

TREE GRAFTING



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- Three Models
 - Saddle or cleft grafting
 - Whip or tongue grafting
 - Bark grafting



About the models

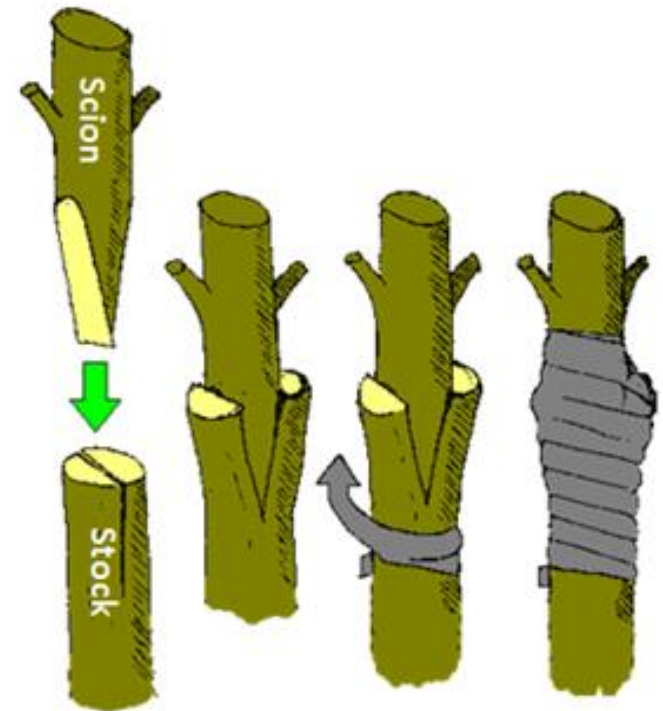
All three models demonstrate how a scion from a desired tree variety can be fitted onto root stock from a tree of the same species to propagate a desired variety. For all three methods, the scion is a twig from the new growth of the desired variety, long enough to have three to five buds on it. The scion is taken (and the entire process is done) in early Spring during budding.

For saddle or cleft grafting and for whip or tongue grafting, the root stock stem size should match the size of the scion. For bark grafting, the root stock is much larger, so that more than one scion can be grafted onto the same root stock, allowing cross fertilization and multiple varieties.

Saddle or Cleft Grafting

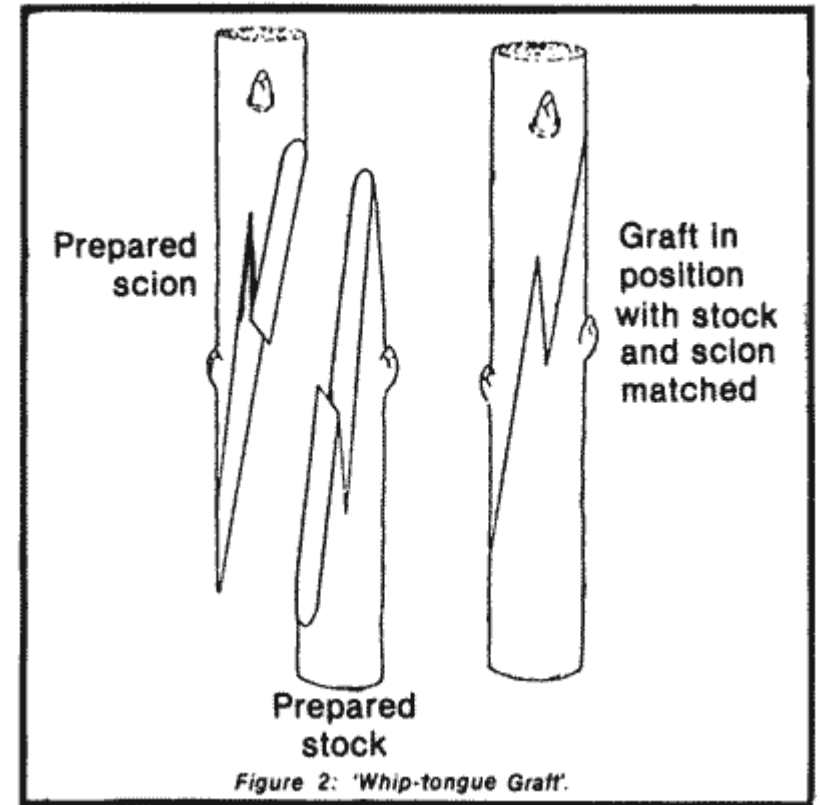
Saddle grafting is done by cutting a vertical slit in the root stock and a matching v-shaped point on the scion. As the model shows, the pointed scion can be inserted into the slit, or cleft, in the root stock so that the green cambium layers just inside the bark touch each other as much as possible.

The cambium layer on the scion extends along the outer edges of the v-shaped point and fits along the vertical cambium layer on the two outside edges of the slit or cleft in the root stock. The friction of the v-shaped point holding the cleft open creates stability.



WHIP OR TONGUE GRAFTING

In whip or tongue grafting, both the root stock and the scion are sliced on single-slant, matching angles (greater than 45 degrees) so that the entire cambium layer at the outside of each fits together along the slanted surface. Then a vertical slit is cut in each perpendicular to the axis of the slant and closer to the tip of the slant. When the slanted surfaces are parallel, the upper edge of the slanted surface on the scion, above the slit, fits like a tongue into the slit in the root stock. They can be pushed together so that the cambium layer in each mates up when the slanted surface of the scion rests on the slanted surface of the root stock. The friction created by the tongue fitting in the root stock creates stability.



BARK GRAFTING

In bark grafting, one or more smaller scions are grafted onto a much larger root stock. Each scion is sliced at one end to create a single-slant point. The bark on the root stock is sliced at the top of the root stock to create a vertical slit in the bark, leaving the cambium layer intact. Then the scion is inserted into the slit, bark side or tip out. When the scion is angled out slightly from the root stock, the slanted surface of the scion lays flush along the cambium layer of the root stock so that scion's cambium layer, all the way around the slanted surface, touches the cambium layer of the root stock. The friction between the bark on the scion and the bark on the root stock creates stability.



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Once the grafts are fitted together, the grafted area is wrapped with rubber band material, electrical tape, or bicycle inner-tube to seal out air and protect the exposed surface. The moisture in the exposed part of the scion must be conserved by covering the scion with warm paraffin or a plastic bag. If electrical tape is used, it must be removed after about three weeks. If the grafts are outdoors, they should be shaded.

