

Fruit machines

Promising higher yields from smaller plots, a new growing technique could revolutionise the way we grow apples. **Simon Garbutt** gets his teeth into the details. Photography by Tim Sandall



FOODFRUIT

WILL'S SUGGESTED APPLE CULTIVARS

'Braeburn' A highly popular 'supermarket' apple. Hardy derivatives such as 'Hillwell' and 'Braeburn Helena' are suitable for most of the UK. Dessert; self-fertile; store fruit for use in Jan-Mar
'Bramley's Seedling' Culinary; self-sterile; Nov-Mar
'Charles Ross' Handsome, traditional, dual-purpose (culinary/dessert) fruit; partially self-fertile; Sep-Dec
'Discovery' One of the best early-maturing dessert apples; self-sterile; Aug-Sep
'Egremont Russet' The best-known and most popular of the russet apples. Distinctive, rich, nutty flavour. Dessert; partially self-fertile; Oct-Dec
'Ellison's Orange' Intensely aromatic cultivar, similar to 'Cox's Orange Pippin', for which it makes a good alternative in northern Britain. Dessert; partially self-fertile; Sep-Oct
'Grenadier' The best-known early-season cooking apple. Culinary; partially self-fertile; Aug-Sep
'Meridian' Dessert; self-sterile; Oct-Mar
'Pinova' Disease-resistant, late dessert apple. Good flavour; self-sterile; Nov-Jan
'Red Falstaff' A crisp, juicy, heavy cropping, colourful, dessert apple; partially self-fertile; Oct-Dec
'Laxton's Fortune' Red-flushed, early season dessert apple; partially self-fertile; Sep-Oct
'Winston' Dessert; self-fertile; Dec-Apr

STRESS HAS GOT A BAD NAME these days, but I often find that a bit of pressure can prove productive. The same, it seems, is true for apple trees, as a new commercial growing technique, recently introduced to this country from the Netherlands, is proving. Orchards planted using the new system can yield more than twice the weight of quality fruit per hectare compared with conventional methods. Just as similar developments in cherry-growing adapt well to a domestic setting (see *The Garden*, August 2006, pp548-551), this commercial approach to growing apples can work equally well in a small garden or allotment.

According to fruit specialist Will Sibley, who has been instrumental in introducing the technique to the UK, the work leading to this breakthrough was perfected by the Dutch. 'The trees are on a dwarfing rootstock, so they can be planted quite close together,' he says. 'They begin cropping in their first year, and by the third year they can produce around 90-110 apples per tree.'

In the Netherlands the first orchards

HIGH GRAFT Will Sibley (above) points out the graft on a 'leg' tree: at 20cm it is higher than a traditional one. Shallowly planted, on an M9 dwarfing rootstock, this type of tree is essential for the new system to succeed, as all these factors help to curb vegetative growth in favour of fruit

planted in this way are now around 10 years old and have been giving consistent crops, depending on the cultivars grown, of 60-80 tonnes per hectare, compared with around 30-40 tonnes produced by conventional orchards. A particularly high-yielding cultivar such as apple 'Braeburn' can yield as much as 100 tonnes per hectare.

The tree type

Success depends upon sourcing the correct type of tree, called a 'leg' tree, or *knipboom* (literally 'cut tree' in Dutch), grown on a dwarfing, M9 rootstock, with the graft union at least 20cm up the trunk. It is cut back to 70cm above ground the year after grafting, then grown on to produce a young tree about 2m tall with a central leader and several

radiating branches at about waist height.

Familiar to commercial growers, trees trained in this way are rarely found in garden centres, where aesthetics win over productivity, but they are becoming more widely available through a number of mail-order suppliers (see list, p245) in a widening range of cultivars.

Choosing apples

In a garden or allotment, Will recommends planting several cultivars together to ensure good pollination and fruit set. He suggests a culinary selection (early-season 'Grenadier', a good pollinator, or later-cropping 'Bramley's Seedling') and some dessert apples, such as a hardy derivative of high-yielding, late-ripening 'Braeburn', early 'Laxton's Fortune' and tasty, disease-resistant newer cultivars such as 'Red Falstaff', 'Pinova' and 'Meridian'. ▶

'THIS APPROACH TO GROWING APPLES CAN WORK WELL IN A SMALL GARDEN OR ALLOTMENT'



1-YEAR-OLD ORCHARD



2-YEAR-OLD ORCHARD

For those who prefer historic dessert cultivars that rarely appear in the supermarket he recommends trying 'Egremont Russet', 'Ellison's Orange' (a good alternative to 'Cox's Orange Pippin' for northern Britain), early-cropping 'Discovery' and late-season 'Winston'. Dual-purpose 'Charles Ross' is another good pollinator.

The technique works with tip-bearing and spur-bearing cultivars, and should also overcome any tendency to biennial bearing. Local knowledge can be helpful in choosing which cultivars to grow. In the coldest parts of the country, or on more exposed sites, certain popular cultivars will survive but may not crop well. Even in mild districts, early blossom can be damaged by frost, so try to avoid 'frost pockets' where cold air collects, and choose a fairly open site that is sunny but reasonably sheltered.

Remember it is vital to start by getting the correctly grafted and trained type of 'leg' tree from a specialist fruit nursery. These will be dispatched as bare-root stock when dormant in early spring, having been kept in cold storage, and will usually be more expensive than traditionally-trained apples.

Where and how to plant

Apples are not too fussy about soil type; extremes of acidity and alkalinity are unsuitable, and dry, sandy conditions are best avoided, but any other reasonably good soil will do.

SERRIED RANKS Packed in tightly, supported by stakes and wires, and pruned to stay compact, new 'leg' tree orchards of apples (above) are being planted in southern Britain

Prepare the planting site well. No fertiliser is needed at this stage, but dig in organic matter such as garden compost or spent mushroom compost to help retain moisture and improve structure.

Because M9 rootstocks are so dwarfing, and the trees will be planted shallowly, they need support throughout their lives, so each will remain fixed to a permanent stake. Put a stout post at each end of the row (and at 3m intervals in the row, if required), which should ideally run north-south so maximum sunlight can reach both sides of the trees. Stretch strong wires between the posts at 1m, 1.5m and 2m heights. Space rows 3m apart, if more than one is required.

Plant the bare-root trees between February and April. They will have been kept in cold storage since November to initiate bud growth. Soak the roots overnight in a bucket of water.

Space the required number of 2m-high stakes about 80cm–1m apart and plant a tree next to each. Plant shallowly, spreading the roots out across the soil and pulling loose earth over them, as if earthing up potatoes. Firm well. The graft union should be at least 20cm above the soil. Tie the trees in, taking the leader straight up the stake and tie the lowest

branch on each side horizontally to the bottom wire. Water well.

For good crops these shallow-rooted trees will need watering throughout the growing season. Commercial growers use irrigation systems that deliver liquid feed, but on a garden scale both water and feed can be given from a can. The rows must be kept weed-free by shallow hoeing, or apply a thick mulch layer to moist soil in summer.

Training and pruning

In their first year the trees should not need pruning. Allow them to set up to four fruit each (but no more than one fruit per branch), as this helps ensure that they do not make too much extension growth. In the second year each tree can be allowed to produce up to 40 apples (pick off any excess young fruits in early summer). From the third year onwards they should regularly bear 80–100 fruit each.

Pruning is carried out in January or February (right), and is the key to both preventing over-vigorous growth and maximising the fruit crop. Allow only eight or nine branches per tree, radiating out from between 90cm and 1.3–1.4m from the ground. Reduce any lateral growths appearing on the leading shoot above this point to short fruiting spurs. The leading shoot itself should not be cut at all and will grow straight up to about 2.8m. After some years it can be

trunk is removed completely at its base.

Branches growing along the row are tied to the wires to keep them horizontal – this restricts sap flow and encourages flower buds, and supports the weight of fruit. Branches radiating out in other directions are also pruned to grow as horizontally as possible.

Troubleshooting

Regular heavy cropping reduces the tree's vigour, so summer pruning is not necessary. If vigorous new branches arise during summer and are well placed to be a fruiting spur, cut back to two or three buds in September – any earlier and fruit buds are unlikely to form.

If the blossom ever gets frosted and no fruit is set, the tree may start making a lot of strong, leafy growth in early summer. In these extreme circumstances, drastic root pruning is needed to curb the vigour. Insert a sharp spade vertically alongside the trunk to sever all the roots on one side of the tree. This should check the growth, but if it fails, repeat on the other side before midsummer.

Pests and diseases should be no more of a problem with this growing system than with any other. Pheromone traps are

a 'green' means of pest control and are becoming available for a wider range of pests. Scab and mildew have become an increasing scourge in recent years, as the range of permitted fungicides has diminished. Choosing disease-resistant cultivars is the best way to avoid problems.

The blowsy, billowing beauty of a traditional orchard is a luxury that few have the space to afford today. Trained trees pack more variety into a smaller space; characterful espaliers and cordons evoke the kitchen gardens of centuries gone by, but time moves on. With their ease of management, high planting densities and sheer, reliable productivity, these 'leg' trees look like becoming the future of apple-growing. ■

Simon Garbutt is a freelance garden writer and photographer

Suppliers of suitable trees include:

(order in early autumn for delivery during winter; be sure to specify you want a 'leg' tree, grafted onto M9 rootstock)
Blackmoor Nurseries, Hants. 01420 473576; website: www.blackmoor.co.uk; email: nurserysales@blackmoor.co.uk
Thompson & Morgan, Suffolk. 01473 688821; website: www.thompson-morgan.com; email: ccare@thompson-morgan.com
Suttons Seeds, Devon. 0870 2202899; website: www.suttons.co.uk; email: mail@suttons.co.uk

Pruning technique



1 Prune in winter Restrict the number of branches to eight or nine. Remove those thicker than half the diameter of the trunk (above), and any sharply upward-growing limbs and shoots, close to their bases



2 Thin the crown hard Above the 1.5m wire all sideshoots not ending in a flower bud should be cut out, leaving only short spurs with fat fruit buds



3 Leave the leader intact Removing branches near the crown ensures that maximum light reaches the lower branches. Will Sibley has let the shoot indicated remain because it ends in a fruit bud