
The aftercare of young and mature trees

TONY KIRKHAM reports on a workshop held in the Arboretum at the Royal Botanic Gardens, Kew on 1 April 2009, which was possibly the warmest spring day of the year. Over 40 members enrolled for the workshop, which was run by Tony Kirkham with the help of his arboretum and nursery manager, Tony Hall and two key members of staff, Joy Corbett and Helen Marriage.

In 2005 a tree planting workshop was held at Kew bringing IDS members up to date with the latest techniques and materials that can be used to successfully establish trees in a garden or arboretum. Unfortunately many trees are lost in the subsequent years following planting due to the lack of simple observation and aftercare.

This workshop was planned to highlight the events in a tree's life, where they are vulnerable and how, with a minimum of care and few resources, successful establishment rates can be increased.

In the *Nothofagus* species collection the group were reminded of the techniques and specification used at Kew to plant trees successfully.

Due to seasonal weather change and the drier springs that we are witnessing in the south-east of England a major change to the Kew tree planting specification is the timing of the operations; moving from spring to autumn planting in order to encourage as much root growth in the warm soils following planting as possible, so that trees are part established by the spring. If trees are planted in October, the soils are warm enough through to early December to support root growth, whilst the rest of the tree remains dormant.

The following is a reminder of the basic principles for successful tree planting:

- Square pits within the tree circle
- Shallow depth (one spit of the spade, deeper if larger root-ball) and wide
- No organic matter or compost in the backfill
- Plant the tree to the correct depth (the nursery line or hypocotyl)
- The addition of soil ameliorants e.g. mycorrhizae
- Only use stakes where necessary and if stakes are required, use round stakes and appropriate tree ties
- Guard the tree for rodent/mammal protection
- Mulch the tree circle to prevent weed growth or moisture transpiration
- Label accurately
- Water the specimen in

The first two to three years after planting are critical for the tree's establishment and often go forgotten. Most well-planted trees die from drought during the first dry spells, as fibrous roots are unable to find enough moisture to

support the specimen and what moisture was available has been lost to weed competition or from evaporation due to a lack of mulch. Some gardeners say that trees must not be spoilt and if they are to survive then they have to find their own water; however for the sake of one or two visits to the tree to provide it with a drink, establishment can be easy.

Many trees that we plant we have personally collected or grown in the nursery and are too valuable to loose due to a lack of water. Not only is the tree lost, but time and this can never be recouped.

A 'Tree Gator' watering bag from the USA was demonstrated on a young tree. These bags hold a reservoir of 20 gallons which then takes ten hours to slowly dissipate through a fine stitch in the base of the bag, thus all the water penetrating through the tree pit to the roots.

Watering loops that are installed to the tree circle on larger nursery stock should be used as a reservoir for irrigation, placing the water where it's needed; around the roots. These are also beneficial for the exchange of gasses in the tree pit, again encouraging root activity.

It is imperative that weeds are controlled in the circle, preventing competition for space and water; this can be done manually by hand weeding, by the use of mulches or by the use of herbicides.

Mulch mats are now not used at Kew, as they failed to breakdown over the five years that the manufacturers said and paddling of the soil surface under the mat was causing anaerobic conditions and a build up of earwigs. Once weeds like couch grass or bindweed found their way into the mat, it was then impossible to control.

Chemical control is done at Kew with Glyphosate products such as 'Roundup' and 'Rosate' through a knapsack sprayer and a high volume spray nozzle to reduce the risk of spray drift and without these herbicides we would not be able to maintain the standards in the arboretum that we want to. Granular applications of products in winter such as 'Kerb' and 'Casoron G' are not used in the arboretum due to them having adverse effects with organic matter and root damage experienced in the past.

In the first year of establishment there is no need to feed trees. Their first act of survival is to anchor themselves and find water. Any fertiliser applied will be leached through the soil and be wasted or help to feed the weeds that you are trying to eliminate. In the spring of year two if the trees are slow to respond and new extension growth is short or absent, we apply an organic feed to the surface of the pit in the form of dried chicken manure or calcified sea weed. This is then followed up with a top up of organic mulch which in turn feeds the mycorrhizae, which in turn assists the tree's ability to cope with drought and aggressive fungal pathogens.

Where trees are supported, the stakes should be removed at the end of the first year. If the tree is still unable to support its trunk and upper crown, then there is a problem with the planting. Remember that trees need exercise

and need to move in the wind in order to encourage incremental growth and basal flare at the hypocotyl or root crown. This process is known as seismomorphogenesis.

Formative pruning needs to be carried out in the nursery and any unwanted branches should be removed as early a possible in the tree's life. Rubbing out of fleshy growth is the better option which minimizes scarring; the removal of branches with secateurs is better than having to use a handsaw; however the use of a handsaw is better than having to use a chainsaw later on in the tree's life. The key issue is identifying the height of the first scaffolds and the skirt of the tree and removing the feathers, thus cleaning up the trunk as early as possible. At Kew we prefer to retain a low crown or skirt rather than having clean stems or factory trees throughout the arboretum.

If as much effort and care goes into aftercare of trees, the establishment of planting stock will be higher and stress free for the tree which makes for a long term healthier specimen.

Lunch was welcomed and well deserved by the class and was followed by a lesson in tree measuring from David Alderman, the registrar of TROBI, The Tree Register of the British Isles.

This was a lovely day in the arboretum and it is exactly what the Science and Education Committee of the IDS set out to do under the Chair of Giles Coode-Adams. Let's look forward to the next one.

