

# Planning a new orchard

*The first thing to consider when planning an orchard is the suitability of the site.*

**A soil PH of between 6.3 and 6.8 is ideal** but unless you are planting for commercial returns you are unlikely to want to spend time and money in achieving this. The ground cover will give you clues.

**Waterlogged ground is unsuitable** but drainage may help.

**Sandy soils** don't support big trees as well as heavier soils resulting in leaning trees, which may eventually become fallen trees.

**On shaded sites** trees will grow away from shade and become one sided. Any lack of sunshine means the fruit will not develop or ripen very well.

**A south facing site is not ideal for early flowering varieties** since there is a danger of blossom being damaged by frost so plant mid or late flowering varieties.

**A Southwest facing site** can be at risk from wind since that is the direction of the prevailing wind.

**Flat sites** are obviously the most pleasant to work in and enjoy but have a thought for possible frost problems and maybe plant mid or late flowering varieties.

One of the best uses of a **North-facing slope** is an orchard where you can grow varieties which flower throughout the Spring. This is because the trees are held back a little, avoiding the frost.

**Look for frost pockets.** When planting on a slope, for example, you don't want a hedge on the down slope side that would prevent the frost from rolling down hill away from the trees.

**For windy sites** you should consider planting windbreaks such as a row of Alder trees, that are fast growing and if sided up will provide excellent protection. Remember to leave enough space between the fruit trees and the windbreak. You don't want to protect from the wind only to put your trees in the shade.

**Consider the size of tree you want** bearing in mind the space required for the mature specimen. Imagine the spread of the canopy remembering that the next tree will have the same. You do not want the canopies to touch.

**Plant in rows** with a wider spacing if machinery access is needed. Ideally the rows should run North/South for better fruit development and ripening.

### **Sizes of tree**

- The large vigorous standard M25 will need to be planted at least 6 metres apart.
- MM111 needs much the same as it is also a large vigorous tree but can be planted maybe a metre or so closer.
- The semi-dwarfing MM106 and the M26 can be planted 2.5 to 3.5 metres apart.
- The dwarfing M9 can be planted 2.5 to 3 metres apart.
- The very dwarfing M27 can be planted as little as 1.2 to 1.5 metres apart.

N.B. flowering period does not correspond with fruiting period. An early- mid flowering variety such as Brownlee's Russet fruits in October

When you have decided the tree size then you need to decide the varieties. Tree nurseries are always happy to advise you on suitable cultivars but bear in mind your location as some varieties are a bit fussy. A classic example is the Cox's Orange Pippin. Which, even in an ideal situation, can be a problem with a susceptibility to numerous diseases.

You also need to pay attention to pollination and ensure there are varieties from the same flowering period or adjacent period. Nurseries will advise you on this.

When you plan your orchard of fruit trees you need to factor in ground cover management. Larger trees once established, need the competition from grass, which puts them slightly under pressure and gets them to fruit well. By far the best and most environmentally sound way to manage grass is by grazing sheep. Geese and pigs are also traditional orchard livestock and running chickens under your trees will help clear up pests.

While your orchard is being established you may consider strip planting field crops between the rows or even dwarf trees that will crop for 8-10 years before they need to come out. If you want to have permanent strips for crops between the rows then space accordingly. You will then reap the benefits of a poly-culture with greater productivity wildlife and pest control potential. The Agro Forestry Research Station and Plants For A Future are just 2 organisations researching and promoting this kind of land use.

[www.agroforestry.co.uk](http://www.agroforestry.co.uk)

[www.Pfaf.org.uk](http://www.Pfaf.org.uk)

# Planting and tree care

## Frequently Asked Questions

### What size tree?

Rootstocks affect growth habit, longevity, cropping and disease resistance. Soil conditions as well as considerations of space and access to fruit should be considered. Knowing your soil is a good place to start. In vigour they range from the very vigorous M25 to the versatile MM106 (18 ft) suitable for a single tree in the average garden. However varieties vary as to vigour independent of rootstock, so all factors need to be considered.

If you are really pushed for space a tree on M27 rootstock is an extremely dwarfing tree, never reaching more than 2.5 metres/8 ft high, you can even grow one in pot. Dwarfing trees will crop earlier but are short lived lasting about 20–35 years.

### What variety?

Thornhayes Nursery gives good advice on choosing and planting but it's worth asking neighbours about varieties that do well in your area. Choose a disease resistant cultivar so you can raise it organically and pay attention to things such as cropping season keeping qualities and pollination needs. Try and taste a variety of apples before you choose. Varieties that do well in West Dorset include Crimson King, Tom Putt, Ribston Pippin, Blenheim Orange, Charles Ross, , James Grieve, Crispin, Adam's Pearmain, Melcombe Russet and Bramley, which is wonderfully robust.

See page 3 for a list of Dorset apples .

### Where to plant?

Avoid a place where there was a tree of the same type before, *specific apple replant disease* will stop the new tree thriving. In general fruit trees love sun, hate water logged roots, want space and light around their heads and a good chance of growing straight and strong, so a free-draining, sunny open site sheltered from wind is best. Some cultivars will put up with adverse conditions.

### Should I stake the trees?

This depends on the site conditions and the rootstock. One year old trees bought bare-rooted, from a tree nursery will have the very best chance of making a strong root system. When planting standards M25 or half-standards MM111, a short stake removed after a year or two is recommended. Dwarfing trees like MM106 will need staking for 5 years, M26 for 6-7 years and M27 will need staking permanently.

### **Should I feed them?**

It's best not dig anything into the planting hole, roots need to grow down into the soil in search of nutrients. Keeping the ground weed free for the first 5 years is an essential task, failing to do this will impair the trees growth resulting in weakness and a tendency to attract pests and diseases.

### **Trees in a small garden**

In a small garden where space is limited then a large standard tree will limit your options. Whilst it is possible to graft other varieties into the tree to form a family tree maybe a better option is to plant espaliers or cordons. MM106 are often used for this purpose which are semi-dwarfing.

**Espaliers** are trained to fan out either side of the trunk either against a wall ( ideally a south facing one ) or on wires.

**Cordons** are planted very close together at an angle, again against a wall or on wires. Both are pruned quite tightly to the tree form. Several varieties can then be grown in close proximity and take up minimum space.

If a free standing tree appeals more, then MM106 trees can be planted and will achieve about 3 metres in height and width making them a real option in a larger garden. They will crop within 3-4 years. Very dwarfing M27 rootstock trees will only grow to about 1.5 metres. They will crop within the first year or two, in contrast to a standard tree that can take anywhere between 4-7 years to produce, but they will only live for about 25 years as opposed to the hundred years plus of a well tended standard. They are also much more fussy about soil conditions than the larger rootstocks and will not tolerate any competition from weeds and grass.

### **Timetable your tree checks by writing them on your calendar.**

- **Check: ties and guards.**
- **Clear ground cover and mulch.**
- **Watch out for pests and disease.**

- **Tackle problems immediately.**

## Orchard care: common pests and predators

There are chemicals offered to target pests but they often harm the natural predators as well. Spraying thus leads to the need to spray again and before you know it you will have upset the natural balance of nature. It is therefore much better to exercise good housekeeping. This means keeping the trees pruned, removing dead wood, trimming away diseased wood, removing diseased leaves and fruit, keeping ground cover away from young trees, managing ground cover around mature trees and encouraging natural predators. Mosses and lichens on trees are a sign of good clean air and also provide an ideal habitat for predators.

### **Problem insects**

*Aphids* – Rub off if a low infestation or spray with soapy water

**Apple Sawfly** – They lay their eggs on the fruitlets in April/May and drop to the ground in June to pupate, so clear up fallen fruit, particularly in June.

**Codling Moth** – They lay eggs in June and pupate in the bark and under tree ties, so tie cardboard or sacking around trunk to help catch pupae.

**Winter Moth**– Wingless females emerge from the soil in the winter so grease bands around the trunk in October will reduce their numbers.

**Red Spider Mite**- Hatch on tree in May. So leave lichens and mosses on trees as a predator habitat.

### **What to do about aphids**

**The Rosy Leaf Curling Aphids** ( *Dysaphis devecta* ) are particularly destructive as they inject a toxin into the new leaves causing them to curl very tightly and thus protecting them whilst they get on with their sap sucking inside. They severely stunt growth but don't affect the fruit. They are a pink aphid when young but as they reach maturity they become bluey-grey. The affected leaves will eventually turn red hence the reference to Rosy.

**The Rosy Apple Aphid** ( *Dysaphis plantaginea* ) attacks the blossom as well as the leaves, causing stunted growth and fruit damage. They are quite similar to the Rosy Leaf Curling Aphid being the same colour when young but when adult are more grey than blue. First check your tree for natural predators such as ladybirds, lacewing larvae and anthocorids because

they may well be preparing for a feast and it will surprise you how quickly they can reduce the aphid numbers.

If your tree is very small then simply rubbing them off with your finger may be an option but numbers can be high and they may defeat your best efforts so other methods may be necessary.

Once the leaves are tightly curled it is difficult to spray but if you can get to them spraying with a fresh brew of nettle tea can be effective (the formic acid level is high in a fresh brew).

As a last resort pyrethrum based insecticides are acceptable to organic gardeners as are insecticides based on natural fatty acids but any of these will inevitably kill any natural predators. Encouraging natural control is the only sensible long-term solution.

The Rosy Apple Aphid will move to other host plants in mid summer such as plantain and dock. So if you have any near your trees don't cut them until later in the year, then remove and destroy them hopefully with the aphids on them. The Rosy Leaf Curling Aphid tends to stay on the tree all year round.

## Nettle Brew

- *Gather some nettles (young growth rather than flowering plants)*
- *cover with water and leave for 24-48 hours.*
- *Strain and dilute to one part nettle juice to four parts water.*
- *You can also put a little soap in the water to help it disperse on the leaves.*

*Use it immediately.*

Nettle Tea  
if left for about a fortnight is  
excellent for feeding trees  
either on the soil  
or onto the foliage.

## Helpful insects:

**Ladybirds** – Leave some nettles around to encourage nettle loving aphids which feed the ladybirds and thus boost their numbers.

**Lacewings** – They like the flowers of the daisy family so this boosts their numbers. The larvae are voracious consumers of aphids. Plastic bottles stuffed with screwed up cardboard provide ideal over-wintering places.

**Hoverflies** – They enjoy yellow flowers like Nasturtiums and Tansy.

**Parasitic wasps** – They like flowers of the carrot family such as Fennel.

**Black Kneed Capsid Bug** – They like eating red spider mites.

**Anthocorid Bug** – They are particularly fond of aphids.

## **Animal Pests**

Be aware that your trees can come under attack at any stage of their lives from rabbits, deer, bullfinches ( who eat the fruit buds ) and most livestock including horses. Make sure guards are in place, fences are sound and regular checks are made if grazing sheep. Avoid putting goats, or cattle in an orchard and never make an orchard a home for horses.

## **Under-planting your trees**

**Companion planting** remains a popular way to create a healthy garden. Timing and the planting density will have a bearing on the success of growing mutually beneficial plants together. Apple trees are said to love garlic, chives and tagetes. Trailing varieties of nasturtiums are meant to repel woolly aphids if planted to trail over the tree. Tansy is said to repel ants and it is also an *umbellifere*, which like dill and fennel, will attract beneficial insects.

[www.herbsociety.co.uk/companion](http://www.herbsociety.co.uk/companion)

You can try a **Forest Garden** approach to your fruit trees by creating herbaceous layers beneath the trees made up of edible perennials and self seeding annuals. This will produce a very healthy poly-culture, which mimics a natural woodland edge.

[www.agroforestry.co.uk/forgndg](http://www.agroforestry.co.uk/forgndg).

[www.Pfaf.org.uk](http://www.Pfaf.org.uk)

## **Orchard care: common diseases**

**Mildew** – Shrivelled leaves with a powdery surface. Worse in dry weather. Prune out the affected shoots and burn.

**Canker** – Dieback which encircles the branch if left, sometimes accompanied by red spots. Worse in wet weather. Trim away affected wood or if completely encircling a limb then remove and burn.

**Scab** – Dry corky cracked surface to fruit and black patches on the leaves which then drop off. Worse in wet weather. Remove the blackened leaves or mow them so that worms can take them down into the soil.

**Brown Rot** – Fruit rots on the tree with concentric white rings. Remove affected fruit to prevent it spreading.

**Some problems are neither a pest or a disease but just a consequence of the weather or a nutrient deficiency.**

**Russetting** caused by cold weather is only cosmetic.

**Bitterpit** is depressions on the fruits surface, with soft brown flesh immediately below and is a sign of Calcium deficiency often due to a lack of water.

If a persistent problem it can be remedied using a calcium chloride foliar feed. Otherwise it may just be due to a particularly dry year or bad positioning of a tree.

**Pinkish-red spots**—are evidence of nutrient deficiencies where the lenticels (the apples breathing holes) break down and again can be remedied by feeding the tree. This condition doesn't affect the taste of the apple but shortens the storage time. Golden Delicious is quite prone to this.

## ***Tree Paste***

This preparation can be used to protect and heal pruning wounds or canker areas once diseased wood is removed. Several versions of this recipe exist, it does not need to be exact .

- 2 parts fine sand or sieved home made compost
- 3 parts clay
- 4 parts cow manure

The clay needs to be a slurry as it acts as the 'glue' you can add rainwater or liquid manure to make the right consistency. Cow dung should be at least 2 weeks old. Paint over the wounds, covering well.

Go to :[www.biodynamic.org.uk](http://www.biodynamic.org.uk)  
Read: Bio-dynamic gardening by *John Soper*

# Pruning advice notes

*The Symondsburry Apple Project advocates a hands-on approach to learning the skill of pruning. These notes are designed to be used with practical tuition.*

## ***The aims of pruning***

- To remove dead wood.
- To remove diseased wood.
- To open up the tree to allow light in.
- To open up the tree to allow good air flow through the tree.
- To remove any touching or rubbing branches.
- To remove or reduce the number of branches growing at acute angles from the trunk.
- To reduce the risk of wind damage in exposed locations.
- To make fruit picking easier.

## ***When to prune***

The trees should ideally be dormant which is November to February inclusive, although November has been a little too early in recent years due to unseasonably warm autumns. Be guided by the leaves – they need to be going or gone!

*Dormancy reduces the risk of infection from the wounds produced by the pruning.*

## ***The difference between fruit buds and growing buds.***

**Fruit buds are much fatter than growing buds and tend to protrude.** They will produce more fruit buds off their sides, which over the years become spur systems. Fruit buds also start to form on 2 year old wood and so on spur bearing trees are not found at the ends of the shoots. On tip bearers, as the name suggests, the end bud or terminal bud is the fruit bud. If you cut to a fruiting bud, growth stops at that point.

*Cut to a fruit bud to stop a branch growing and encourage it to expend its energy fruiting*

**Growing buds are slim and pointed and lie closer to the branch.** If you cut to a growing bud you have taken away the controlling terminal bud and so several of the remaining buds will start to grow out as new laterals.

When you cut to a growing bud and induce more laterals this also stimulates the fruiting buds into earlier development and so can be used as a technique to encourage fruit. The following year you cut the branch back to the newly formed fruit buds. Each of these newly encouraged laterals will, of course, in time, be potential fruit bearing shoots, however vertical growth very rarely bears much fruit if at all so is to be discouraged. Sometimes the laterals produced are kept to replenish areas in the tree that may be lacking in wood.

*Cut to a growing bud  
to stimulate lateral growth*

### **Look to the future**

Branches with laterals growing upwards are the ones to favour because as the branch develops and produces fruit it is weighed down, bringing down with it the next upward lateral which will eventually become the new branch.

*You can encourage vertical growth to bear fruit  
by simply tying the branch down  
to a more horizontal position.  
This is a particularly useful device when  
a tree is short of good fruit bearing branches.*

Cuts made to the main structure of the tree often result in water shoots being produced. These shoots can be removed either by rubbing off as they grow or by pruning them off in the winter. However just as vertical growth will not fruit well, water shoots that grow out at an angle *can* be a good source of new fruiting branches.

## **The Checklist**

1. Are there any broken, diseased or rubbing/crossing branches?
2. Is the tree balanced? If it is leaning, does it need counter balancing?
3. Are there any branches too acutely angled from the trunk that could be removed in favour of less acute-angled branches? (Branches with acute angles are weakly attached and tend to split away when heavy with fruit).
4. Is there any congestion in the tree?
5. Remember to favour branches with succession possibilities over 'flat' branches.
6. Remove suckers or water shoots and uprights with vigorous growth and very few, or sometimes, no fruit buds.
7. Assess whether there are too many growing shoots, not enough or just the right amount.
8. Is the tree a tip bearer or a spur bearer?
9. Is the tree too high?

10. Are any of the branches too low?

## Restoring an orchard

The first thing to bear in mind when faced with a neglected tree is that you mustn't do too much all in one year as you will shock the tree and maybe even kill it. You need to look at it as at least a three year project. But if taken on in a careful and considered way is very rewarding as you gradually transform an overgrown mess into a beautiful and productive tree. When you have identified what needs to be removed you then have to assess what most urgently needs attention and then prune out roughly a third of what needs doing.

Dead wood can, of course, all be removed straight away since because it is dead, it is not going to affect the tree adversely. Diseased wood needs to be removed completely. When you have done that then the rest needs to be assessed in order of priority and a third is pruned away.

Neglected trees can sometimes have too much new growth usually in the form of watershoots and so you need to be very careful not to make too many cuts as this will almost certainly provoke it into even more growth. Conversely some trees have stopped producing new growth and have become rather stagnant. New growth in moderation is required to produce new fruit buds and new limbs for the future well-being of the tree. In this case you will need to make some cuts to hopefully stimulate some wood production.

In extreme cases where trees with too many watershoots or suckers are left, whole branches can break away or the tree can even split apart due to the increased weight of wood. This is because the watershoots develop branches of their own and, if left, become little trees in their own right. Dense growth can also present more resistance to the wind with the danger of the tree being blown down. Often diseases associated with overcrowded trees are present such as scab, canker and mildew and by opening up the tree they should diminish.

By thinning out the branches letting in light, air and simply just giving the tree less to do the fruit should improve both in condition and size. Sometimes an old tree may be in the grip of a virus which usually means small fruit and there is not a lot you can do about it. Such a tree can still be worth keeping as it doesn't affect other trees and can still be a thing of beauty and a haven for wildlife.

There are at present very few grants available for restoration or replanting in Dorset .( see page 19)