

Appendix A: Planting of Trees

Bare-rooted fruit trees should be planted from November to March before they come into leaf. Planting should be avoided during droughts, hard frosts or particularly cold, windy periods. The correct planting of a tree is crucial to its long-term survival. The following steps should be followed.

1. **Site preparation.** The site needs clearing before any orchard can be created. Brambles, nettles, thistles and other weed species must be controlled by regular mowing, hand pulling or digging; herbicides should be used sparingly in this area. The grassland needs careful attention; sward height should be kept between 5 and 15cm. Hedges can provide good windbreaks.

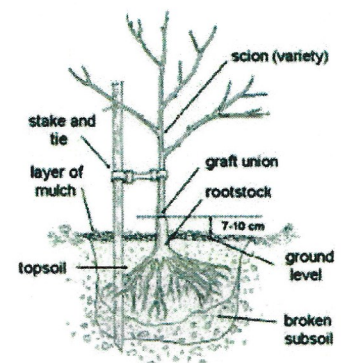
2. **Planting pattern.** Mark out with canes should be done carefully as trees cannot be moved easily once they are planted. Spacing depends on the species of trees and the rootstock. All the selected apple, plum, gage and pear trees grown on MM106, St. Julian 'A' and Quince 'A' rootstocks can be grown as free-standing trees at 4-5m spacing or trained into other more compact forms such as fans, espaliers or cordons. All grass and weeds should be removed in a 1m diameter circle around each tree station prior to planting, either by physical stripping or spraying with a suitable, non-residual herbicide.

3. **Digging the hole.** A hole should be dug as soon before planting as possible. It should be no more than 50cm deep and just wide enough to accommodate the roots without bending them. It can be dug mechanically but back-filling should be done by hand. The removed soil should be put in separate piles: one for the turf, one for the topsoil and one for any subsoil. Removing large stones and breaking up the bottom and sides of the hole will allow better drainage and root penetration.

4. **Staking the hole.** A stake should be driven into the bottom of the hole before planting so that the tree's roots can be arranged around it. This will protect the root collar and graft union until the root system become established. The stake should be on the upwind side of the tree and extend 30cm above the ground level and allow for the stem of the tree to be about 10-15cm away from it.

5. **Priming the hole.** Some topsoil should be placed in the bottom of the hole to bed the roots on. Organic matter and fertilisers should not be added as these can damage soil structure, create drainage sumps, discourage the roots from spreading and impede relationships with beneficial mycorrhizal fungi in the soil.

6. **Planting the tree.** The tree should be placed in the hole so that the graft union is at least 7cm above the ground level and clear of any mulching material to avoid disease and prevent the scion from rooting. The tree should be rotated to obtain the best fit ensuring the roots are spread out and not pointing upwards. Excessively long roots should be trimmed to fit the hole rather than twirled round the sides. The hole can then be backfilled with the remaining topsoil, whilst shaking the tree gently and ensuring it stays vertical. Fertilisers should not be used. The soil needs to be gently firmed in to remove any air pockets, taking care not to compact it. The tree should be fastened to the stake above the graft union with a suitably flexible tie that holds the tree firmly upright but allows some movement. Any formative pruning should be carried out.



7. **Grass and weed control.** The 1m diameter circle around the tree should be kept clear of all vegetation for 3-4 years to reduce competition for water and nutrients. This can be achieved by hoeing, using weed-suppressing mats or by mulching. Mulching is preferable because it helps retain soil moisture, raises soil temperature in the spring and breaks down to provide a slow release of nutrients but it can draw nitrogen out of the soil. Any wood chippings must be free of honey fungus.

8. **Guards.** Roaming dogs, cats and other livestock can damage young trees. Guards give some protection but should not be fastened to the tree or rub against, constrict or damage it in any way.