Key issues in forest establishment

Noel Kennedy & Michael Somers

Planting operation

Trees must be planted properly to provide the best conditions for successful establishment. The main forms of planting are:

- **Slit planting** involves the opening of a slit into which the roots are placed and the slit closed up afterwards. This is the most common planting method for mounded, and ploughed ground.
- **Angle notch** planting involves the opening of an L or T shaped notch with the spade. The roots of the tree are placed in the angle and tightened in. This is carried out on ripped sites.
- **Pit planting** is carried out where there has been no ground preparation because of the good soil quality or because it is in an environmentally sensitive location. This process involves placing the tree in a pit and firming the soil around it.

Regardless of the technique, the planter should:

- Plant tree to correct depth (root collar)
- Ensure the tree is planted upright
- Cover all roots with soil and firm in securely to avoid wind shake.
- Avoid forcing roots into the soil with the spade.

Establishing a forest requires careful planning and input from a professional forester in partnership with the forest owner. How the plantation is established is critical to its future development. Achieving a return on your investment along with protecting and enhancing the environment are major objectives when establishing a forest. All operations need to be carried out in accordance with Forest Service standards and guidelines.

GROUND PREPARATION

The main aim of ground preparation is to assist the early growth of trees and to improve local drainage conditions. The two most common forms of ground preparation are mounding and ripping. Observance of the Forestry and Water Quality Guidelines requires the drainage network to be carefully planned.

Vegetation clearance

On some sites, vegetation may need to be cleared before ground preparation begins. Hedges and ditches should be retained for biodiversity and habitat potential.

Mounding

The most popular form of ground preparation mounding involves an excavator digging drains at 8 or 12 metre intervals and heaping the soil in mounds. The trees are then planted into the mounds, which provide an elevated vegetation free zone. Mounding is particularly effective on poorly draining heavy mineral and peat sites.

Ripping

Ripping is effective on sites where a compacted layer of soil is impeding drainage and ultimately will compromise successful forest development. This involves pulling two ripping arms behind a bulldozer. This shatters the compacted layer leaving behind an underground drainage channel. Trees are planted 20-25 cm from the ripping line.

FOREST PROTECTION

Forests need protection against encroaching stock, fire and insect pest and disease damage throughout the rotation. Protection against fire and stock – domestic and wild – is vital at establishment.

Fire protection

To reduce the fire risk, all vegetation along vulnerable boundaries is removed along a corridor, or firebreak, at least 6m wide. To remain effective these firebreaks should be well maintained and checked at least once a year.

Fencing

All grant-aided plantations must have stock proof boundaries to prevent damage by livestock and other animals. Where existing boundaries are deemed inadequate the erection of a new stock proof fence will be required. All fencing materials including posts and wire must meet the standards required by the Forest Service.

PLANTS AND PLANTING

The quality of the trees you plant, how they are planted and correct spacing greatly influence future growth. The planting season normally runs from November to May when trees are dormant and can be planted bare rooted. The planting season can be extended by using plants from cold storage.

Plant quality

Trees should only be bought from a recognised nursery and should be ordered well in advance of planting. Trees should have a strong fibrous root and a straight stem.

Plant handling

Bags containing trees should be handled carefully and ideally the trees should be planted immediately. If stored the bags should be kept upright in a shaded place or shed and planted as soon as possible.

Table 1. Tree species, stocking and spacing (m) per ha.

Species	No.trees	Spacing
Lodgepole pine (pure)	3100	1.8 x 1.8
All other conifers	2500	2.0 x 2.0
Alder	2500	2.0 x 2.0
Ash, sycamore	3300	2.0 x 1.5
Oak, Beech pure	3300	2.0 x 1.5
Oak, beech with nurse mix	3300	2.0 x 1.5

FERTILISER

On many planting sites fertiliser is necessary for early tree growth. Phosphorus is the most commonly applied fertiliser on newly planted trees. Fertiliser must be applied between the months of April and August to maximise uptake and minimise the risk of environmental damage.

HELPFUL TIPS

The following few helpful tips will maximise the performance of your plantation and ensure that you are well versed on all aspects of forest establishment:

- Ask your forester for copies of all maps, forms and certificates.
- Keep copies of all correspondence.
- As work progresses on your site, keep a diary of when different operations take place and note weather conditions such as frost or drought. This diary will form an important component of your woodland records.
- Walk your plantation regularly during planting.
- Ask plenty of questions.
- For further information, contact your local Teagasc forestry development officer or check their website (www.teagasc.ie).

Noel Kennedy and Michael Somers, Teagasc Forestry Development Department