

There are many factors to consider before planting your orchard or forest garden. Taking time to observe your site and having a clear design can help you put the right plant in the right place from the outset. Careful planning ensures your orchard will thrive for many years to come.

Orchard Design & Plant Choice

Thanks to Patrick Whitefield for allowing us to incorporate information from his book *How to Make a Forest Garden*.

Light and shade

Make sure to distinguish between permanent shade of buildings or evergreen plants and variable shade from deciduous trees. Also bear in mind that perennial plants will start growth earlier than deciduous trees.

Trees

- Most fruits prefer full sun, but some need it more than others.
- Soft fruit grown in bushes generally need less sun than top fruit grown in trees.
- Tender exotics such as peach, apricot, figs and almonds need full sun, mulberries less.
- Some pear cultivars can tolerate some shade, but usually need some direct sun.
- Eating apples need more sun than cooking apples - cookers and plums can manage with just half a day's sun.
- Sour cherries, medlar and hazel are the most shade tolerant (also less nutrient demanding).

Shrubs

- Most soft fruit needs direct sun for at least half the day.
- Autumn fruiting raspberries need full sun.
- Gooseberries, red and whitecurrants can manage less than half a day's full sun.
- White fruit is less attractive to birds.
- Loganberries and elders can give a crop with only indirect light.

Herbaceous perennials

- The most shade-tolerant: mint, sorrel, violets, ramsons, three-cornered leek, Siberian purslane, nettles.
- The least shade-tolerant: Shasta daisy, nine-star broccoli, nasturtium, mashua, Mediterranean herbs.
- Plants with broad leaves are usually more shade-tolerant than those with narrow leaves, e.g. rhubarb.

Walls

Any plants by walls need extra watering and mulching due to drier conditions.

- South, SW or SE facing walls is the warmest spot - all fruit e.g. figs, apricots, peaches, dessert apples, dessert plums, gages, mulberry, quince, grapes and kiwi. Also ideal for Mediterranean herbs.
- West facing walls are the next warmest because afternoon sun is warmer than morning sun. Suitable for: cooking pears and plums, all apples, sweet and sour cherries, hops and soft fruit.
- East facing - early and mid-season pears, apples, plums, sweet and sour cherries and soft fruit.
- NE / NW facing - cooking apples and early season cooking plums.
- North facing (and very shady walls) - sour cherries, early season cooking apples, red and white currants, gooseberries, summer-fruiting raspberries, blackberries, Japanese wineberries, some hybrid berries, including loganberries, and the pear variety, 'Williams Bon Chretien'.

Frost

Frost-tolerant plants, e.g. Asian pear, blackberry, blueberry, cherry plum, Chinese dogwood, elder, hawthorn, hazel, Rubus and Ribes hybrids, *Mahonia*, Munchurian kiwi, medlar, mulberry, quince, roses, Siberian pea tree.

Pollination groups

- If you are in an urban environment, you probably won't need to worry about a pollination partner for your shrubs and trees - there will usually be compatible trees in neighbouring gardens and hedgerows.

- For varieties which are not self-fertile and require a pollination partner, the partner must 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.

Rootstocks

These will determine the tree size and disease resistance.

- Beware nursery guides – they are more suited to commercial orchards where yield is maximised.
- Generally, pears are fussier and require more fertile soils to be successful. They can, however, withstand wetter conditions than apples.
- The smaller or more dwarfing the rootstock, the more aftercare the tree will need.
- If you've found that you have poor or shallow soil, then a much more vigorous rootstock should be selected. For example, an apple tree on MM111 may grow to be over 5m tall in ideal conditions but if planted on poor soil or very exposed site, it may only reach 3m.
- Choose a more vigorous rootstock for 'exotic' plants – they will have a better chance of surviving.

Different varieties are more vigorous than others – regardless of the rootstock you choose, e.g 'Ashmeads Kernel' grows almost twice as tall as 'Bardsey Island'.

	Dwarfing	Semi-Dwarfing	Semi-Vigorous	Vigorous
Apple	M27, M9	M26	M11, MM106	M25, MM111
Pear		Quince C	Quince A	Pyrodwarf
Cherry		Gisela 5	Gisela 6, Krymsk 5	Colt, F12
Plum, Gage		Pixy, Krymsk 1, Plumina	Wavit, St Julien A, Jaspi	Brompton
Peach, Apricot		Wavit	Torinel, Krymsk 86	

- **Dwarfing** rootstocks fruit quickly but tend to require more maintenance and permanent staking, with a short lifespan. They are great for small gardens and for sites where children will be harvesting.
- **Semi-vigorous** and **semi-dwarfing** stocks promise the best of both worlds, allowing a healthy, easily manageable tree with accessible fruit, making them ideal for community orchards. But, they can be variable in disease resistance. If you want to provide continuity of habitat for the invertebrates living in veteran fruit trees, you should include a couple of trees on vigorous rootstocks.
- **Vigorous** rootstocks ultimately create healthier and longer-lasting trees with little need for maintenance once established but they take longer to become productive and (because of the higher canopy) require specialist equipment to harvest once mature.

Examples of perennial vegetables From 'Edible Perennial Gardening', Annie Kelsey, 2014, Permanent Publications, p148.

Name	Height/ Width (cm)	Edible Part(s)	Harvest periods / storage	Flowers	Perennial/ Annual/ Other	Other functions in polyculture
Asparagus	To 200	Young shoots	Early spring	Female plants only	Perennial	Attractive foliage
Daubenton's kale	60 x 70	Leaves	All year round	N/a	Perennial	
Nine-star perennial broccoli	100 x 75	Leaves, flower shoots and heads	Autumn to spring	Late spring	Perennial	Flowers attract insects
Sea beet	60 x 60	Leaves	Spring to autumn	Flower spikes	Perennial	
Stinging nettle	To 100	Young leaves	Spring	Late spring	Perennial	Mineral accumulator, insect habitat
Wild cabbage	100 x 50	Leaves, flower shoots and heads	Autumn to spring	Late spring	Biennial or perennial	Flowers attract insects
Wild rocket	60 x 60	Leaves	Early spring to autumn	Summer	Sold as annual, can be kept as perennial	Flowers attract insects, groundcover
Wood sorrel	30 x 30	Leaves	All year round	Early spring	Perennial	Groundcover

This information was adapted from our Community Orchardling Certificate. Learn more about our courses here:
<https://theorchardproject.org.uk/accredited-courses/>

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