STRESS HAS GOT A BAD NAME these days, but I often find that a bit of pressure can prove productive. The same seems to be true for apple trees, as a new commercial growing technique, recently introduced to this country from the Netherlands, is proving fruitful. Plants 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 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 110 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 20 cm up the trunk. It is cut back to 70 cm above ground the year after grafting, then grown on to produce a young tree about 2 m 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 planting the following:

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Type</th>
<th>Season</th>
<th>Self-Fertile</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Braeburn’</td>
<td>Dessert</td>
<td>Nov–Mar</td>
<td></td>
<td>Hardy derivative, suitable for most of the UK</td>
</tr>
<tr>
<td>‘Bramley’s Seedling’</td>
<td>Culinary</td>
<td>Nov–Mar</td>
<td></td>
<td>Self-sterile; rich, juicy, heavy cropping</td>
</tr>
<tr>
<td>‘Charles Ross’</td>
<td>Culinary</td>
<td>Sep–Dec</td>
<td></td>
<td>Partially self-sterile; good flavour, self-sterile; Nov–Mar</td>
</tr>
<tr>
<td>‘Discovery’</td>
<td>Dessert</td>
<td>Aug–Sep</td>
<td></td>
<td>One of the best early-maturing dessert apples</td>
</tr>
<tr>
<td>‘Egremont Russet’</td>
<td>Dessert</td>
<td>Oct–Nov</td>
<td></td>
<td>Late dessert apple; rich, juicy; self-sterile; Nov–Mar</td>
</tr>
<tr>
<td>‘Grenadier’</td>
<td>Culinary</td>
<td>Sep–Oct</td>
<td></td>
<td>Self-sterile; aromatic, for which it makes a good alternative in northern Britain</td>
</tr>
<tr>
<td>‘Hillwell’</td>
<td>Dessert</td>
<td>Jan–Mar</td>
<td></td>
<td>Self-sterile; late dessert apple; good flavour; Nov–Mar</td>
</tr>
<tr>
<td>‘Laxton’s Fortune’</td>
<td>Dessert</td>
<td>Dec–Apr</td>
<td></td>
<td>Early season cooking apple; self-sterile; Jun–Jul</td>
</tr>
<tr>
<td>‘Pinova’</td>
<td>Dessert</td>
<td>Nov–Mar</td>
<td></td>
<td>Self-sterile; late dessert apple; good flavour; Nov–Mar</td>
</tr>
<tr>
<td>‘Red Falstaff’</td>
<td>Culinary</td>
<td>Aug–Sep</td>
<td></td>
<td>Self-sterile; crisp, juicy, heavy cropping</td>
</tr>
<tr>
<td>‘Winston’</td>
<td>Dessert</td>
<td>Sep–Oct</td>
<td></td>
<td>Self-sterile; good flavour, self-sterile; Dec–Feb</td>
</tr>
<tr>
<td>‘Wynford’</td>
<td>Dessert</td>
<td>Sep–Oct</td>
<td></td>
<td>Self-sterile; good flavour; self-sterile; Dec–Feb</td>
</tr>
</tbody>
</table>

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 late-opening ‘Bramley’s Seedling’) and some dessert apples, such as a hard derivative of high-yielding, late-opening ‘Braeburn’, early ‘Laxton’s Fortune’, and tasty, disease-resistant newer cultivars such as ‘Red Falstaff’, ‘Pinova’ and ‘Meridian’.

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-sterile; stone fruit for use in Jan–Mar.

‘Bramley’s Seedling’ Culinary; self-sterile; Nov–Mar.

‘Charles Ross’ Handmade, traditional, dual-purpose (culinary/dessert) fruit; partially self-sterile; 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-sterile; 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-sterile; Sep–Oct.

‘Grenadier’ The best-known early-season cooking apple; Culinary; partially self-sterile; Aug–Sep.

‘Meridian’ Dessert; self-sterile; Oct–Mar.


‘Red Falstaff’ A crisp, juicy, heavy cropping, colourful; dessert apple; partially self-sterile; Oct–Dec.

‘Winston’ dessert; self-sterile; Sep–Oct.

‘Wynford’ Dessert; self-sterile; Dec–Apr.

Photography by Tim Sandall
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**. Remove any vigorous, leafy shoots from the tree itself and tie the lowest branches radiating out in other directions to grow as horizontally as possible.

For those who prefer historic dessert cultivars that rarely appear in the supermarket, he recommends trying ‘Grenade 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, on or in 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 or alkalinity are unsuitable, and dry, sandy conditions are best avoided, but any other reasonably good soil will do.

Prepare the planting site well. No fertilizer 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.

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 tap. The rows must be kept weed-free by shallow hoeing, or apply a thick mulch layer to moisten 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 replaced if necessary by training another shoot into an upright position.

Cut off any vertical shoots (apart from the leader) and crossing branches, and remove topmost shoots without a fruit bud at the end. This concentrates the tree’s energy into producing blossom and fruit, not extension growth. From the third year onward, any branch with a diameter more than half that of the 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 bloom 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 along 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. Scale 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 blowy, 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:

Suttons Seeds, Holbeach, Lincolnshire. 01406 378563; email: nurserysales@suttons.co.uk

Thompson & Morgan, Waltham Essex. 01371 873499; website: www.thompson-morgan.com; email: ccare@thompson-morgan.com

Blackmoor Nurseries, Lambourn, Wiltshire. 01420 478357; 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

Food Fruit

2-YEAR-OLD ORCHARD

1-YEAR-OLD ORCHARD