

How to choose your trees?

Selecting the right trees is key to a successful orchard. These are the trees that will be here for decades to come and trees don't like being moved.

By picking trees that are suited to your site conditions (soil type, local climate, microclimate etc.) and varieties that have high pest and disease resistance, you are less likely to have to resort to chemical use (i.e. fungicides and pesticides) to protect your trees. So what are the key considerations for orchard tree selection?

What fruit do you like?

- This seems obvious but it is worth considering; only plant species and varieties that you like to eat! This can be a really fun part of the consultation with the orchard group, trying different varieties, their juices and products.
- Apple days and farmers markets are great places to try some different UK grown varieties; there are thousands to choose from, all with their own unique flavours and textures.
- Brogdales, the national fruit collection, www.nationalfruitcollection.org.uk can send bespoke apple variety boxes which are a great way of getting hold of some unusual varieties to try.
- Apple days and events like cherry festivals are great places to try new fruits. You may also be able to try quince jam, medlar jam, and chutneys, etc. at these events. It's also worth finding out if there are any local harvesting groups like the Abundance network <http://www.abundancenetwork.org.uk> as they may have products like these that you can try.



How to extend the fruiting season?

By selecting species and varieties with a range of harvest times you can close our temperate climates' fruit 'hungry gap'.

- With cherries and plums available to pick from July, the earliest apples ready in August, you will be eating fresh fruit long before the autumn harvest season kicks in.
- By picking apple varieties that hang on the tree over the winter and those that can be stored (some even improving in flavour and texture with age), you can continue to enjoy the fruit of your orchard long into the New Year.

Bare rooted or potted?

Nursery trees usually come potted or bare rooted (the tree is taken from the ground, its roots reduced and all the soil carefully removed). The former can be planted all year round, but due to the weight of the soil, these are generally more expensive to buy in bulk. The latter can only be planted during dormancy (the winter months when the trees have no leaves) but are cheaper to buy in bulk as they can be wrapped up easily, are lightweight and take up less space than trees standing in pots.



1 year maiden or 2 year bush?

1 year maidens are single-stemmed trees that have been grown for one year after grafting. They are the cheapest size of tree to buy, and will establish more quickly (the older the tree, the less it likes to be moved!). However, you will have to wait longer before you get something that starts to resemble a tree and gives you fruit. Maidens are used if the tree is to be trained as a cordon, espalier or fan

2 year bush and half standard trees have been grown on for two years after grafting and have some side branches; the beginnings of a canopy. There is often confusion around the terms bush, half-standard and standard, but they simply refer to the length of clear stem before the first branches when full size. Bush does not necessarily mean small as you can train a tree on vigorous stock, say M25, as a bush form for example. Below are a few more key features:

- Bush forms have a clear stem of 30-50cm before the first lateral branches.
- Half standards have a clear stem of around 80 cm.
- Standards have a clear stem of around 1 m and are usually on more vigorous rootstocks. Traditionally livestock were grazed underneath and the branches were too high to be nibbled. They tend to take longer to fruit and will need ladders or long handled pickers to harvest and as a result they aren't widely used for community orchards.
- Planting a two year tree with branches, feels like planting an actual tree, not a spindly twig, and so can be a better choice for community orchard plantings!
- A useful table covering form and size can be found at: <http://www.orangeppintrees.co.uk/articles/fruit-tree-sizes>



Cordons, espaliers and fans

Fruit trees can be trained as two-dimensional forms against vertical surfaces in the form of cordon, espaliers and fans. This can be an efficient and aesthetically pleasing use of under-utilised space and can form boundaries and borders.

South-facing sunny walls form a great microclimate for more tender fruits like peaches and nectarines. As the trees are kept smaller, more can be fitted into a smaller space.

Although the yields will be smaller, as there are fewer branches and therefore fruit bud, the size and quality of the fruit is better as all the trees resources is split between fewer fruit. Each fruit can receive more sunlight as there is little shading.



Tip-bearing varieties are not used for these forms as the fruit bud will be lost when pruning.

Rootstock and spacing

When selecting rootstock there is a balancing act between height and spread of full size trees, ease of picking, and suitability for your soil type/conditions.

The smaller or more dwarfing the root stock, the more TLC the tree will need. Very dwarfing are more like annual veg in their needs; they will require staking and watering for their whole life. This is an important consideration as it will mean more aftercare, whereas more vigorous stock will have increased independence after a few years.

Don't be confused by the names of apple rootstocks – they all sound like motorways! The numbers do not relate to the overall size of the tree. M27 is the smallest, M26 semi dwarfing, M25 are really big. The M stands for Malling which is where the stock was developed and the number simply the number of the bed they were raised in. Where there are two M's, (MM106) refers to collaboration between Malling and Merton research stations.

Rootstock recommendations

- ✓ We generally recommend using semi-vigorous rootstock, MM106 for apples. They tend to be hardier, that is they'll tolerate a bigger range of soil types, they'll require less care overall and will largely be able to provide for their own water needs once established, and will give a longer lasting



tree that has higher biodiversity value, cropping earlier. However, if there is space, we also recommend planting larger trees, apples on M25, 111, or pears on pyrus stock, or mulberries etc. Sadly, fewer of these trees are being planted but they are longer lasting and provide good habitat as they develop veteran characteristics with hollowed out trunks and branches.

- ✓ If you have poor or shallow soil, then a much more vigorous rootstock should be selected. The poor soil will be a limiting factor that has a dwarfing effect on the tree e.g. an apple tree on M111 may grow to be over 5m tall in ideal conditions, which may be too big for your orchard. However, if planted on poor soil, there will be a dwarfing effect so you may only get a tree of 3m. This is not an exact science as there are many variables.
- ✓ Some fruit varieties are more vigorous than others, that is the scion, and therefore the above ground portion of the tree, will grow faster and bigger. So, if you choose a vigorous rootstock along with a vigorous variety (like Bramley's Seedling for example), you're going to get a much bigger tree than another variety on the same rootstock. Some varieties have quite feeble growth, for example Cox's Orange Pippin (which, incidentally, is a hard variety to grow organically and so not a good choice for a community orchard, despite its terrific flavour!). So, a Bramley and Cox's Orange Pippin planted side by side on the same rootstock will give you two very different sized trees.

Spacing

- ✓ It is much better to plant fewer trees farther apart than squeeze in too many. Planting too densely can lead to competition, canopy congestion and higher incidence of pests and disease.
- ✓ Give the trees generous spacing to avoid competition for moisture and nutrients. Don't forget - the roots spread further than the full sized canopy width. Many of the nursery guides online give spacing that is more suited to commercial orchards where yield is maximised. For example, for apples on MM106 (or other fruit equivalent) often these guides say 3m apart, we give 5m.
- ✓ Planning exercise ideas. Mark out the positions in the field with tape measure and canes to represent the trees. This will help you to get an idea of how many trees you have room for and will help people to visualise the orchard before planting.



- ✓ Make scale plans of the orchard and cut out different coloured circles to scale to represent the trees at their full size (for example, MM106 apple circle would represent 4m wide circle)
- ✓ Generally, pears are fussier and require more fertile soils to be successful.
- ✗ **Planting trees too close together is a common mistake and it can be a painful job picking which trees to dig up when the time comes.**

A word about pollination groups

- ✓ In order to set fruit, most fruit trees require pollen from another tree of the same species so this needs to be considered when choosing what to plant. However, depending on how close your orchard site is to human settlements with gardens, it may not be something you need to be too concerned about.
- ✓ Pollination is an important topic when growing fruit trees. Many varieties - but certainly not all - require pollination from a compatible donor tree before they can set fruit. However it is a natural process that almost always "just works". Some simple rules of thumb: If you are in an urban environment you probably won't need to worry about a pollination partner for your apple tree - there will usually be compatible apple trees or crab apple trees in neighbouring gardens and hedgerows. Pears, plums, and cherries are a bit less widely-planted though, and you can't assume there will be others nearby, but try asking around.
- ✓ For varieties which are not self-fertile, and require a pollination partner, the partner has to be a different variety of the same fruit species. Two trees of the same variety will not pollinate each other.
- ✓ If you are in an isolated area and only want to plant one tree, choose a self-fertile variety.
- ✓ If in doubt, and you have space for more than one tree of the same species (e.g. 2 apple trees or 2 plum trees), plant two compatible varieties. (If doing so, it is a good idea to choose varieties that have different picking times so that you have a spread of fruit through the season).



Orchards: more than just apples and pears!

With orchards, people often only think of apples and pears. Yes, the UK has a long and rich heritage of growing these fruits, but there are so many more types of fruit that can be grown here. Plums, gages, damsons, quinces, perry pears, medlars, mulberries etc have been traditionally grown in the UK and all have their own unique characteristics as trees and uses for their fruits.

We are living in a time of unprecedented climatic change, so this too needs to be considered as the rate of change is already making an impact on food growing. Now is the time for experimenting with more 'exotic' or 'tender' fruits

that will flourish in the warmer decades to come. Apricots, peaches, nectarines and figs are all doing well in London and the South East and there are people now experimenting with olives, persimmons and even pomegranates on the South coast!

As climatic zones shift northwards, the rest of the UK is likely to become warmer, meaning that species' ranges (including the trees we plant) shift too.

Martin Crawford of the Agroforestry Research Trust www.agroforestry.co.uk is doing lots of great work around this and supplies a lot of weird and wonderful fruit and nut trees such as:

- Ginko
- Bladder nut
- Buffalo Berry
- Chinkapins
- Pawpaws
- Japanese Raisin tree

Martin applies the 20% precautionary rule: 20% of any new food tree plantings should be experimental as some of the older, heritage varieties may well become less productive as the climate warms, whereas others will begin to flourish.



Don't forget nuts!

Hazels, sweet chestnuts and almonds can all be grown in the UK, providing a tasty source of protein to your orchard.

Arguably the UK should be growing much more of its carbohydrates in the form of nuts from trees; a far more sustainable crop than field after field of high-input grains!



- ✓ Hazels are probably the most hardy, and can be grown in most places in the UK and in partial shade (as long as the soil is well-drained) and can be planted in windy spots as they are wind pollinated and so don't rely on insects.
- ✓ The sweet chestnuts and almonds will do better in the South, requiring a slightly warmer climate. Late-flowering almond varieties like 'Mandarine' are a good bet. However, if you have a lot of squirrels around you may not get to see many of the actual nuts!
- ✓ There are many interesting nut varieties suitable for the UK available from the Agroforestry Research Trust <https://www.agroforestry.co.uk/> - Martin Crawford is an authority on nuts in the UK and may be able to recommend suitable varieties.

Building fertility into your orchard system

Most traditional orchard texts will advise the application of manure and compost annually once your trees start bearing fruit, to ensure that there is no nutrient deficit in the soil. It is true that our 'improved' fruit trees, (fruit varieties that have been bred to be large and juicy) require plenty of nutrients to keep them productive. However, in reality, it can be a quite hard for community orchard groups to acquire and shift large amounts of such heavy, bulky materials so eventually, this can get neglected.



A Permaculture approach involves creating systems that are largely self-sustaining, requiring less human effort overall. This includes the strategic planting of other plants into your orchard that will feed the fruit trees. There are two main categories of these fertility-building plants: the dynamic accumulators, and the nitrogen fixers. The former draw nutrients from deep in the soil through their deep taproots and accumulate them in their abundant foliage. Comfrey is a good example and its leaves can be 'chop and dropped' in situ as a mulch, or made into a liquid feed, both of which provide plenty of potassium, nitrogen and phosphorous. The latter are able to 'fix' atmospheric nitrogen into the soil where it is shared with other plants. Lewis McNeill of the Urban Orchard Project has written about the N-fixing shrubs (some of which can also provide an extra, nutritious fruit crop) www.theurbanorchardproject.org/blog/fruit-trees-need-their-nutrient-fix.

