

Tree Planting



Tree planting is a simple operation but many schemes end in failure due to poor plant handling and aftercare. Following these guidelines will make sure your trees get off to the best possible start.

1— Choice of plant stock

For most tree planting schemes, bare-rooted stock in the size range 25-40cm or 40-60cm will give the best results (see Fig 4 overleaf). Plants of this size are cheap to buy, easy to plant and establish well in most conditions. Cell-grown plants (Fig 1) grown individually in small containers are more expensive but are easy to store and handle.

Larger plants may be appropriate when an immediate impact is desirable

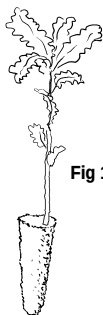
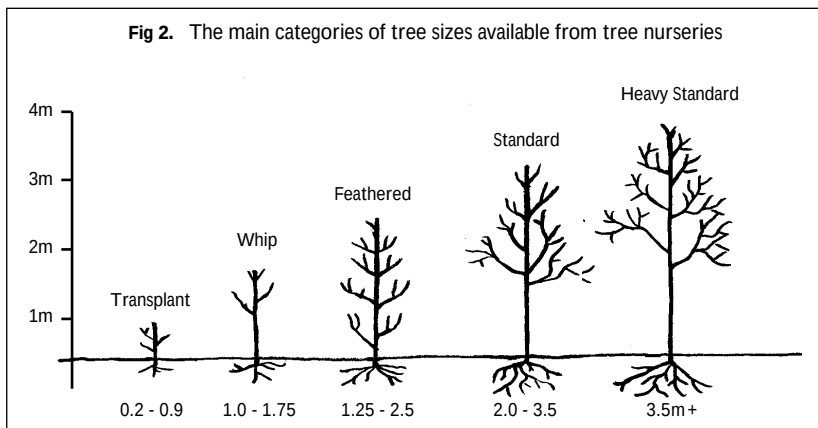


Fig 1.

but they are considerably more expensive, require far more work during planting and can be difficult to establish. **It is worth noting that small stock which are well maintained will outgrow larger plants (1.5m +) within 3-5 years.**

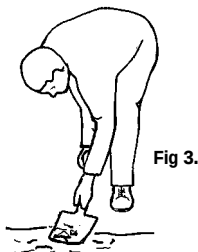
The range of tree sizes available from nurseries is shown below. Larger plants will often be supplied as root balled stock. These are normally provided with a hessian wrapping to hold the soil in place. Planting larger trees is heavy work and it is recommended that schools and volunteer groups do not attempt to plant trees over two metres in height.

Fig 2. The main categories of tree sizes available from tree nurseries



2— Ground Preparation

You must suppress any existing vegetation to reduce competition for water and nutrients. A transplant or cell grown plant will require an area of at least 1m² to be cleared. Herbicides can be used in the late summer prior to planting otherwise some form of cultivation will be necessary. Screening (the process of shaving vegetation off the soil surface), is a useful approach for small schemes. (Fig 3)



3— When to plant

Plant bare root stock between November and the end of March. Cell grown stock may be planted between September and May. Technically root balled plants may be planted all year round, but success is more likely during the dormant season November-March.

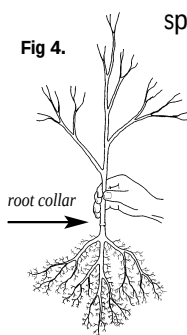
Early season planting (pre- christmas) is preferable for all stock types. The soil is warmer which encourages root growth, and plants are afforded a longer period of time to establish new root networks before the advent of spring.

Where possible avoid planting in sunny, windy, drying weather. **Never plant when snow is on the ground or during periods of hard frost.**

4— Stock Assessment

The conditions of plants should be checked on arrival. You should reject

spindly plants and those showing evidence of physical damage, dessication or disease.



For small plants (30-60cm) the diameter of the root collar (**see Fig 4**) can be a useful indicator of vigour.

Such plants should have a minimum root collar diameter of 5mm. The position of the root collar is indicated by a marked change in stem colour. If dessication is suspected carefully 'nick' the bark of the plant stem, there should be a layer of fresh green material (the cambium layer) just below the bark.

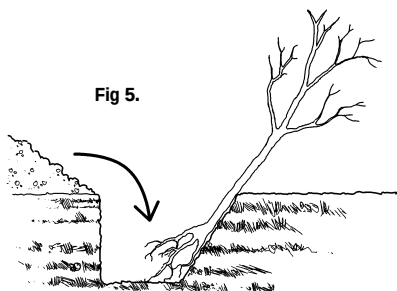
Bare root stock (of all sizes) should have a compact fibrous root system with a good root/shoot ratio (see Fig 4).

5— Plant handling and storage pre-planting

Handle with care! Avoid causing physical damage to the plants. Ensure that the roots are protected from drying out.

Bare root stock should be supplied in polythene bags. Stock should be kept in the bags until planting. In the short term they may be stored in a cool frost free shed or similar. The roots should be regularly watered to prevent them drying out. If plants are to be stored for longer than a week they should be heeled in (Fig 5).

Dig a trench cutting one side at an angle whilst casting the spoil onto the opposite side. Space the plants tightly along the



angled side of the trench then cast the spoil back over the roots and lightly firm it in. Plants can be stored for several months by this method.

Cell grown stock can be stored in their containers for several months provided the roots are kept moist and protected from frost.

Rootballed stock should be supplied with a hessian wrapping to hold the soil in place and help prevent root dessication. It should be planted as soon as possible. If plants are to be stored the root ball must be kept damp.

6— Plant handling during planting

Handle with care! Keep plants bagged up to prevent the roots drying out, they should only be removed from the bag when you are about to plant them. If you must plant in adverse conditions, try to keep the bagged plants sheltered from the sun and the wind.

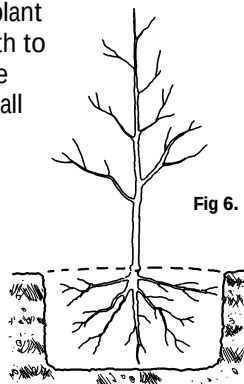
1— Planting methods

Pit planting

Suitable for all stock types and necessary for container grown stock and plants over 90cm.

Excavate a pit sufficiently large to freely accommodate the roots without constraint. Remove the plant from the bag and hold it in the centre of the pit with the root collar just below ground level. Scoop the earth back into the pit crumbling any large clumps and removing large stones.

Gently pull the plant to allow the earth to settle around the roots. Use the ball of the foot to firm the loose earth back into the pit. Take care not to scrape the bark of the plant. Ensure the root collar finishes at ground level. (Fig 6)



Slit or Notch planting

Suitable for small bare root and cell grown plants. This is best undertaken where the ground has been cultivated, **Do not use on heavy clay soils.**

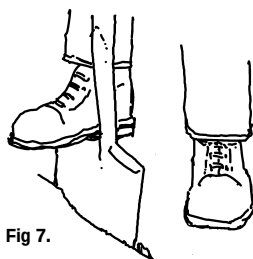
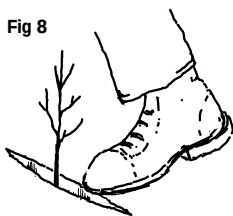


Fig 7.

Insert a spade into the earth to the desired depth, move forwards and backwards to open up the notch

(Fig 7). Sweep the plant into the hole from the side ensuring the roots are not constrained.

Using the ball of the foot, press the edges of the notch together taking care not to scrape the bark (**Fig 8**).



Ensure the root collar finishes level with the ground and that the plant finishes upright. Sometimes it may

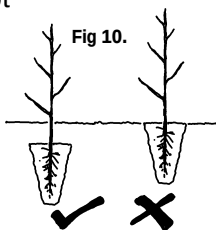
be necessary to create a larger notch by cutting at right angles to the first slit to open up a T or L shaped notch. (**Fig 9**)

Fig 9.



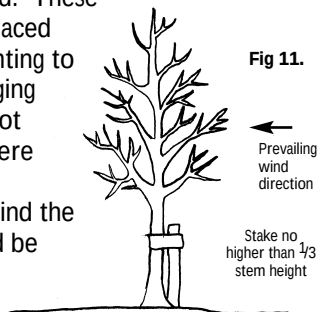
When planting cell grown stock, the plant root plug should be covered by at least 1" (25mm) of soil to prevent it drying out and becoming loose in the planting hole.

(Fig 10)



8— Use of Stakes and Ties

Plants larger than 1.5m will need the support of a stake until the root system is established. These should be placed prior to planting to avoid damaging the trees root system. Where there is a prevailing wind the stake should be positioned upwind of



the tree. It should finish no higher than a third of the height of the tree (**Fig 11**).

A tie will be required to attach the tree to the stake, these come in a variety of forms. Whatever type is used it is important that the stake and the tree stem are separated by a soft buffer to prevent damage to the stem (**Fig 12**).

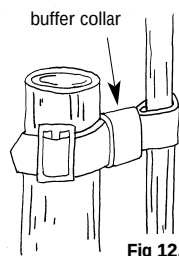
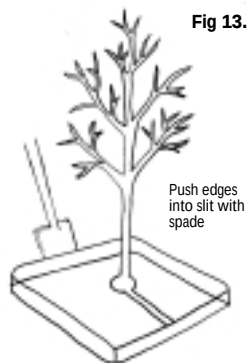


Fig 12.

9— Application of Mulches

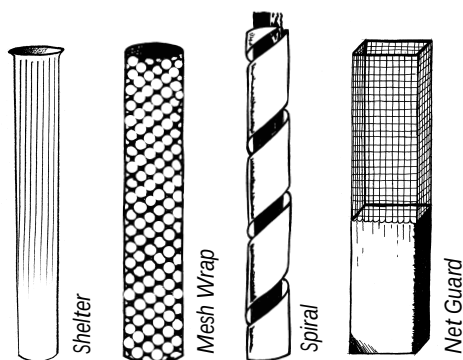
Some form of weed control is essential if newly planted trees are to flourish. If properly applied and maintained, mulches can be effective at suppressing weeds. Loose organic mulches such as woodchip or well rotted manure are commonly used and widely available materials. To be effective, the existing ground vegetation must be destroyed prior to application. This can be achieved through the use of a herbicide or screefing. The mulch should be applied to a minimum depth of 100mm covering an area of at least 1m² around the tree. Mulch mats may be obtained from most tree nurseries, they are easily fitted and may be secured either by the use of pegs or by forcing the edges of the mat into the earth with the edge of a spade (**Fig 13**). They are generally more effective than loose mulches but are more susceptible to vandalism.



10— Use of Tree guards and shelters

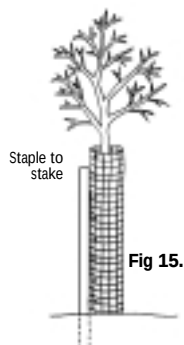
Where plants may be subject to damage by animals, they will require some form of protection. Fencing will be required to prevent plants from being trampled or eaten by large animals such as sheep, horses and cattle. Rabbits are perhaps the most common problem and in this instance, guards are often the cheapest option. The most commonly available types are shown below (**Fig 14**). Where possible, use the smaller size shelter (up to 600mm). Net guards

Fig 14.



incorporate a herbicide shield at the base of the guard. Some shelters have a flared end at the top of the shelter to reduce friction damage when the tree grows above the height of the shelter. Most shelters require the use of a cane or a small stake for support. Staples or ties should be used to attach the guard to the support. The base of the guard should be pushed 50mm into the ground. New to the market are mesh wraps, which expand with the growth of the tree and require no support.

Larger types of shelter are sometimes used to protect plants from deer (**Fig 15**.) They need to be used with a stake to provide support. This should be positioned prior to planting to avoid damaging the roots.



11— Aftercare

Aftercare is the most neglected aspect of tree establishment, and the most common cause of plant failure.

Weed control, either through the use of mulches, herbicide or hand weeding must be undertaken for at least the first three years after planting. Strimmers should not be used in tree maintenance. Cutting grass stimulates it to compete for water and nutrients and careless use of the strimmer can kill or damage new trees.

Trees should be checked in the first weeks after planting particularly after storms or hard frosts. Frosts can cause the ground to heave, loosening the roots.

Trees planted late in the season may require watering in a dry spring. Tree ties should be loosened over time to prevent constriction of the tree stem. Stakes should no longer be required after the second growing season and should be removed to prevent the tree from becoming over dependent upon their support.

Regulations have been brought in concerning the use and storage of pesticides. Certificates of competence are required by any contractor who uses pesticides. Volunteer groups are classed as contractors and need to meet these requirements.

Key Points list

Ensure that you order planting stock of the appropriate size and species

Inspect the condition of stock upon receipt, reject damaged or unhealthy plants

Ensure stock is handled and stored correctly, i.e. keep plants bagged up to prevent roots drying out.

Suppress existing ground vegetation

The planting season runs from October to the end of March. Early winter plantings are often more successful. Whatever the season avoid periods of hard frost, snow and windy, sunny weather.

Pit planting is the most successful method and it should always be used on heavy clay soils. Ground frost can cause notches to open up.

The importance of aftercare cannot be over emphasised, effective weed control is essential if a scheme is to be successful.

Strimming around new plants is not an appropriate method of weed control

Ensure new plants are protected from animal damage.

Useful References

1. Tree Planting and Aftercare. BTCV 1996.
2. Tree Warden Action Pack, Tree Council 1997.

Useful contacts

1. Durham County Council, Landscape Manager, advice on grants, good practice and training Tel: 0191 383 4078.
2. Durham County Council, Volunteer Co-ordinator, contact for local tree wardens. Tel: 0191 383 4087.
3. Schools Grounds Project Officer, can provide advice and assistance with environmental improvements in school grounds. Tel: 01740 656210.
4. BTCV, (British Trust for Conservation Volunteers), can provide advice and assistance with tree planting. Tel: 0191 383 2121.
5. The Tree Council, 51 Catherine Place, London, SW1E 6DY. Information and written materials concerning the tree warden scheme. Tel: 0171 828 9928.
6. BTCV Enterprises can supply tools and handbooks. Tel: 01302 859 522.