the growth has filled the plastic bag. Leave the tape around the joined parts for several months, to be sure that it's well-knitted.)

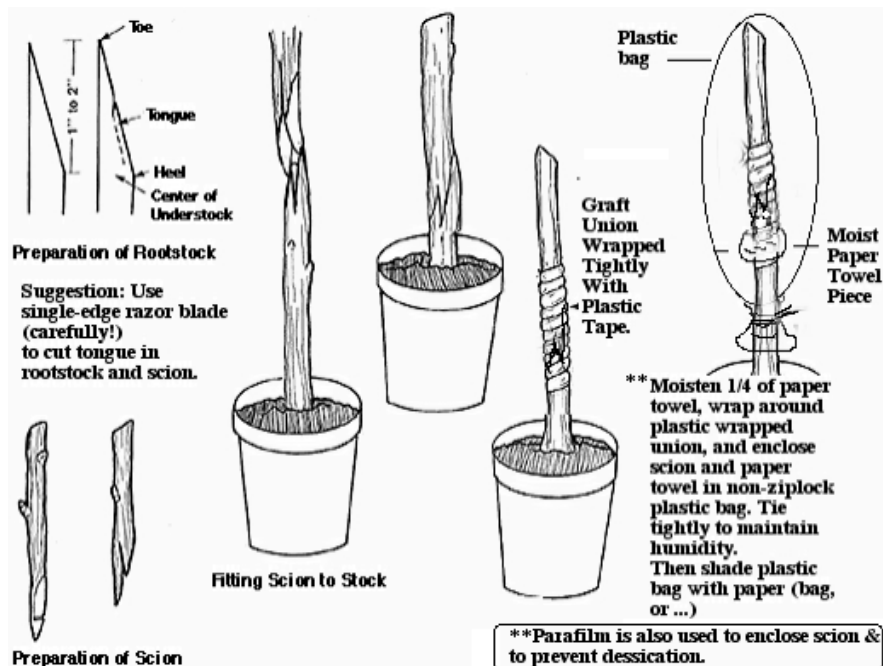


Figure 3. Whip and Tongue Graft

**4. Saddle Graft:** Saddle grafting (Figure 4) is said to be a relatively easy technique to learn and once mastered can be performed quite rapidly. The stock may be either field-grown or potted. Both rootstock and scion should be the same diameter. For best results, use saddle grafting on dormant stock. Stock should not be more than 1 inch in diameter.

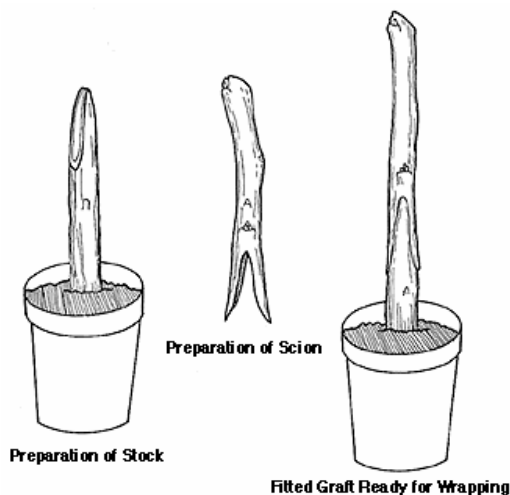


Figure 4: Saddle Graft

Using two opposing upward strokes of the grafting knife, sever the top from the rootstock. The resulting cut should resemble an inverted V, with the surface of the cuts ranging from 1/2 to 1 inch.

Now reverse the technique to prepare the base of the scion. These cuts on the rootstock and scion must be the same length and have the same slope so that a maximum amount of cambial tissue will make contact when the two halves are joined.

Place the V-notched scion onto the saddle of the rootstock. If rootstock and scion are the same diameter, cambial alignment is easier; otherwise adjust as needed. - Wrap the graft as in the previous techniques.

**Any questions on this article, please contact Leo Manuel at 858/484-9280 or by email at rarefruit@san.rr.com**