

Creating an Orchard €2 / supporter €1

Site

The perfect site for an orchard:

- South facing slope, receiving light from early morning to late evening
- Free-draining
- Rich, loamy soil
- Slightly acidic or neutral - approx pH 6.5
- Sheltered from strong winds and sea salt spray
- Good air ventilation, not a frost pocket

Stand where you are considering planting – observe where the sunlight falls, the wind blows and the air moves. Observe frost pockets during frosty times especially late spring (April/May) and again make observations when gales blow.

Soil

Soil should be free draining. Fruit trees do not like water logged conditions in their root zone for extended periods of time.

Damp conditions result in poor oxygen levels in the soil and ideal conditions for fungal disease to attack the stressed trees. Good soil structure ensures moist but aerated conditions for best root development. This is essential for healthy, productive, long living trees.

Site preparation and future maintenance should ensure pH is kept at approximately pH 6.5

Drainage

To test for drainage dig a hole 50cm square and 50cm deep. Fill with fresh water. If the water has not totally drained away within 90 minutes, then the site has unsuitable drainage.

Knowledge of the water table and risk of flooding is essential. Ensure there is no hard impermeable pan below the topsoil which may be water retentive. Siteworks to correct drainage issues must be completed and observed to be successful before orchard establishment.

Sun

All fruit need the sun to ripen fruit *and* to ripen fruit buds for next year's fruit. Pruning may be necessary in future years to remove excess foliage and increase light dispersal throughout the canopy.

Frost

Winter cold should not be a problem to a healthy apple tree. In fact it is necessary for good dormancy. However frost during blossom time may destroy the blossoms and/or discourage insect pollination activity. Therefore avoid planting in a frost pocket. Fruit ripen and develop best flavour in sunny locations.

Wind and Air Ventilation

Poor ventilation will encourage the growth of moulds and fungi. Orchards in low lying areas may be susceptible to moss growth on main stems.

Too much wind at pollination time will discourage insect movement. Poor pollination will result in poor yield. Apple trees are tolerant of moderate wind. For very exposed sites a shelter belt of trees or a hedge should be planted.

Shelter should protect from turbulent wind **but not shadow** and **not create root competition**. Don't plant the tree close to other large trees or hedges as they will overshadow the apple tree and rob it of light and soil nutrients.

Pollination

Apple trees are insect pollinated. Bees are often named as the chief pollinators but many other moths and flies also carry out the same job equally well.

Most apple trees are diploid – meaning they require one other variety for successful pollination. Some however are triploid, therefore requiring three varieties. This means two or three *distinct varieties* – trees of the same variety cannot pollinate each other.

Different varieties blossom at different times. For successful pollination pollinating trees must be of the same flowering group i.e. they flower approximately at the same time, thus allowing insects to transport pollen from the flower of one variety to the flower of another.

Most apple varieties are classified into one of three flowering or pollination groups: early, mid and late season. Flowering times vary from region to region and even according to local site conditions, that is why dates are not given, instead compare varieties according to their 'flowering group'.

The pollinating partner (pollenizer) bears no influence on size, shape or taste of fruit. Therefore a crab apple in a nearby hedge is a perfectly suitable pollenizer, provided its flowering time coincides with that of the orchard tree.

Bees and other pollinators are reported to travel upwards of one mile, therefore apple trees planted in towns or villages may have suitable pollenizer varieties in the vicinity, and can fruit quite well when planted on their own. However best fruit set is assured by having at least three varieties (of the same pollinating group) planted in close proximity.

Choice of variety

The ideal site is good enough to grow good quality tasty apples of almost any variety. There are some varieties that will not successfully ripen in Ireland due to insufficient sunlight hours, the most notable of which is Granny Smith, which ripens successfully in Australia, but not in Ireland.

Apples originating from the UK, North France, Northern USA and other climates with similar sunlight hours have been successfully grown in Ireland for many years (some varieties for several centuries). When considering a variety it is best to do some research. Find out from local fruit growers and gardeners which varieties have done well in your local area.

We advise choosing a nursery which does its own propagation locally and has the mother trees available to observe their health and fruiting.

A less than ideal site will be less favourable for some varieties. Choose varieties known to do well in such conditions. Genetics are the key to success in such situations. ISSA have such information available.

Fruiting Habit

Spur-producing varieties build up small twiggy fruit spurs off the main branch system and this is where the fruit is produced each year. All of the major commercial varieties are what is known as "compact spur" as they produce the biggest return for the grower. Because of the commercial take-over of apple growing many old tip-bearing varieties have been lost.

Tip-bearers produce their fruit predominantly on the ends of last year's growth. Pruning should be minimal as any wood removal will result in removal of fruit buds. Big old trees of this type have a beautiful

weeping habit as the weight of the fruit continually pulls down the ends of the branches.

Taste

Taste is an individual thing. People differ greatly in their opinions. Best to choose fruit based on your own assessment as you may be disappointed by catalogue descriptions. Apples are a very diverse species; perceptions based on the narrow range available in regular shops may be completely misleading. Green apples don't always taste like granny smith! Red apples don't always taste like royal gala! Heritage and gardeners fruit must be tasted to be appreciated.

Taste is influenced by soil type, climate, and local growing conditions. Taste varies from year to year, depending on factors such as summer sunlight in particular.

ISSA and other good Fruit Centres hold apple tasting events during fruiting season. Fruit enthusiasts visit orchards several times during the harvest to appreciate tastes of different varieties as they ripen. But at least one tasting visit is advisable to inform your choice.

Long-Term Maintenance & Harvest

Choose rootstock and layout based on future work.

Harvesting from large trees must be done by ladder, or else by waiting for windfall. Bear in mind that windfall usually results in bruised fruit which will not store so long. If you have a preference for harvesting from ground level, then dwarf or semi-dwarf trees must be chosen.

Livestock such as horses and cattle are not suitable for orchards as they would damage, foliage and tree structure. Sheep and geese have been a traditional choice for grass maintenance – be aware that a suitable rootstock should be chosen: choose such that the lowest branches will be out of reach.

Access for lawn mowing is only practical under larger trees.

Fruit trees feed almost exclusively in the top soil. They do not have deep tap roots. Therefore they compete for nutrients with grass and other vigorous herbaceous plants. In the first few years of a trees life its root system is unable to compete with grass or vigorous weeds, therefore it is essential to keep a radius of at least 1 metre completely weed free around the young tree.

Dwarf trees must have weed-free conditions in their root-zone for all their lives. Standard trees may be able to compete with grass and weeds when in their mature stage (when they have reached their full height and come into good fruit bearing). But best fruit growing requires weed control and annual soil improvement through mulching and small nutritional additions.

Roots of mown grass compete more strongly for nutrients than grass left to grow to meadow. Therefore mowing or grazing grass is not the same as 'grass and weed free' – grass and vigorous weeds must be completely eliminated. We recommend regular mulching as the most preferable option.

Mulching

The goal of mulching is to restrict weed and grass competition and create good soil structure for the fruit trees feeding roots. It also protects bare soil from depletion by drought and wind exposure.

Mulching can be achieved with many materials including cardboard, straw, leaf mould or commercially available 'fabrics'. Here are some tips:

- Mulches that bio-degrade eventually breakdown to improve the soil. Degradation results in re-doing each year but gives the opportunity to feed the soil with other additions such as well-rotted farmyard manure.
- Mulches which do not biodegrade such as 'Mypex' may last for several years, but eventually weeds such as catch grass and creeping buttercup take root into the weave and become a lot of work to remove. In future years, additional feeding is difficult through such a 'permanent' layer.
- Mulches should be permeable to rain water and air – if not then the trees roots will suffer from oxygen and moisture shortage; soil structure will deteriorate over time. Therefore polythene plastic is not an advisable long-term solution; it may be used for a short period of several months to kill existing grass and weeds, on a once-off basis.
- Hay is not advisable as it contains grass seed which will result in grass competition next year. Avoid any mulch which contains undesirable seed.
- Mulching and maintenance weeding is an annual task. It is most efficient to do some quick weeding 3 to 4 times in the year to catch weeds when they are small. It is a good excuse to visit the orchard to assess its health and whether work needs to be done.

Rootstock Information

Growing apples from seeds creates new varieties, as the pollen from at least one other variety is needed to pollinate most varieties. The resultant seedling is a new and unknown variety – it may differ substantially from its parents. But if you fancy nurturing something new then go for it!

Most apple trees won't grow readily from cuttings. 'Rootstocks' have been developed which are types of apple grown for their roots onto which the variety is grafted. Rootstocks have been developed to restrict the height of the trees (important for commercial growers), precocity (makes the variety produce more fruit), fruit size, colour intensity and certain soil types. All heights are approximate after 10 years, but expect some variation due to the grafted variety.

Please see below summary of rootstock characteristics:

M27 – Extreme dwarfing

Grow up to 1.8 m (6 feet), fruit within 3 yrs. Requires good soil, regular feeding, watering and its root-zone to be kept weed free. Plant 2m apart or in large pot.

M9 - Dwarfing

Grow to 2.2m (8 feet). Requires good staking. Root-zone to be kept weed free. Plant 2.5 metres apart or in a large pot.

M26 – Semi-dwarfing

Grow to 3m (10 feet) and fruit in 3-4 years. Plant 3m apart.

MM106 – Semi-Vigorous

Grow to 4.5 m (15 feet) and fruit in 5 yrs approx. Plant 4.5 m apart.

MM111 & M25 – Very vigorous

Grow to 5 m plus. Tolerate poorer soils. Plant at least 5 m apart. Fruit in 6 to 8 years.

Summary of Considerations when choosing varieties:

- Flowering group – ensure overlap of variety flowering times
- Fruiting time – spread harvest over full season
- Storability – to further extend your harvest
- Use – cooker, eater, juicer, cider...
- Taste!
- Fruiting habit - spur or tip bearing
- Rootstock – influences size, spacing, maintenance, harvest, etc...