

Traditional orchards: glossary

This information note provides a glossary of some of the many technical terms used in fruit production. Other information notes in the series provide guidance on various aspects of traditional orchards. For details see *Further information* below.

Adventitious bud

A bud on older wood that has remained dormant. Although it is no longer in a leaf axil, it may still break and form new growth, often in response to increased light levels following pruning (see TIN017 *Traditional orchards: maintenance pruning*).

Alternate bearing

See Biennial bearing.

Apical bud

See Terminal bud.

Apical dominance

The influence of a growing shoot tip on the bud and shoots below during the current growing season.

Axillary bud

(syn. Lateral bud)-

Buds which form on maiden laterals in each leaf axil. In subsequent years the bud may remain dormant, become a growth bud, or become a fruit bud, depending upon hormones within the tree (see TIN017 *Traditional orchards: maintenance pruning*).

Bare-rooted tree

A tree supplied from a nursery without any soil around its roots. This can only be done when the tree is dormant (ie while it is not in leaf).

Bark ringing

(syn. Girdling)-

The removal of horizontal strips of bark from a tree's trunk or branches to reduce its vigour and

encourage fruiting (see TIN017 *Traditional orchards: maintenance pruning*).

Biennial bearing

(syn. Alternate bearing)

Where a tree crops irregularly, alternating between high and low yielding years. It can be reduced by appropriate pruning or by thinning the blossom or fruit during heavy years to encourage the tree to set more fruit during light years (see TIN017 *Traditional orchards: maintenance pruning*).

Branch axil

See Branch union.

Branch bark ridge

The ridge of usually darkened, rough bark at the base of the branch, running across the upper surface and extending back into the trunk. It is formed where the growing, expanding stem and branch tissues press against one another and squeeze the bark up and out between them (see TIN015 *Traditional orchards: an introduction to pruning*).

Branch collar

The distinctive wrinkled or swollen bulge of wood encircling the base of a branch below the bark branch ridge, where it attaches to the trunk or another limb. It is usually more prominent on the underside of the branch. It is formed from interlocking layers of cells from the branch and the trunk where their annual growth rings overlap. This creates a very solid section of wood, known as a 'knot' in timber, which is important in binding the limb to the tree.

Branch collars vary widely from tree to tree. Some are large and very noticeable, while some are much harder to distinguish (see TIN015 *Traditional orchards: an introduction to pruning*).

Branch crotch

See Branch union.

Branch union

(syn. Branch crotch or Branch axil).

The point at which a tree branches outward from the trunk or a main branch (see TIN015 *Traditional orchards: an introduction to pruning*).

Bud

See Axillary bud.

Budding

A method of grafting where a dormant bud is grafted onto the stem of another stock plant and, when successfully fused, is encouraged to grow by removing the stem above the new bud.

Bullace

A type of plum, similar to a damson but rounder, often found growing wild in hedgerows and scrub.

Bush tree

A tree grown on a dwarfing rootstock and developed without a clear trunk. Often planted in commercial orchards or gardens.

Callus tissue

Specialised, tough woody growth that develops around the edge of a wound to form a protective boundary, preventing infection and decay.

Cambium layer

The cylindrical layer of tissue between the bark on the outside and the wood on the inside, where growth occurs.

Canopy

See Crown.

Central leader

The main stem on a young tree that is selected to form the trunk. (see TIN016 *Traditional orchards: formative pruning of young trees*).

Cider

An alcoholic drink made from apples.

Cobnut

(syn. Filbert)

A cultivated variety of hazelnut (see TIN013 *Traditional orchards: site and tree selection*).

Co-dominant limbs

Two or more adjoining, forking branches of similar size (see TIN015 *Traditional orchards: an introduction to pruning*).

Coppicing

A practice of cutting a tree or bush to ground level (or near ground level) on a regular rotation to stimulate the growth of straight, upright stems.

Cordon

A form of tree training. The cordon is usually grown on dwarfing rootstock and against a wall, so that it forms a single straight stem at an angle of approx 45° to the ground. Cordons are usually grown in rows.

Coronet cuts

A pruning technique used to mimic the tears and fractures that occur when branches break naturally. As well creating a more natural (as opposed to flat) cut, this method creates habitats that are colonised by micro-organisms and succession species.

Cross pollination

The transfer of pollen from the male part of a flower on one plant to the female part of a flower on another plant.

Crown

(syn. Canopy)

The upper part of a tree, including the branches and leaves. The term is often used to refer to the extent of the outer layer of a tree's leaves.

Cultivar

See Variety.

Dehorning

(syn. Heading back)

The reduction in height of a mature tree through the removal of major, often upright, limbs (see TIN018 *Traditional orchards: restoration and management of mature and neglected orchards*).

Dormant

Used to refer to a tree which has shed its leaves for winter and stopped growing. Also used to refer to a bud that has not developed into a fruit bud or growth bud.

Dwarfing rootstock

A rootstock developed to reduce the size and vigour of the tree grown upon it whilst maintaining proportionately high yields (see TIN013 *Traditional orchards: site and tree selection*).

Espalier

A form of tree training. The tree is usually grown on dwarfing rootstock and against a wall, so the branches form two or more horizontal layers from a short, vertical trunk.

Fan

A form of tree training. The tree is usually grown on a dwarfing rootstock and against a wall so the branches radiate out from the base of a very short trunk like the ribs of a fan.

Feather

A side shoot arising from the central leader of a young tree.

Festooning

(syn. Spreading)

The process of tying down young, flexible upright branches into a more horizontal position. This helps to form a stronger branch union, reduces their vigour, encourages them to develop fruit buds and makes the fruit easier to pick.

Filbert

See cobnut.

Flower bud

See Fruit bud.

Flush cuts

Removing a branch with a cut that is flush with the trunk or main stem and inside the branch bark ridge or the branch collar, so causing damage to the stem tissues (see TIN015 *Traditional orchards: an introduction to pruning*).

Formative pruning

The initial pruning of a young tree to develop a balanced shape (see TIN016 *Traditional orchards: formative pruning of young trees*).

Framework branch

(syn. Primary branch)

A large branch or stem, usually attached directly to the trunk, that helps to make up the structural shape of the tree (see TIN016 *Traditional orchards: formative pruning of young trees*).

Frameworking

Where the top of a tree is cut back and one or more new varieties added to it by grafting. This method is used to replace unsuitable varieties.

Frost pocket

A depression or hollow where heavy cold air collects (see TIN013 *Traditional orchards: site and tree selection*).

Fruit bud

(syn. Flower bud)

An axillary bud that, controlled by the tree's hormones, swells and produces a flower the following year. Over subsequent years it will develop into a spur (see TIN017 *Traditional orchards: maintenance pruning*).

Gapping up

The planting of new trees within an existing orchard to replace those that have died, usually within former tree stations to follow the original planting pattern.

Girdling

See Bark ringing

Grafting

A method of vegetative propagation where tissue from one plant - a scion, is attached to the root system of another plant - a rootstock (usually of the same species), in order to

replicate the variety of the scion. The tissues of the two parts then grow together producing one tree that is genetically two different plants.

Grafting union

The join between the rootstock and the scion, usually visible on the trunk as a raised bulge of scar tissue, even on mature trees. The tree may be wider above or below the grafting union, or display differing bark.

Growth bud

(syn. Vegetative bud)

An axillary bud that, controlled by the tree's hormones, develops into leafy growth the following year (see TIN017 *Traditional orchards: maintenance pruning*).

Growth habit

The shape in which the tree grows. This varies between species and varieties within species.

Half-standard tree

A two- to four-year-old tree in a nursery that has been grown on a vigorous or semi-vigorous rootstock, where the branches begin at a lower height on the trunk than on a standard. The term is also used to refer to mature trees that have been grown to this form. This tree form may limit the choice of livestock to sheep, or prevent grazing at all (see TIN016 *Traditional orchards: formative pruning of young trees*).

Heading back

See Dehorning.

Included bark

Where two branches form an acutely angled union, and the expanding limbs grow over and around the union enclosing the bark deep within it, forming a crack or slit. Included bark does not knit together properly so these unions are usually weak and more likely to break (see TIN015 *Traditional orchards: an introduction to pruning*).

Interstock

See Stem-builder.

Lateral

A horizontal stem or branch that carries growth buds and fruit buds, and bears leaves and fruit. See also Maiden lateral.

Lateral bud

See Axillary bud

Leader

A strong upright stem that is selected to extend the main branch framework of a tree.

Leaf axil

The point at the base of each leaf where axillary buds form.

Maiden

A one- to two-year-old fruit tree, either with feathers or without (when it is often referred to as a whip). Also used in forestry to refer to a tree that has not been pollarded (see TIN013 *Traditional orchards: site and tree selection*).

Maiden lateral

A one-year-old lateral.

Mulch

A layer of organic matter such as straw, bark chippings, compost or farmyard manure, placed around the base of a tree to suppress weeds and retain moisture (see TIN014 *Traditional orchards: planting and establishing fruit trees*).

Mycorrhizae

Fungi which live in the soil and form a symbiotic relationship with trees, providing water, nutrients and other benefits in return for carbon (see TIN019 *Traditional orchards: fruit tree health*).

Mycorrhizal association

The term for the relationship between a tree and its mycorrhizae (see TIN019 *Traditional orchards: fruit tree health*).

Nicking

Removing a small piece of bark below a bud to restrict the flow of nutrients to it and discourage it from putting on string vegetative growth. In response it may put on weak growth or become a fruit bud

Notching

Removing a small piece of bark above a bud to stimulate it to put on strong vegetative growth, by restricting the flow of nutrients to buds further up the stem. Used to encourage new growth lower down a stem than it would usually form, particularly with restricted tree forms.

Perry

An alcoholic drink made from pears, in a similar manner to cider.

Pinching out

The pruning of the tips of young green shoots during the growing season, usually by hand.

Plat

Another name for an orchard of cobnut trees.

Pollarding

The practice of cutting off a tree trunk, usually about two metres above ground level, to encourage new, upright growth from that point. The cutting is usually repeated - either completely, or by selectively removing branches - at regular intervals, to provide straight timber.

Pollination

The transfer of pollen from the male part of a flower to the female part. See also, Cross pollination.

Primary branch or leader

See Framework branch.

Propagation

The multiplication of a plant. Plants can be propagated by sexual or vegetative means (see TIN013 *Traditional orchards: site and tree selection*).

Pyramid

A restricted form of training a tree. The tree, usually grown on a dwarfing rootstock, is cut so that its branches radiate horizontally from ground level upwards, with the lower branches being longer than the upper ones.

Regulated pruning

The most basic method of pruning standard trees. Entire branches are removed, rather than

individual laterals and spurs, with the emphasis on the removal of crowded or crossing branches and diseased or damaged wood (see TIN017 *Traditional orchards: maintenance pruning*).

Renewal pruning

A method of pruning standard trees, effectively a compromise between regulated and spur pruning. It follows a similar approach to regulated pruning, but is applied to each limb individually rather than the tree as a whole (see TIN017 *Traditional orchards: maintenance pruning*).

Rootstock

A root system onto which a scion is grafted. Often used to improve disease resistance or to control the vigour of the resulting tree. See also, Dwarfing rootstock (see TIN013 *Traditional orchards: site and tree selection*).

Root collar

The point on the trunk of a tree where it meets, or should, meet the soil level.

Russet

The name given to apples that characteristically display a large amount of russetting, eg 'Egremont Russet'. See also, Russetting,

Russetting

A brown, corky condition that may develop on the surface of apples or pears (see TIN019 *Traditional orchards: fruit tree health*).

Scion

The aerial part of the tree that has been grafted onto a rootstock. The scion is intended to form the crown of the tree and bear the vegetative growth and fruit, and so will be a named variety.

Secondary branch or leader

A branch or stem that arises directly from a primary branch or leader (see TIN016 *Traditional orchards: formative pruning of young trees*).

Self-fertile

A species or variety of tree that is able to fertilise and set fruit with itself, or with another tree of the same variety.

Sexual reproduction or propagation

Where male pollen fertilises a flower (usually on a different tree). The seeds produced will not be the same variety as the tree it came from, but will grow into a tree that inherits characteristics from both its parents and will have many unpredictable characteristics of its own. This is how new varieties are created. Although this is desirable in terms of increasing biodiversity and the richness of the gene pool (such sexual recombination is the source of most new cultivars), only rarely will such fruit trees prove to be worth propagating and cultivating. A tendency to revert to a wild-like state is common (see TIN013 *Traditional orchards: site and tree selection*).

Snag

A short length of wood left behind on a broken branch or after pruning. Can be applied to large branches on mature trees or where feathers have been pruned back on young trees. The term is also used in forestry to refer to the broken trunk left after a tree collapses.

Spreading

See Festooning

Spur

Short, twiggy fruiting side shoots that develop naturally along the laterals from fruit buds, usually on two-year-old shoots, or can be induced to form by selective pruning. They produce flowers and subsequently bear the fruit (see TIN017 *Traditional orchards: maintenance pruning*).

Spur bearer

A species or variety of fruit tree that habitually bears fruit on spur systems distributed at regular intervals along the branches (see TIN017 *Traditional orchards: maintenance pruning*).

Spur pruning

A method of pruning, developed to maximise fruit production. It can only be applied to spur-bearing trees and involves close pruning to encourage a system of fruiting spurs, close to the main branches (see TIN017 *Traditional orchards: maintenance pruning*).

Spur system

A short, branching cluster of spurs, formed over time as a spur divides and expands.

Standard tree

A two- to four-year-old fruit tree in a nursery that has been grown on a vigorous rootstock and shaped to have a clear stem that will allow livestock to graze underneath. Also used to refer to mature trees that have been grown to this form (see TIN016 *Traditional orchards: formative pruning of young trees*).

Station

The place within an orchard where a tree has been planted (or had previously been planted) according to a structured plan.

Stem-builder

(syn. Interstock)

An intermediate stem piece used in a graft between the rootstock and the scion. It is used to provide a strong trunk for standard trees to resolve any incompatibility problems, or to introduce disease resistance.

Stone fruits

Fruit trees of the *Prunus* genus. These fruits have a hard stone at the centre, instead of a core with pips.

Stub cuts

Pruning cuts made too far outside the branch bark ridge or branch collar, which leave small lengths of branch tissue attached to the stem that are prone to dying back.

Sub-lateral

A shoot growing out of a lateral.

Sucker

A thin, vigorous shoot arising from the rootstock (ie below the grafting union).

Terminal bud

(syn. Apical bud)

The bud at the very tip of an unpruned maiden lateral, from which vegetative growth always occurs.

Tier

A layer of primary branches coming off the trunk at roughly the same height.

Tip bearer

A species or variety of fruit tree that habitually bears fruit in clusters near, but not at, the tip of the previous season's growth, in the opposite manner to spur bearers (see TIN017 *Traditional orchards: maintenance pruning*).

Top worked

A tree where the scion has been grafted onto the rootstock at head height rather than near ground level.

Topping

A poor maintenance practice often used to control the size of trees. It involves the severe indiscriminate pruning of branches and stems at a similar height, often creating a flat-top or globe shape, with no regard for the size of the limb or the direction it is growing in and often leaving long stubs. Often improperly referred to as pollarding.

Trunk

The main central stem of a tree to which the framework branches are attached.

Variety

(syn. Cultivar)

New varieties are produced by seedlings from cross-pollination. Trees resulting from cross-pollination will have characteristics of both the tree on which the seed grew (the 'mother') and of the tree that pollinated it (the 'father') and will therefore be a new and different variety. Although most new seedlings will not produce worthwhile fruit, some will. Where the merits of a new seedling are observed and appreciated it may be propagated into a new variety for marketing (see TIN013 *Traditional orchards: site and tree selection*).

Vegetative bud

See Growth bud.

Vegetative growth

Leafy, upright growth where the buds that 'break' develop into growth buds rather than fruit buds.

Vegetative propagation

The process of taking a cutting (or scion) from an existing variety of tree and growing it on, usually by budding or grafting, to produce a new plant that is a clone of the original parent variety (see TIN013 *Traditional orchards: site and tree selection*).

Wand

A sucker from a cobnut tree.

Water shoot

A thin shoot without fruit buds that arises from a dormant or adventitious bud on older wood, often as a result of over-pruning.

Whip

See Maiden.

Windthrow

When a tree is uprooted by the wind. This usually affects mature trees with large, top-heavy, unpruned crowns.

Further information

Natural England Technical Information Notes are available to download from the Natural England website: www.naturalengland.org.uk.

This note is aimed at managers of traditional orchards and agri-environment scheme land management advisers. Other orchard notes include:

- TIN012 *Traditional orchards: a summary*
- TIN013 *Traditional orchards: site and tree selection*
- TIN014 *Traditional orchards - planting and establishing fruit trees*
- TIN015 *Traditional orchards: an introduction to pruning*
- TIN016 *Traditional orchards: formative pruning of young trees*
- TIN017 *Traditional orchards: maintenance pruning*
- TIN018 *Traditional orchards: restoration and management of mature and neglected orchards*
- TIN019 *Traditional orchards: fruit tree health*

- TIN020 *Traditional orchards: orchards and wildlife*

For further information contact the Natural England Enquiry Service on 0300 060 0863 or e-mail enquiries@naturalengland.org.uk.

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