



## Orchard matters..

A complete guide to looking after your trees  
and making the most of your outdoor space

In partnership with:



## About Fruit-full Communities

The Fruit-full Communities project was funded by the Big Lottery Fund as part of Our Bright Future programme. Young people from your centre worked together to design and create a beautiful outdoor space for you to enjoy. They planted fruit trees, learned new practical skills, explored enterprise opportunities and careers in the Green Economy. They also gained better understanding of the importance of trees in protecting the environment and made connections with other young people working with trees in African countries.

By taking part in this project, they became part of a global movement for change for a more sustainable future. You can join in by looking after your orchard, using it for relaxation, socialising and making the most of the fruit it produces!

Fruit-full Communities was delivered by Learning through Landscapes in partnership with the International Tree Foundation, The Orchard Project and the YMCA.

## About this pack

This resource pack was produced by the Fruit-full Communities team to help young people, staff and volunteers at your centre look after your orchard, in order to make the most of this amazing outdoor space and the fruit grown.

The content and photos for this pack were kindly provided by The Orchard Project, International Tree Foundation and Learning through Landscapes, with the exception of a few that are clearly marked.

## Further information

**Learning through Landscapes (LTL)** [www.ltl.org.uk](http://www.ltl.org.uk) is the UK charity dedicated to enhancing outdoor learning and play for children and young people. It helps children and young people to connect with nature, become more active, learn outdoors, develop social skills and have fun. It encourages young people to have a say in the way their grounds are used and improved.

**International Tree Foundation** [www.internationaltreefoundation.org](http://www.internationaltreefoundation.org) promotes community tree planting projects throughout the UK and provides resources for primary school teachers to help young people appreciate the importance of trees, woods and forests. One of the world's oldest environmental charities, it also works with partners in numerous African countries to enhance the local environment and improve livelihoods through tree-planting and agro-forestry.

**The Orchard Project** [www.theorchardproject.org](http://www.theorchardproject.org) works in partnership with communities to plant, manage, restore and harvest orchards in urban areas to help us all to rediscover the pleasure of eating home-grown fruit and nuts. They have shared their expertise across the UK, Europe and the US and have advised hundreds of activists, community groups and local councils wishing to launch their very own urban community orchards.

**YMCA** [www.ymca.org.uk](http://www.ymca.org.uk) is the largest and the oldest youth charity in the world. It focuses on helping young people and enabling them play a fulfilling role within their communities.

**Our Bright Future** [www.OurBrightFuture.org.uk](http://www.OurBrightFuture.org.uk) is an ambitious and innovative partnership led by The Wildlife Trusts which brings together the youth and environmental sectors. This £33 million programme funded by the National Lottery through the Big Lottery Fund is formed of 31 projects across the UK. Each project is helping young people aged 11-24 gain vital skills and experience and improve their wellbeing. At the same time, they act as catalysts for delivering change for their local environment and community whilst contributing to a greener economy.

**The Wildlife Trusts** incorporates 47 individual Wildlife Trusts covering the whole of the UK. They manage around 2,300 nature reserves and every year we advise thousands of landowners and organisations on how to manage their land for wildlife. Each Wildlife Trust is working within its local communities to inspire people about the future of their area: their own Living Landscapes and Living Seas.



[www.fruitfullcommunities.org](http://www.fruitfullcommunities.org)

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# Things to look out for when planning an orchard

Once your trees are in the ground, they may be there for another century so careful planning now will really pay off! Key things to look out for when planning your orchard are:

## Sun

Fruit trees require sunlight for good growth and fruit ripening so plant your trees in the most sunny spots you have in your garden.

If you are in a town or city vertical but very sunny spots like walls can be great for growing more tender fruits like peaches and apricots. Semi-shaded areas can be used for cooking varieties.

## Soil

Most traditional and local fruit varieties can grow in a fairly wide range of soil types.

Dig a few sample holes to find out what is below the surface and avoid heavy, compacted or poorly drained soils. Most soils can be improved over time. If there is rubble under the surface you can remove some of it during planting. Ideally there should be at least 2ft of soil before you hit any solid like rock, concrete foundations etc.

Trees planted in shallow soils or on a dwarfing rootstock may need staking permanently to stop them falling over in the wind.

## Frost pockets and standing water

Ask people who know the site well if they can recall any areas that become flooded during the winter. Most fruit trees do not like to be in



standing water for too long so avoiding these areas is very important.

If possible, avoid planting your trees at the bottom of a slope where there is a wall or hedge. These areas often remain frozen for longer periods of time in cold winters. This can damage fruit buds.

## Water source and collection

Newly planted trees need to be watered regularly for the first few years to help them grow and establish a healthy root system. Having an easy access to water will help looking after the trees.

The local council or housing authority may be able to fit a new stand pipe and tap. Hoses attached to outdoor and kitchen taps may also be an option.

You may consider installing a water butt near your orchard to collect rain water. The bigger water butt you can afford the better as they soon run dry during warm periods.

## Orchard spacing and layout

The most important thing is that each tree is positioned in a place that receives sufficient sun and soil depth, is well drained and not too close to other trees or large shrubs.

Where possible spacing between fruit trees should be generous to allow for competition-free root and canopy growth. When choosing your trees find out how wide the canopy will grow and then allow that much space when planting your trees. If your orchard space is very limited choose trees that will not grow very big and adjust the spacing accordingly.



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# How to choose your trees



We tend to think ‘apple’ when we think ‘orchard’. But why not think about including some other fruit trees? Plums can be grown successfully in most parts of the UK, while pears do well in more southern locations. Why not also consider less common traditional fruit like gages, damsons, quinces, mulberries or medlars?

Choose varieties that have a long tradition of being grown in your local area as these will be generally well suited to your local climate. It’s also a good idea to include a few varieties that you will not easily find on the supermarket shelf.

## What fruit do you like?

- » We suggest that you only plant varieties that you like to eat! Why not organise a fruit tasting session with the rest of your group and try different varieties, their juices and products?
- » Apple days, farmers markets 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 is also worth finding out if there are any local harvesting groups through the Abundance Network as they may have products like these that you can try.

## Don't forget nuts!

Hazels, sweet chestnuts and almonds can all be grown in the UK.

- » Hazels are the most hardy. They can be grown in most places in the UK, also in partial shade and can be planted in windy spots.

- » 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.

## How to extend the fruiting season?

By selecting species and varieties with a range of harvest times you can enjoy your fruit supply for longer.

- » With cherries and plums available to pick from July, and 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, you can continue to enjoy the fruit of your orchard long into the New Year.



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# Choosing what to grow - shape and size



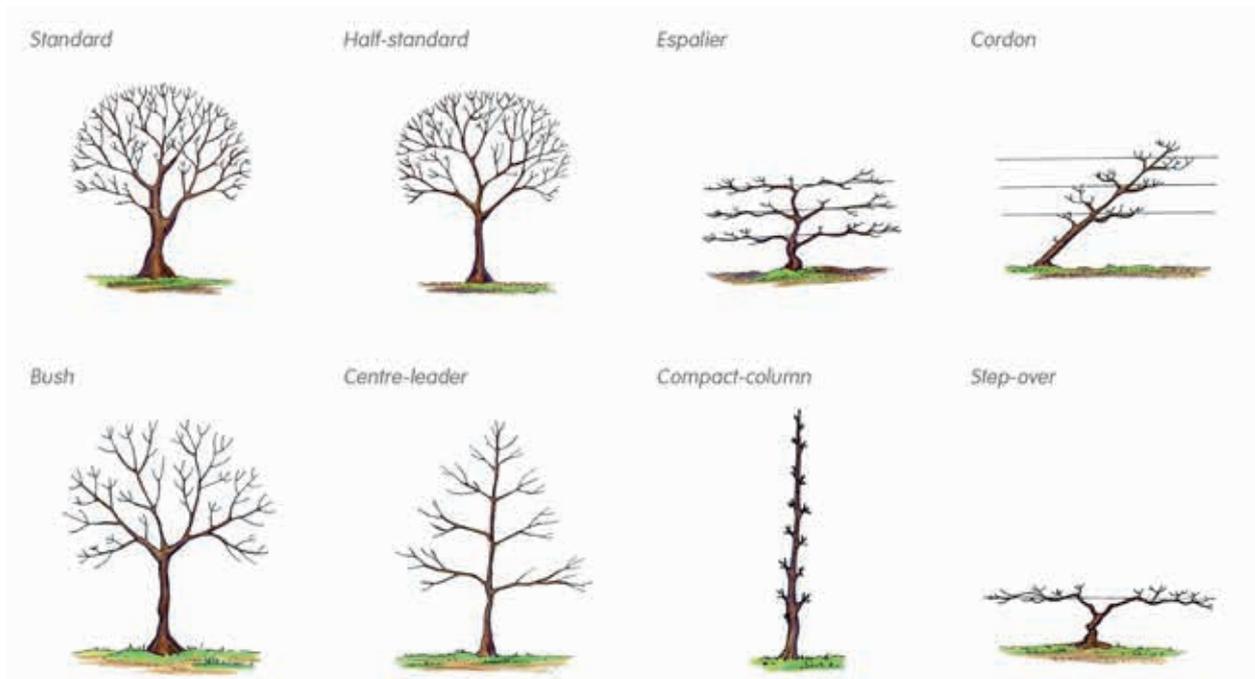
You can prune your trees this way yourself over several years or buy trees that have already been trained by the nursery. They will still need to be pruned each year but this is quite easy to do.

If you have space, simple 'bush' forms planted into a grassy area will work well for most varieties and will be suitable if you want a small grove of medium-sized trees. Again, it is possible to buy trees that have already been trained and pruned into this shape by the nursery.

Fruit trees are usually grafted on to a rootstock (the lower portion of stem which has the roots attached). To stop trees becoming too big, most varieties are grafted onto a 'dwarfing' or 'semi-dwarfing' rootstock - this helps to keep the trees at a suitable size so they can be picked and pruned easily.

You can prune your trees to grow in a range of shapes and sizes. If you want to grow them flat up against a wall, fence or create a hedge-type effect, then opt for 'espalier', 'fan' or 'cordon' forms.

'Stepover' forms are pruned very low and are ideal for growing along a path or around a planting bed.



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# Planting your orchard

Bare root trees need to be planted in winter (November to January) while container grown trees can be planted at any time. Having selected the right site and designed the layout of your orchard, carefully mark out the location of your trees.

## To help you plant your trees you will need:

- » Spades
- » Forks (for breaking up hard pans and making drainage holes)
- » Buckets/bins (to soak bare roots)
- » Pinch bars/ground breaking tools
- » Mattocks
- » Tree ties/old inner tubes
- » Large cable ties
- » Biodegradable mulch mats
- » Tree stakes
- » Tree guards, hammers and fencing staples (if using wire mesh guards)
- » Secateurs
- » Mycorrhizal root dip
- » Organic chicken manure or compost
- » Mulch (for example woodchip, one barrow per tree)
- » Wheelbarrows
- » Shovels
- » Gloves
- » Mallet/lump hammer for stakes
- » Safety goggles and hard hats (only if using above head height stakes for guarding)
- » Stake driver (only needed if using big stakes)
- » First Aid Kit

## The 'pit'

Dig a square shaped pit. This is particularly important with compacted and heavy clay soils. Each side of the square should be at least three spade widths wide. The pit should be dug to at least one spade's depth. Break up the subsoil at the bottom of the pit, remove all weeds and large stones and mix in a layer of compost.



## Planting

- » The pit should accommodate the root ball without the roots having to be squeezed in or bent up the sides.
- » Any long roots can be accommodated by using the spade to make a slit from one of the corners. Ease the spade forward so that the slit can be opened and the root tucked in, before removing the spade and tamping the ground down.
- » It is important that the graft union (the bulge where the rootstock has been grafted onto the scion) remains 8-10cm above the ground level and that no roots are poking out of the surface.
- » Backfill the pit with the remaining soil, firming the soil gently with your foot.

## Mulching

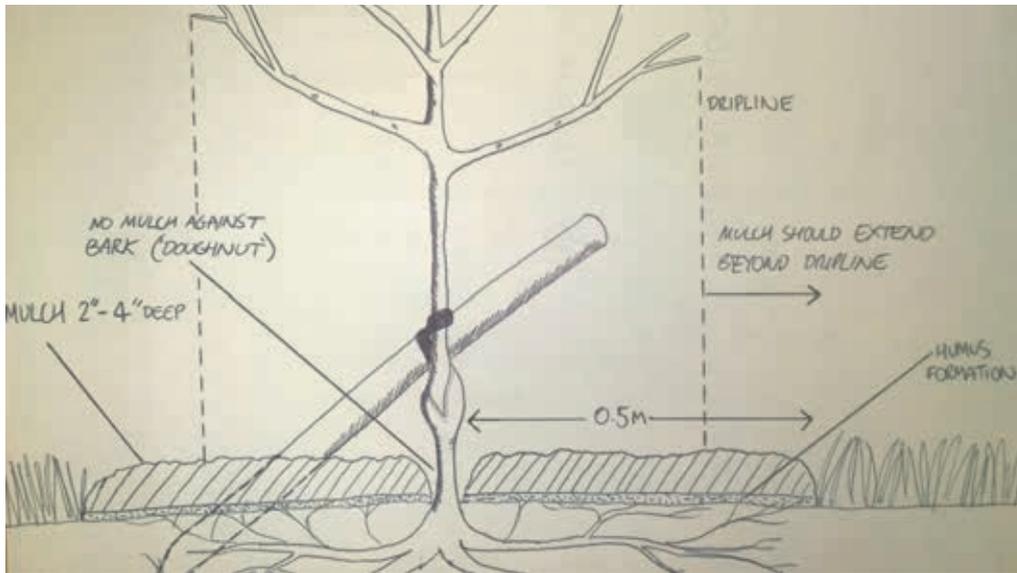
Mulch is a layer of organic matter (e.g. manure) added on top of the ground to suppress weed growth and retain moisture. It is vital for the establishment of young trees, particularly when planted into grass.

Woodchip from hard wood trees makes good, long-lasting mulch and is readily available from tree surgeons.

A mulch mat can be placed on the ground around the base of the tree to block light to any plants below and to prevent more vigorous weeds from growing. This should be at least 1m in diameter and be made from a biodegradable material. A couple of layers of cardboard will suffice.



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A generous layer of mulch can then be added. This should form a circle around the tree, around 1m diameter and 8-10cm thick.

A hollow should be made immediately around the base of the tree's stem so that the mulch is not touching the bark, which can lead to rotting.

### Guarding

In most places the main source of damage to young trees are strimmers, grass cutters and vandalism.

You can protect your trees with guards which you can purchase from your local garden centre or make yourself using wire netting.

Where possible, mark the boundary of your orchard with a physical feature making it

difficult for grass cutters to accidentally damage your trees.

In order to allow the tree sufficient space to grow, it is vital to check the guard regularly and adjust it when needed so that the wire does not cut into the growing branches.



### Fruit-full tip: Planting bare root trees

#### Delivery

»When your trees get delivered, remove them from the packaging but do not unwrap the roots. Place the trees in a cool but frost-proof shed. They can remain that way for one week.

»If the trees are not going to be planted within one week, dig a small trench, unwrap the roots, cut the strings and water them well. Place the tree in the trench and cover all the roots with the backfill soil. Firm the soil around the roots with your feet.

»Check the trees daily especially for damage from mice and rabbits.

#### Planting

»If the roots appear dry, immerse the roots in a bucket of water for at least 15 minutes before planting.



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# Looking after newly planted trees

## Weeding and watering

For the first few years after planting, water your trees well during dry weather (a large watering can of water applied every few days).

Weed control is key to successful establishment. Your aim should be to keep a weed-free area of about 1m in diameter around each tree for the first 3-5 years.

Woodchip from your local tree surgeon makes an excellent mulch which will inhibit weeds and break down to create a rich soil.

## Pruning and training fruit trees

Pruning and training your trees will keep them healthy, productive and allow you to control their shape and size.

Here are a few basic tips for pruning and training trees:

- » Use sharp secateurs and try to make a clean cut with no rough edges.
- » Remove any damaged, dying or deceased branches. Have a look online for tips on how to recognise dead branches.
- » Remove branches that cross to avoid mutual damage.

Don't worry if you prune the wrong bit – it is all part of the learning process! Many trees are quite resilient and will recover from harsh cuts.

For more advice on pruning and training different tree forms visit:

[www.fruitfullcommunities.org](http://www.fruitfullcommunities.org)

## Ongoing care

- » Remove fruitlets (immature/tiny fruit) as soon as they become visible in the first year or two to support stronger growth.
- » Thin overcrowded clusters of fruit by hand in late June to leave one to two fruits per cluster.
- » Check that your tree ties don't become too tight or loose.
- » Most importantly, agree clear responsibilities for your orchard care and maintenance tasks and plan them into your centre's regular activities calendar so they don't get forgotten or overlooked.

### WINTER:

Prune trees that produce fruits containing pips - apples, pears, etc.

### SUMMER:

Prune trees that produce stone fruits - cherries, plums, gages, etc.



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# Harvesting and storing fruit

Apples are ready for picking when the stalks detach from the tree easily without pulling and tugging. Cup the apple in your hand and lift and twist – if it is ready it should come away easily. Try not to press or handle the fruit too much or it will bruise. Pears need to be treated very gently.

Apples and pears can be stored for several weeks or months (depending on variety). Choose clean, unblemished fruits for storing as they will quickly rot if bruised or damaged. Inspect and handle the fruits carefully. Wrap each fruit individually in a sheet of newspaper before placing them in a tray, shallow box or basket and leave in a cool, frost-free place (a garden shed or garage is ideal).

Alternatively, place about six fruits in a clear polythene bag, perforating the bag with a few holes for ventilation.

Check the stored fruits regularly and remove any which show signs of rotting. Cooking

apples may be peeled, cored, chopped and frozen in bags for later use.

If you have more fruit than you can store, try juicing the fruit using an apple press (it is often possible to borrow one from your local apple group). The juice can be drunk fresh (within three days of pressing – keep it in the fridge to keep it fresh), or pour into old, clean plastic drinks bottles and freeze - remember to leave enough space at the top of the bottle for the juice to expand during freezing.

A small amount of vitamin C (ascorbic acid) added to the juice after pressing will help prevent it discolouring.

ENJOY!

Content for the 'Harvesting and storing fruit' guide was provided by Garden Organic.

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## Common orchard pests and diseases

### Focus on tree health

The key defence to all pest and diseases is a healthy plant.

Watering, weeding and maintaining a well-mulched zone around the base of the tree are the key tasks for the first few years after planting and all three will speed up the establishment of the tree.

A tree is 'established' once it has grown enough roots to keep it alive without the need for additional watering and growth rates become more or less consistent from year to year.

Feeding the tree once it begins to fruit properly after a few years will ensure that the nutrients used to create each years' harvest will be replenished.

### A preventative approach - know your trees

The more you can get to know your trees and look at the leaves and shoots throughout the year, the more likely you'll spot any issues before they get out of control.

Many pests and diseases are seasonal, so you'll learn to anticipate their arrival and build this into your annual orchard care calendar.

Encouraging 'beneficial' predators to visit your orchard may help you deal with a number of pests, for example:

- » Blue tits or great tits will skilfully pluck thousands of caterpillars from an orchard in a single spring.
- » Ladybird, hoverfly larvae, ground beetles, lacewings, plant bugs, wasps and earwigs consume thousands of aphids.



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## DISEASES

### Scab (black spot) – apples and pears

#### Cause

Scab is a fungal disease of apples, pears and peach trees. It is often found in trees where pruning has stopped and the canopy has become overgrown. Outbreaks are worst in cool, wet periods in spring and early summer.

#### Symptoms

The leaves develop dark, rounded, dusty blotches and fall prematurely. Young shoots can develop pimples like blisters which turn to cracks and scabs. The fruits develop brown or blackish corky scabs, cracks and blisters on the skin. These are usually only skin deep and do not affect the flavour. However, affected fruit may split, making it vulnerable to other infections.

#### Control

Remove leaves and fallen fruit in the autumn to destroy the over-wintering stages of the fungus. You could remove them from your site or burn them.

Good pruning practice will allow airflow in the canopy and prevent prolonged humidity after rainfall. This will help prevent scab. Good tree spacing at planting is also important, so that there is not too much overlapping canopy between trees.

### Silver leaf – plums, damsons, cherries, apricots

#### Cause

This is a fungus that can affect a wide range of fruit tree species, particularly stone fruits.

#### Symptoms

The leaves develop a silvery sheen, then discolour and wither, dying off progressively as the disease works back along the branch.

As infected branches thicken they develop a purplish stain in the centre which can be seen when cut across. Other symptoms can include reduced leaf area, reduced root growth and smaller and fewer fruit.

#### Control

Silver leaf is incurable, but trees with only mild infections may recover from it.

Diseased wood should be pruned out, cutting back to a point 10-15 cm after an unstained cross-section is reached. If it has reached the main trunk, it may be necessary to remove the tree completely.

Regular pruning (between May and August), maintaining an open structure and removing damaged wood, will minimise the chances of infection occurring.



Apple scab, by Margalob, via Wikimedia Commons



Scab on pear, by Russell Miller



Silverleaf and weevil damage on plum, by Russell Miller



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## Bacterial Canker

### Cause

A bacterial canker is a disease that affect stone fruits and is most common on cherries and plums, but also affecting apricots and peaches. The disease weakens the plant and can cause extensive die back if not treated.

### Symptoms

- » Brown spots ringed with a yellow halo on the leaves in summer, which dry and turn into holes, causing premature leaf fall.
- » Shallow hollows that discharge gum may appear on the branches.
- » Cankers, appearing on twigs, branches and the trunk. Inside the cankered areas, bark becomes darker, looks wet and shrivelled. These can kill the branch completely, causing the tree to die back. Cankers can kill the tree if they completely girdle the stem.

### Control

There is no remedy, apart from pruning off affected growth during July and August. Trees often recover and become immune.

Pruning should be avoided during winter dormancy, and tools should be wiped with disinfectant between each cut.

## Fireblight – mainly pears

### Cause

This bacterial disease affects apples, quinces and related trees, particularly pears.

### Symptoms

- » Burnt appearance of affected blossoms, leaves and twigs, but it can affect all aerial parts of the tree.
- » Flower clusters wilt and turn brown following blossom infection. Fruits turn brown or black and become shrivelled, but remain attached to the tree.
- » Cankers form on branches. These look like sunken, discoloured oozing patches surrounded by irregular cracks in the bark. The translucent amber or reddish ooze can infect other trees.

### Control

Fireblight rarely kills a tree completely and with correct pruning the tree is likely to recover and not be reinfected for many years.

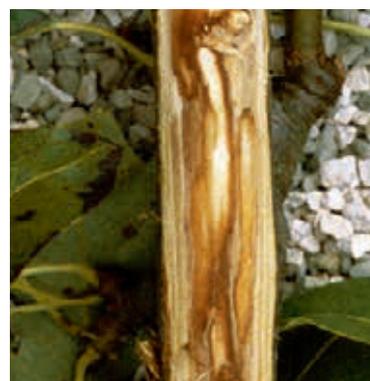
The only solution is to remove the wood back 60cm below the affected area. Young trees and shrubs are best removed entirely. Pruning should be carried out in dry weather, tools should be sterilised between cuts and the diseased material should be removed from the orchard and burnt. The whole orchard and surroundings should be carefully inspected for further signs of infection.



Bacterial canker on 'Morello' cherry by Russell Miller



Bacterial canker, by Rosser1954 Roger Griffith, via Wikimedia Commons



Fireblight in cut stem with foxy red staining, RHS.org.uk



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## Apple powdery mildew – all fruit trees

Apple mildew is very common and affects shoots, leaves and sometimes flowers and fruits.

### Cause

Usually caused by drought.

### Symptoms

- » A white powdery coating and spores appear on new shoots, leaves, particularly on the leaf underside and less commonly on flowers and fruits too.
- » The disease causes stunting of shoots on young trees, potentially causing poorly formed and misshapen trees and the reduction of flowers and fruiting spurs on older trees.

### Control

Mildewed shoots can be spotted during winter and should be pruned out during winter pruning. Prune tree buds beneath the visible infection. Look out for new infection on new shoots during the spring and cut out the infected tips (take care not to spread the spores to uninfected shoots by putting the prunings into a plastic bag).

All infected leaves and shoots should be disposed of offsite. Thinning the tree to create a more open structure will help reduce any occurrence. An organic mulch applied around the base of young fruit trees will help maintain moisture, as will regular watering during the growing season.



Apple mildew by Jonathan Billinger, via Wikimedia Commons

## Canker – apples and pears

### Cause

Canker (not bacterial canker) affects the majority of fruit trees, but mostly apples and pears.



Canker on apple, by Russell Miller

### Symptoms

- » Sunken lesions and fissures of dead bark appear on branches or main stems showing as dark water-soaked patches surrounded by cracked or corky, brown, flaky bark.
- » Branches may swell up around the infected area.
- » Canker can also be identified as tiny white dots in summer and red dots in autumn. If left unchecked it will cause misshapen growth, eventually girdling branches and causing die-back. If it surrounds the stem the branch will die.

### Control

The only effective way of removing canker is by cutting out affected material to clean wood and burning all infected branches. Affected larger branches can have affected wood scraped away with a sharp knife, removing all parings. If canker has reached the main trunk it may be necessary to remove the whole tree.

## Fruit brown rot – apples, pears and plums

### Cause

Caused by a fungus and affects mostly apples, pears and plums.

### Symptoms

The fruit first develops brown areas of soft decaying flesh which quickly covers the whole fruit, followed by concentric rings of yellowish white mould. Fruit that remains on the tree shrivels up and persists through winter.

### Control

All rotting fruits should be removed from the tree and destroyed, including mummified fruits left hanging during the winter.



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## PESTS - Nature knows best

It usually takes two to five years for predator and parasite numbers to build up and become balanced. The first few years are often the worst for insect pests like aphids and codling moth. Be patient. The need for manual intervention in the first year or two will ease as nature catches up with your new habitats. All species have cycles so one year may be worse for a particular pest but it will be better the next year.

### Aphids

Aphids cause leaf curling and tip distortion. They multiply very quickly and can stunt growth but are rarely a major problem in the long term. The first few years are key since this is when young trees are at their most vulnerable.

Even severe infestations have little long term impact on larger trees.

### Control

Control aphids by removing or rubbing them off by hand, blasting the tree with a jet wash or introduce ladybird larvae directly onto the affected tree. You can also use garlic spray.

### Top Tip

If possible, allow a few small nettle patches in your orchard. These will attract a species of aphid that only feed on nettles.

### Apple sawfly

Sawfly larvae live inside apples. Trees tend to drop infected fruits and sawfly can actually assist with fruit thinning. Larvae that fail to penetrate the apple's outer skin cause the familiar ribbon shaped scars or blemishes on ripened apples. These apples remain both good to eat and have fertile seeds.

You can break the apple sawfly lifecycle by removing infected fruit during thinning along with promptly fallen fruit.

### Codling moth

Codling moth larvae live inside apples and often ruin the fruit.

Many infested fruit will fall prematurely as the tree rejects them. Larvae can move between fruits causing significant damage.



Apple sawfly maggot and damage, by Russell Miller

Pheromone traps can be used from late May to control codling moths. They can also be controlled by tying cardboard or sacking around the trunk in the summer. These can be removed in winter and destroyed. However, codling moths will always be present.

Bats may also provide effective control if present. If you have bats in the area, why not provide bat boxes?

### Pear sawfly

Sawfly larvae eat the leaves of cherry, pear and plum trees.

You can deal with them by blasting the tree with a jet wash or by spraying on diatomaceous earth.



Pear sawfly (*Caliroa cerasi*) by Russell Miller



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## Pear midge

The fruitlets turn black before dropping off in June.

### Control

It's worth removing infested fruitlets to break the insect's lifecycle.

If infestation is bad, you may gently disturb the soil underneath the tree during late winter to expose them to birds but be careful not to damage the tree's roots.

One option is to pick up and remove all the infested fruits in the summer (destroy these – don't add them to the compost!) and then peg down some plastic sheeting around the base of the tree to aid collection of further infested fruits and prevent the larvae from reaching the soil. Repeating this over a few years will reduce the population size significantly.

## Winter moth

Winter moth caterpillars feed on young leaves, flowers and fruit in the spring, including apple, cherries, plum and pear.

The best time to stop these is between October and April. Attach grease bands (can be bought from most garden centres) around the trunk to prevent the caterpillar from climbing up the tree. Be sure to put bands on tree stakes as well.

Attracting birds like blue tits and great tits helps to keep their numbers down. Providing well positioned nesting boxes and a water source will encourage tits to take up residence in your orchard.



Leaf miner moth  
(*Callisto denticulella*)  
by Russell Miller

Leaf miner evidence  
by James Lindsey at  
Ecology of  
Commanster, via  
Wikimedia Commons



Pear midge damage by APictche, via Wikimedia Commons.

## Leaf miners

Several insects have larva that feed on leaf tissue, including some moths, sawflies, flies and beetles. The problem is usually just cosmetic and not significant enough to affect the tree.

## Birds

Some bird species can become a problem if they attack buds, blossom and fruit too much. Species like bullfinches may eat the buds, so find out if they are common in your area.

Generally they are not likely to be an issue for most sites and birds in your orchard are a good sign.

If they are a problem, netting is often the only option to prevent birds eating fruit but is only practical on small trees and can be harmful to the birds if they become tangled. Scarecrows may be useful, if moved frequently, as might large imitation owls or birds of prey mimicking kites that can be attached to the ground.

## Squirrels

Grey squirrels can be a severe pest especially with nut crops, particularly in urban areas. Where trees have a clear stem, e.g. walnut, baffles may prevent squirrels from accessing the tree, but only if the tree stands far enough away from other trees and buildings so that they can't jump onto it.



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# Nutrient deficiencies in trees

All plants require a range of different nutrients to live a healthy life. A lack of one or more of these available in the soil can cause problems for the plant. The below is a basic guide to some of the common deficiencies that you may see in your fruit trees and includes some of the possible, easily accessible and organic soil additions available to remedy them.

## Primary nutrients - those that are required in larger quantities

### Nitrogen (N)

Can be increased in the soil by adding manure, compost, non-human urine, comfrey leaves or coffee grounds, etc.

#### Nitrogen deficiency symptoms:

**Shoots** – shorter. Should be 20-30cm in apple tree in peak part of its lifecycle. Twigs are skinny.

**Fruit** – fewer, smaller fruit with more being lost during the 'June drop'. Earlier to mature.

**Leaves** – pale green to yellow. Smaller in size. Appears on older leaves (further down the shoot) first because nitrogen is mobile and moves to new growth. Leaves drop earlier.

#### Excess nitrogen symptoms:

**Shoots** – very long and 'whippy'

**Fruit** – apples have poor colour and go softer more quickly in storage.

**Leaves** – large and very dark that stay on tree for longer.



Nitrogen deficiency and excess nitrogen, by Internet Archive Book Images, via Wikimedia Commons.



Potassium deficiency on an apple leaf, by Internet Archive Book Images, via Wikimedia Commons

### Phosphorus (P)

#### What does it do?

Phosphorus is a mineral that helps with growth and can be increased in the soil by adding non-human urine, wood ash and seaweed.

#### Phosphorus deficiency symptoms:

**Shoots** – stunted

**Leaves** – fewer and smaller. Leaves end up very dark and sometimes slightly purple.



Phosphorus deficiency on French marigold, by Julie Day

### Potassium (K)

You can increase it in the soil by adding non-human urine, mulching with leaves from mineral accumulators (e.g. comfrey), seaweed and wood ash.

#### Potassium deficiency symptoms:

**Leaves** – margins turn yellow, then dark brown then look scorched. It appears on old leaves first and symptoms in leaves become worse as fruit ripens.



[www.fruitfullcommunities.org](http://www.fruitfullcommunities.org)

## Secondary nutrients – needed in moderate amounts and less likely to hinder plant growth

### Calcium (Ca)

#### Deficiency symptoms

Fruit - will have bitter pit; brown spots on skin and fruit will taste bitter.

Sprinkle some ground eggshells around the tree trunk regularly to increase calcium in the soil.



Calcium deficiency, by Internet Archive Book Images, via Wikimedia Commons.

LTL advocates an organic approach that relies on creating ecological balance in the orchard so that pest and disease threat is minimised.

### Magnesium (Mg)

#### Deficiency symptoms

Leaf – yellowing of tissue along margin and between veins resulting in Christmas tree shape. Happens first on older leaves.

Fruit – Early fruit drop

To resolve apply 2-3 applications of Epsom Salts at 14 day intervals. This should be diluted in water and sprayed on the leaves in the evening.



Magnesium deficiency, by Internet Archive Book Images, via Wikimedia Commons

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## Suggested reading and resources

We hope this short orchard care pack has provided you with enough information to get started on your orchard adventure.

If you would like to find out more please visit [www.fruitfullcommunities.org](http://www.fruitfullcommunities.org)

for more detailed guides, including *Planning and planting your orchard*, *Growing trees in containers* and *Pruning and training fruit trees*.

#### Online resources available:

- » [www.theorchardproject.org.uk](http://www.theorchardproject.org.uk)
- » [www.gov.uk/government/publications/community-orchards-a-how-to-guide](http://www.gov.uk/government/publications/community-orchards-a-how-to-guide)
- » [www.commonground.org.uk](http://www.commonground.org.uk)

#### You may also find these books helpful:

- » *How to Prune an Apple Tree: A guide for real people with imperfect trees* by Chloe Ward
- » *Community Orchards Through The Year: A Practical Guide*. Pauline Markovits. [www.ecologic-logic.com](http://www.ecologic-logic.com)
- » Frank P Matthews – *Fruit and Ornamental Tree Guide*
- » *The Orchard Project Orchard Handbook*
- » *The Royal Horticultural Society Pruning and Training guide*
- » *The New Fruit Expert* by Dr D G Hessayon. The essential guide to growing all types of fruit
- » *Garden Organic – Fruit Growing Manual* - free download from [www.gardenorganic.org.uk](http://www.gardenorganic.org.uk)
- » *Natural England Orchard technical notes*



[www.fruitfullcommunities.org](http://www.fruitfullcommunities.org)