

Guidance Notes for

PLANNING AND PLANTING A NEW TRADITIONAL ORCHARD

TRADITIONAL ORCHARDS

Traditional or old orchards are a distinctive feature in the local landscape. They can be recognised by the wide planting distance of large majestic trees of old and often scarce varieties on a standard rootstock. These orchards consist of apple, pear, cherry, plum and damson which are at least fifty years old. This also includes cob nuts (Hazel), which are grown in orchards known as platts. These traditional orchards contain a large number of varieties and provide a valuable habitat for flora and fauna.



Commercial production of fruit has changed dramatically over the last fifty years with the mass removal of less viable traditional orchards leaving just a few scattered throughout the countryside. Now the true value of these neglected traditional orchards as a landscape feature is being realised, instigating the restoration of those surviving orchards. This will help to conserve our local heritage and increase the biodiversity of wildlife. Traditionally the orchard was grazed by sheep developing the pasture and creating a more extensive wild flower population.

A SUITABLE SITE FOR A TRADITIONAL ORCHARD

There are various aspects which should be considered before embarking on planting a new traditional orchard. The site should not impact on the landscape but reinforce the local landscape character and help to link with existing habitats. In general, planting of new traditional orchards should be focused where traditional orchards are a typical landscape feature

It is important to initially discover as much historical information about the site on which you propose to plant an orchard before committing to your chosen species. Past planting will determine the management required for the new orchard. Planting of new

traditional orchards should be avoided where there is evidence of archaeological and historical features unless the site was previously an orchard.

Avoid a planting where a tree of the same type stood previously due to *specific replant*

SPECIFIC REPLANT DISEASE

Specific replant disease is found in the soil where fruit trees were previously grown. The disease is caused by the build up of nematodes and pathogenic fungi in the soil; mature trees are large enough to withstand any adverse effects. However, when the original trees are removed at the end of their life a high proportion of these harmful organisms will remain in the soil. New young trees planted into this soil will struggle to establish. Overcome the effects of replant disease by either planting 1m to one side of the original planting keeping to the same side in each row or incorporating compost into the planting hole, providing nutrients and conserving moisture by mulching. Alternatively, planting apple or pear trees where cherry, plum and damson were or vice versa can reduce the risk of this disease.

disease which will inhibit good establishment. In general fruit trees love sun but hate waterlogged roots and need space. Some cultivars will put up with adverse conditions.

Once the species have been decided, the varieties should reflect those that have been grown traditionally in that area, as well as consideration for the future use of the fruit.

SITE SELECTION

Landscape and elevation is important but fruit is grown in a wide variety of locations, typically between sea level and about 400 feet (122 metres) above sea level, although in favourable situations, orchards can be grown satisfactorily at higher altitudes. Fruit can be grown on low lying levels, such as the Isle of Ely or undulating countryside like that found in the Mid Kent Downs.

Sheltered sites with protection from prevailing winds generally facing south or south-westerly are preferable. Natural windbreaks which filter and slow the wind can be planted where they do not exist. Too much shade from nearby vegetation can cause drawing growth on the trees and a lack of light will result in the fruit not developing or ripening. **Avoid** really steep slopes and sites prone to spring frosts and strong winds.

GRASSLAND



If the grassland is rich in species it may be that the site has greater conservation value as it stands rather than planting fruit trees, seek advice from an ecologist.

RAINFALL

An average annual rainfall of 50 – 75 cm is adequate; too much rain during the summer may cause fungus problems reducing the quality of the crop, particularly in cherries which will split therefore resulting in the loss of crop. With low rainfall, fruit quality may suffer and irrigation may be needed to establish young trees.

WIND

If the site is windy consider planting a windbreak, this could be a fruit hedge or a range of other species e.g. Alder. Ideally windbreak species should be fast growing and respond well to trimming since they can provide excellent protection yet not drain the soil of essential nutrients. Leave enough space between the fruit trees and the windbreak to avoid competition and allow movement around the orchard. Exposure to wind will make it difficult to establish and train new trees, wind rocking will damage roots leading to disease. The planting of a wind break will also reduce



the possibility of wind frost and provide better conditions for bees, essential for pollination. The fruit will also have better protection from the wind during ripening.



If a windbreak is needed preferably plant it before the fruit trees are planted. Make sure you plant species that are indigenous to the area such as *Rosa canina* (Dog Rose) *Sambucus* (Elder), *Crateagus* (Hawthorn), *Corylus* (Hazel), *Prunus* (Wild Cherry), and *Malus* (Crab Apple) these will provide both fruit for wildlife as well as additional fruit from the orchard. Once a windbreak is established vegetation can be allowed to develop at the base which will provide a valuable habitat for beneficial insects and other wildlife.



FROST

A late frost can decimate blossom resulting in the potential crop being lost.

Avoid planting in **Frost Pockets** which are created when cold air becomes trapped in low lying land such as valleys. Trees planted on these sites could suffer damage if frost builds up at critical growing periods, causing damage to developing shoots and killing flowers. Where frost is a problem it is better to plant later flowering species or varieties which are less susceptible to frost damage. When planting on a slope, do not plant a hedge on the down slope side. This will trap the frost and prevent it from rolling down hill away from the trees.

WILDLIFE

The planting of a new traditional orchard can bring huge ecological benefits to the area particularly if it joins and forms a network of orchards so that there is a large enough area for wildlife to travel between varying orchard habitats. These habitats are an important feature for a wide range of species such as bats, birds, wildflowers, lichens, fungi, small mammals and insects including the Noble Chafer beetle, now an endangered species. Combined with hedgerows and the orchard floor, orchards provide a haven for a wide range of wildlife if managed sensitively.



SOIL

Orchards can be found on a wide range of soil types however, fruit trees prefer a good depth of fertile, well drained, loamy soil which will have the capacity to hold water yet with good drainage. Dig a hole to have a look at the soil type.

- Sandy soils could result in leaning trees, which may eventually fall down. They could also be susceptible to drought.
- Clay ground which is often waterlogged, especially over winter, is unsuitable
- A loam soil which has nearly equal quantities of clay to silt to sand with plenty of humus is ideal. This soil will maintain good moisture levels.

Test your soil to check the ph (acidity or alkalinity); a reading of between 6.3 and 6.8 is ideal. Also test for other nutrient status of the soil which can be corrected before planting.

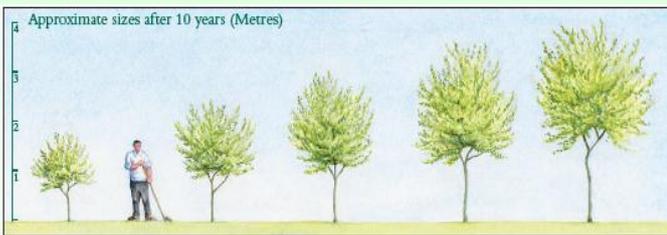
TREE SELECTION

Fruit trees are sold in a number of forms, potted or bare rooted with varying rootstocks depending on what is required. If you are planting a traditional orchard, purchasing of trees as bare-rooted one year (feathered maidens) or two year (straight lead) are generally the most accepted forms.



TREE SIZE

Rootstocks determine the tree's growth habit and growth rate, hardiness, cropping, disease resistance and eventual size.



Very Dwarf Dwarf Semi Dwarf Semi Vigorous Vigorous

Dwarfing rootstocks which are used to grow bush trees are not suitable for the full-size (standard) trees planted in traditional orchards. These trees require a vigorous rootstock to develop a good root system to with-stand the risks of grazing animals and support the large tree canopy that will develop. A standard tree which is very vigorous will take between 4-7 years to produce fruit. They will live for about one hundred years plus. Larger rootstocks are less fussy about soil conditions. However varieties vary as to vigour independent of rootstock, so all these factors need to be considered.

ROOTSTOCKS

Apples – *Malus M25* produce large vigorous standard trees that need to be planted at least 8 - 10 metres between rows and 7 - 9 metres in the row at planting density of 100 - 150 trees/ha.

Cherries - *Prunus avium* F.12.1 is very vigorous and ideal for planting standard cherry trees at 10 - 12 metre spacing and planting density of 100 - 150 trees/ha. A rootstock of similar vigour, but less easy to find is Charger.

Pears - *Pyrus communis* is very vigorous and again very suitable for standard trees. Pears are often planted on their own roots but can make a very large tree. Most modern trees are grown on quince rootstocks. These will produce a large tree in time but will not be as long lived as those grown on the more vigorous rootstocks. Pears should be planted between 10 - 20 metres apart and planting density of 100 - 50 trees/ha.

Plums – The Brompton rootstock is very vigorous and suitable for standards. Some varieties, like Pershore, produce fine trees on their own roots. Many damsons will come almost true to type from seed. Plums should be planted at a spacing of 6 - 8 metres approximately 185 - 260 trees/ha.

VARIETIES

Varieties indigenous or historically grown in the local area should be chosen initially to preserve historical continuity and cultural heritage and reinforce local distinctiveness. Local fruit groups will be able to give advice. To obtain the varieties on the traditional rootstocks will mean ordering from a specialist nursery at least one year ahead of when you plan to plant. Choose a disease resistant variety so you can raise it organically.

A mix of varieties is needed to ensure cross pollination and fruit-set. Take careful note in your planning of varieties to pollination period, cropping season, keeping qualities and distinctiveness of the local area. Location is also important since some varieties are more suited to different areas. Specialist tree nurseries are happy to advise you on suitable varieties.

POLLINATION

You need to pay attention to pollination and ensure there are varieties from the same flowering period or adjacent period close to each other in the orchard. Nurseries will advise you on this. The flowering period of a tree differs between varieties and does not always correspond with their



fruiting periods. If you choose a triploid apple variety such as Bramley, make sure there are two other compatible varieties that will pollinate each other. For cherries since some varieties are non-self fertile and they have pollen incompatibility problems check with the supplier of the trees. They will often suggest good pollinating varieties. As a rule cherry varieties which begin with an 'S' are often self fertile.

PLANTING

Correct planting and aftercare is crucial to a trees long-term survival. Traditional orchards were usually planted in straight rows on a square or lozenge pattern. The trees should be planted in rows at the correct spacing for the fruit and chosen rootstock to enable ease of future management.

MARKING OUT A SITE FOR PLANTING FRUIT TREES

Rows of trees should run down the slope to help with drainage of cold air, although this is not so important with a traditional orchard since the spacing will remain constant between all trees.

1. Take a straight line (A) parallel from the base line, a fence or hedge line and then place pegs along the line at the required tree spacing intervals. Do not forget to leave enough room for the turning of vehicles at the ends of the rows.
2. At the position of the first tree a second line (B) is set out at right angles to the first. This is repeated at the last peg on the initial base line to mark out the other parallel line (C).
3. Mark down on each two parallel (B & C) lines the planting site for each tree.
4. Then take a third line with tapes on it at the desired spacing as marked out on the initial line (A) and fill in between Line (B & C) marking the planting sites until you get to the end of the field.
5. You now have a grid for the planting positions of your trees.
6. For community orchards trees do not have to be planted on the square.

PLANTING

Trees establish more easily and effectively with a stronger root system if they are small when they are planted. This also helps them endure strong winds. When planting trees, the surrounding sward should be removed from the planting site prior to planting. If the site is compacted, dig deep enough to break through this immediately prior to planting. At this point large stones should be removed. Do not dig the site in advance; wet weather could damage its structure. If the soil structure is good, soil disturbance should be minimised when planting. No organic material should be dug in. Dig a hole big enough for all of the roots to be spread out, this will ensure a much better anchorage. On traditional fruit trees the graft will come further up the tree than many of those on dwarfing rootstocks. When planting your tree, make sure the union/graft of the rootstock is well above the ground but all of the roots covered.

MULCHING

A mulch of straw or green waste compost can be placed round the base of the tree to use as a nutrient and minimise the evaporation of moisture from the soil also keeping the ground weed free.

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STAKING THE TREES

When planting standards a short stake removed after two or three years is recommended. The stem must be allowed to sway in the wind to strengthen it; this also encourages the roots to spread. Make sure the correct tie and guard is used to prevent damage to the trunk.

PROTECTION GUARDS

Protection guards must be placed round the tree immediately since rabbit and hare damage can happen the day the tree is planted. Mesh guards are preferable to spirals so that the trunk can be seen.

Strong protection must also be provided against sheep if the pasture is going to be grazed. Place two stakes which stand 1.5 metre above the ground either side of the trunk at least 0.2 metres away from the tree. Make a circle of weld mesh netting and staple it to the stakes round the tree. The trees can be loosely tied to the stakes eliminating the need for a short stake.



GROUND COVER

Ground cover management is important. Grass down the orchard and either graze or mow the pasture. The traditional method and most sustainable way to manage the grass sward is by grazing it with sheep. Running chickens under your trees will help clear up pests. Horses are not compatible with orchards. Controlled grazing during the autumn and winter months can be used to encourage the build up of native species in the sward.

AFTER CARE

After planting remove any branches that may have become damaged in transit or during planting. You may need to remove any very low branches to ease fitting of rabbit guards. For apples and pears tip the top growth by cutting the top 5 to 10 cm back to bud. Your trees should produce a full crop in eight years.



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