

Bench grafting fruit trees

Bench grafting is where you graft a piece of scion wood onto a rootstock to grow a new tree. It is carried out in late winter or early spring, using dormant scion wood from a tree of the variety you want to propagate. There are many different methods of bench grafting, but the whip and tongue is a good one with high success rates.

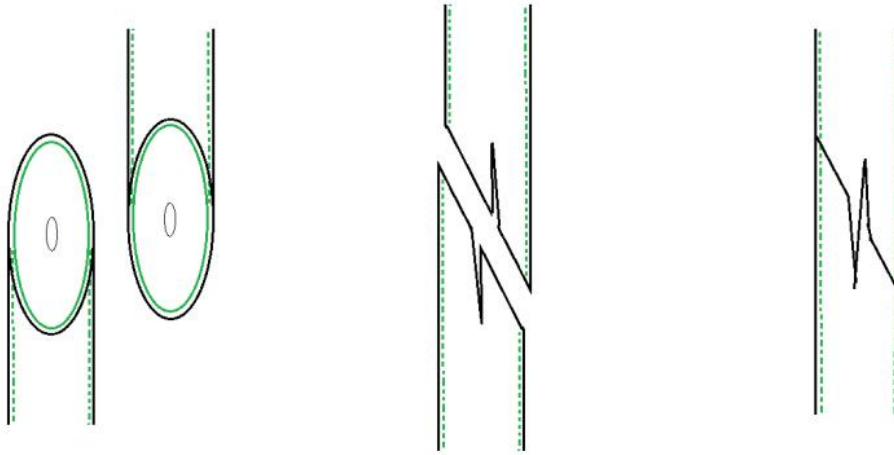
Whip and tongue method

The 'whip and tongue' graft is probably the most widely adopted method of bench grafting. It is best done with root and scion material of the same thickness as this maximises the chance of cambial contact all the way around. The cambial layer lies between wood on the inside and bark on the outside, and grafting is enabled by joining cambial layers in the scion and root through corresponding cuts joined end to end and then bound. The interlocking 'tongues' add structural support to the join as the cambial layers heal and fuse together, as well giving a larger surface area of cambial contact.

This graft is best done in late winter or early spring and it is extremely important that the scion wood is dormant, with no signs of growth.

It is well worth practicing this on some spare pieces of fruit scion beforehand so that you are confident with the cuts you are making.

Be careful not to touch the cut surface of either your scion or rootstock, as oils from your skin can interfere with the healing of the graft.



The graft

- Make a slanting cut in the rootstock with a sharp grafting knife. You are looking to create an oval cut face between about one and two inches long. This cut should ideally be done in one go, as this slice needs to be smooth and flat. Longer cuts will give better support, but are more difficult to get completely flat, as well as bind tight along the length of it. The best way to make this cut is by holding the knife in your dominant hand, the wood in the other, and cut with a pulling motion parallel across your chest and away from the hand holding the wood. Using a straight edge, like the back of your grafting knife, you can assess whether your cut is straight, if not, try doing again. It is worth getting this bit right.
- Make a corresponding slanting cut in your scion wood.
- Match up these cut surfaces, to check that they are the right length, and that if held together the cambium layers match up. Make any adjustments to your cuts if necessary.
- Make another cut downwards into the rootstock, about one third of the way from the top of the cut face, about half an inch deep. This is a dangerous and difficult cut, as you are often cutting towards your hand that is holding the rootstock. To minimise the risk of damage, press your thumbs together to 'lock' them, which will give you more control and reduce the chance of the knife slipping.
- Make a matching cut of equal depth in the scion wood. These cuts create the 'tongues' that will interlock and hold the join fast.
- Line the cuts up, and slide them together, making sure to interlock the tongues. Check again that the cambium layer of each is in contact with the other. This is crucial to the success of the graft.
- Wrap the graft tightly with grafting tape or other plastic. This helps keep the cut sides pressed firmly together, and also reduces the loss of moisture from the cuts. Tie off with a two half hitch knots and cover with grafting wax. Alternatively you can tie it together with string or even elastic bands, covering the grafted area with grafting wax afterwards to make it watertight.
- Cut the scion wood to two good buds above the graft and cover this cut surface with grafting wax to seal it.
- Label with the variety, the rootstock, and the date of grafting. It is all too easy to forget what you have by the summer.

Aftercare

- The graft needs to heal before your new tree will start to grow. This can take anywhere from a couple of weeks to a couple of months, depending on the conditions. Once the top bud has grown an inch or so you can be happy your graft has taken.
- Once it is clear that the graft has successfully taken, cut off the weaker of the two buds, as well as any buds below the graft.
- Carefully remove the tape around mid-summer. If it has taken the graft should be healed and the young tree growing. If you wait too long to remove the tape, you can strangle and kill the graft.
- Grafts that have taken and grown over the summer can be planted over the winter, or grown on for another year first. If you do plant them out the winter after grafting especially, make sure to clear the area of plants as these will compete for water and may grow to out-shade your young tree or create a microhabitat that is too humid for the young tree.