



Setting up an organic orchard



Top A new orchard gives you the chance to get it all right
Above Recent re-grafting at Oakwood Farm

Ever considered diversifying into organic top fruit production? **Stella Cubison** outlines the main principles of getting started

Few people haven't romanticised about having an orchard – either as part of a garden or allotment, or on a more commercial basis. Growing your own orchard top fruits, such as apples, pears, plums and cherries, can be very rewarding. But it is a long term investment and starting from scratch can seem rather daunting at first.

An orchard is defined as a grove of 12 or more trees, although it can obviously range up to several hectares. But whatever the area, the establishment issues are the same and starting from scratch offers the perfect opportunity to get everything right from the start: from selecting the most appropriate varieties and rootstocks to incorporating wildflower strips and other wildlife havens – or integrating other ventures, such as livestock, bee-keeping, or inter-cropping in the crop alleyways.

Site selection

Most new orchards are established in existing grass-clover swards or meadows. It is best to avoid land that was previously used for fruit crops, although crops from different species may follow each other – for example, cherries may follow apples.

A gentle south or south-west facing slope is ideal, providing long, sunny periods for growth and good air movement, as well as helping with soil drainage. The site

should be sheltered – particularly from cold winds in spring which can affect pollination and fruit set, and from autumn gales. Think about positioning windbreaks and shelterbelts as early as possible: indeed, it is better to establish windbreaks well in advance to ensure adequate shelter during tree establishment.

Crops which flower early, such as pears, cherries and plums, are particularly vulnerable to spring frosts, so try to avoid sites with frost pockets and hollows where cool air collects. If this is unavoidable then do not plant any trees below the 'frost line' – the point at which cool air naturally accumulates in hollows and valley bottoms.

Soil preparation

Most orchards have a productive life of at least 15 years, so it is worthwhile ensuring the soil is in optimum condition from the outset. Check the soil nutrient and pH status early and address any issues that arise. A soil pH range of 5.5 to 7.0 is required (6.5 to 6.7 is considered ideal for cherries and 6.0 to 6.5 for apples, pears and plums). Top fruits can grow on a wide range of soil types but will do best on deep (0.6m+), well-drained, medium-textured (heavy loam – clay loam), fertile soils with high organic matter content. You can increase levels of organic matter with applications of well-composted farmyard manure, or green manures and cover crops. While trees

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Above Integrating poultry is a worthwhile consideration
Below Two-year-old trees, mulched with green waste



grown on vigorous rootstocks will generally cope with poorer soils, all will perform poorly on dry, light soils. Shallow soils or those which cause root restriction due to compaction or 'panning' are also unsuitable (unless corrected by sub-soiling).

How many trees will I need?

Rootstock choice will determine the planting density and therefore the number of trees needed to fill your orchard area. Row spacing (the distance between the rows) depends mostly upon the type of equipment you will use in the alleyways. A standard in-row spacing for trees on semi-vigorous rootstocks (such as MM106) is 3.5m, with rows spaced about 5m – enough room for a tractor to pass comfortably – which gives a tree density of about 570 trees/ha (230 trees/acre).

Once you have determined the planting area and the planting distances, you can now calculate the number of trees required. This is done by multiplying the row spacing by the plant spacing, and then dividing the available plantation area (for example 10,000m for one hectare) by the total row x plant spacing calculated. It is advisable to deduct 10% from the final figure to allow for field margins and headland space.

What about pollinators?

Although some varieties of top fruit are self-fertile, a better crop is more likely if they are cross-pollinated by at least one other different variety. If you are growing a good mix of varieties then specific pollinator trees may not be necessary, but always check with your fruit tree supplier or nurserymen that the varieties you choose are compatible and have overlapping pollination groups.

Depending on the varieties grown, it is important to consider the arrangement of pollinators within the orchard, planting either whole rows of a pollinating variety or setting a pollinator at intervals along the crop row (every third tree in every third row). If you are planting several rows of trees they will be easier to manage (convenience of pruning and harvesting) if they are planted in single rows or groups of each variety, rather than mixing varieties up.

Marking out

Marking out and planting by hand is perfectly satisfactory for most small scale operations. Marking out is usually a two person job – especially if you are using a tape measure. Ideally, aim to plant rows with a north-south orientation to ensure as much sunlight gets to the trees as possible, without any shading.

Step 1: Using a lengthy tape measure, walk both the top and bottom ends of the orchard and place a cane into the ground at the desired location where each row is to run. Allow a minimum 2m field margin space (required by Environment Stewardship) around the outside of the orchard area which will be left uncultivated, together with enough room for a tractor (or other equipment) to pass and turn in the corners.

Step 2: Put in stakes at the ends of each row. If you are not too fussy about final positioning, ploughing a furrow

Sourcing

You must attempt to source organically raised trees and will need a derogation to use non-organic trees. Advance ordering is recommended, as most propagators graft to order and may not have desired varieties immediately available. Top fruits are usually sold as one-year-old trees or 'maidens' which may be un-feathered whips or feathered (with a few developed laterals). Two-year-old trees are also available but more expensive. It usually takes several years before significant fruits are produced, allowing both trees and land to complete conversion, if necessary. For a list of suppliers call **0117 914 2400**.

backwards and forwards between the stakes will give you a cultivated row ready for planting. Otherwise, stretching a taught 2mm soft galvanized wire at ground level between the stakes provides a guiding line for measuring and staking at the desired planting points along the row. For exact planting, measuring and marking out the sides of the orchard – and vertically – will give a criss-cross pattern, marking the location of the planting holes where the wires intersect. Irrigation lines and plastic mulch can be laid (if required) once the site has been marked out.

Planting

The best time to plant trees is during late autumn, but if the soil is unworkable you can postpone until spring (planting should be completed before bud-burst in March). When planting, ensure that the graft union of each tree is at least 5cm above ground level to prevent the top part (scion) rooting into the ground. Most top fruits will benefit from stake support for at least the first two years of their life (longer for dwarfing rootstocks) and the trees should be firmly secured to the stake without risk of rubbing or loosening.

Care during establishment

Provided the soil is in good condition, the trees should require little supplementary fertiliser during tree establishment. Irrigation may be necessary in dry weather, especially during the critical growing periods of May and June, or where the soil is light or shallow.

During the first two years after planting aim to remove any blossom which forms so that the trees' resources are not diverted to fruiting. It is particularly important to keep the base of the trees free from weeds which will compete for moisture and nutrients. Trees may need protection from livestock, deer, rabbits, birds and other animals – this may mean fencing the whole orchard or just individual trees which are particularly at risk (rows close to woodland). Find out about key pests and diseases and watch out for them – particularly aphids, which can cripple young trees in severe infestations.

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