

## Maintenance Of Young Farm Woodlands

### SUMMARY

- **Maintenance work is required in all woodlands after planting and is essential to:**
  - **achieve good growth rates and rapid establishment;**
  - **meet the conditions of the grant contract and avoid any financial penalties and**
  - **ensure that the woodland rapidly fulfils its designed objectives.**
- **Weeding reduces competition for moisture, light and nutrients which can reduce growth rates and cause mortality.**
- **Replacement of losses is necessary to maintain contractual stocking levels.**
- **Pruning will enhance future timber values.**
- **Income from a sporting let may provide a useful income and help control damaging wildlife.**
- **Tree shelters need regular maintenance.**
- **Pollarding increases the stability of trees grown in shelters.**
- **Open ground within the woodland may also need to be managed to provide conservation or recreational benefits.**

### Introduction

This Technical Note summarises the work necessary to ensure the satisfactory growth and establishment of woodlands in the years immediately after they are planted. The maintenance work required is partly influenced by the type of woodland, its objectives and the methods of ground preparation that were carried out. This Note should be read in conjunction with Notes TN590 '*Site preparation for farm woodlands*' and TN592 - '*Plants and planting methods*'.

### Operations

#### Weeding

Heavy vegetation competes for moisture, light and nutrients and can smother young trees. In drier parts of the country, vegetation, alive or dead, may intercept significant amounts of rainfall and prevent it from reaching the soil. Tall woody weeds or dead stems also cause damage by abrasion. Lack of weeding is a major cause of mortality.

Competing vegetation can be controlled by a variety of means;

- mulching with manufactured (e.g. polythene) or natural (e.g. cut vegetation) mulching materials;
- hand cutting with a bill-hook or mechanical strimmer;
- swiping with a tractor mounted flail mower;
- herbicides.

Mulching with sheeting such as polypropylene or bio-degradable materials such as straw or old carpet underlay can be very effective and may be essential if your farm is organic. It is time-consuming and expensive initially but subsequent maintenance costs are lower. It may increase the risks of vole damage.

Hook weeding is slow and hard manual work. It is usually only carried out when other weed control methods have failed or not been carried out timeously and it is necessary to free smothered trees. Particularly with grasses and herbaceous broadleaved weeds, hand weeding or mowing is likely to stimulate weed growth and therefore increase competition for moisture and nutrients.



These pictures from a Forestry Commission research trial show the benefits of weeding. Both are three year old cherry; the tree on the right had no weed control, the one on the left had a one metre diameter circle kept weedfree (© Forest Research)

Mowing between the trees may be needed to control noxious weeds such as ragwort or thistles and can also reduce vole damage. This also gives the woodlands a ‘well cared for’ appearance which may help reduce vandalism but can look artificial. Bear in mind though that tall vegetation provides valuable nesting cover for many birds. Seeds and nectar from flowers are important food sources for many birds and insects so do not control vegetation needlessly.

In almost all circumstances the use of herbicides is the most effective and economic method of weed control.

The most cost effective method is to use herbicides to keep a spot about one metre in diameter weed free around each tree. Weeding should continue until the trees dominate the surrounding vegetation. As a rule of thumb, conifers are established when they are about 1.2m tall while broadleaves may need to reach 1.5m or more. Where planting is linear it will be cheaper to apply herbicides in bands about one metre wide along the line of the planted trees. This though can cause problems on weedy sites and it is always desirable to spray only the minimum area necessary.

Herbicide treatment over the entire ground area is neither cost effective nor desirable. The absence of ground cover may lead to soil erosion and nutrient loss, as well as representing a lost opportunity to encourage wildlife into the area. In addition, on exposed sites, trees will benefit from tall weed growth between the treated areas where the vegetation provides useful shelter.

### Application method

Application method will depend on the site. On many farm woodland planting sites it is possible to use conventional agricultural tractor-mounted spraying equipment, modified to spray bands, in the first year or two. Quad bikes can also be fitted with small sprayers. The most common application method however is still the knapsack sprayer, allowing for a carefully directed application. A drench gun, with a hollow cone nozzle fitted, is ideal as it is light to carry and delivers a precisely measured quantity of chemical around each tree. Granular herbicides such as Propyzamide can be applied using the manufacturer's plastic 'pepper-pot' dispenser.

### Which Herbicide?

The list of herbicides approved for forestry use is constantly changing and up-to-date advice should be sought from your local SAC Adviser, herbicide supplier, or the current year's 'British Crop Protection Council UK Pesticide Guide'. In all cases it is essential to follow the instructions on the approval label of the herbicide container. In addition, herbicide use must comply with 'The Control of Substances Hazardous to Health Regulations 1988' and all relevant current legislation.

Table 1 summarises some of the most commonly used and most appropriate herbicides for a range of tree and weed species. The list is not definitive or exhaustive. Many other herbicides, not shown, have off-label approval for use in woodlands planted on agricultural land.

**Table 1: Commonly used herbicides for farm woodlands**

CHEMICAL NAME	PRODUCT	WEEDS CONTROLLED	TREE SPECIES	APPROX TIMING	OTHER INFORMATION
Glyphosate	Roundup Biactive	Most annual and perennial weeds but only when actively growing	Most tree species susceptible to damage at all times of the year	Autumn - Spring	Always use as a directed spray during the growing season. Spruces and pines will tolerate overall spraying during the dormant season. Usually rainfast within two hours.
Diquat & Paraquat	PDQ	Annual weeds	Apply pre-planting	Spring	Useful as an alternative to agricultural ploughing for ground preparation on grassland.
Asulam	Asulox	Bracken & docks	Apply pre-planting if possible. Some tree species susceptible to damage. Check label recommendations	July-August when bracken fronds fully expanded	Heavy rainfall within 24 hours of application will reduce effect. Keep livestock out of area for 14 days. Very selective to crop species but will also take out many non-target species that may not be a problem to the trees.
Triclopyr	Timbrel	Wide range of woody species and broadleaved weeds	All tree species susceptible to damage	All year	Useful on woody weeds, e.g. gorse, broom, rhododendron. Winter applications in paraffin or diesel on cut stumps or shoots.
Propyzamide	Kerb Granules Kerb 50W Kerb Flowable	Principally annual and perennial grasses	Most tree species resistant	Oct-Feb	Very effective and easy to apply as granules.
Dichlobenil	Casoron G	Grasses and a wide range of annual and perennial broadleaved weeds	Larch and some broadleaved trees susceptible to damage. Check label recommendations	Jan-March	Damage to trees is possible where granules lodge in leaves or accumulate at the stem base. Dose rate should not be exceeded. Apply only to established trees. Effective on peats.

NOTE: The above information is not intended to be comprehensive. This table can be used as a guide in identifying which herbicide may be appropriate in a particular situation. Many other herbicides are available.

**ALWAYS READ THE INSTRUCTIONS ON THE CONTAINER LABEL**

## Replacement of losses

It is normal for some trees to die however much care you have taken. You should replace losses after each growing season to maintain full stocking; this is sometimes called “beating-up”. If there are too many gaps a woodland will fail to meet its objectives, for example a shelterwood with gaps becomes very draughty, while in a commercial woodland poor stocking leads to coarsely branched trees with a lower value.

If heavy losses are very localised there may be a specific reason, such as waterlogging, that was not apparent at time of planting. If so, consider if further ground preparation may be beneficial or if a different species may do better. Sometimes losses need not all be replaced; variable stocking may provide attractive variation in the woodland or a diffuse edge.

It is part of the conditions of contract for all grant schemes to establish a specified minimum number of trees per hectare. Payment of subsequent grant instalments will be delayed if woods are not adequately stocked.

If trees are in shelters losses can be marked with spray paint or by lifting off the shelter and replacing it upside down over the stake. Otherwise lay out small sample plots or count trees along the rows and estimate losses as a percentage of the total planted.

## Fence and drain repairs

You should check all fences regularly and keep them in good repair. Trespassing cattle or sheep quickly cause damage.

Consider removing fences when they are no longer needed. They restrict public access and become dangerous and unsightly. Game birds, such as black grouse and capercaillie, die from collisions with deer fences while foxes often trap pheasants against rabbit fences.

Drains should also be checked occasionally and any blockages removed. Sump pits may also need to be emptied of silt.

## Tree shelter maintenance

On exposed sites you may need a lot of maintenance to replace broken stakes and ties on shelters. Often weeds grow vigorously inside the shelter, choking the young tree, and you should remove these manually.



If tree shelters are not maintained the woodland will look derelict and may attract fly tipping or vandalism

Most shelters today are designed to slowly break down in sunlight. Occasionally though this does not happen and the tree may fill the base of the tube. This prevents drainage and if water accumulates inside the tube it may kill the tree. To avoid this slit the shelter at the base before the tree gets too large. Remove the shelters and stakes from the site when the trees are established as plastic seldom degrades completely and will cause a litter problem.

## Wildlife Control

Wildlife may need to be controlled within and adjacent to the woods for several years, especially if the trees are not inside shelters or a deer/rabbit fence.

Good spot weeding will reduce the risk of damage by voles.

Hares generally do not cause serious damage to trees once they have been in the ground a few months and as they are a UK Bio-diversity Action Plan Species they should only be shot when absolutely necessary. Rabbits will be a problem until the trees have developed a reasonably thick bark; in most cases this will not be until they are at least five years old.

Roe deer control may be necessary until the trees are ten years old or more. Browsing may start as soon as the trees are planted, but fraying will not appear until the trees are two or three years old and will continue until their diameter exceeds four or five centimetres. Deer benefit from the shelter and lack of disturbance that a young woodland offers and their numbers will, if unchecked, increase rapidly. It is not safe to assume that you will not have a problem in the future if you do not have a problem in the first year. Red deer are much more destructive than roe and should always be excluded from farm woodlands.

Casual shooting of deer and rabbits seldom achieves adequate control. It is far more effective to let the shooting to a professional wildlife controller or an enthusiastic local sportsman or syndicate. If rough shooting of game species is included in the package it is usually possible to charge a worthwhile sporting rent. Seldom is it necessary to pay for wildlife control.

In most woods it is helpful to erect a high seat to facilitate deer control.

## Pollarding and stumping back

Many vigorous species, especially birch, willows and some shrubs have quite weak stems when grown in shelters and will fall over when they reach two or three metres tall and their canopies start to catch the wind. This can be avoided by coppicing or pollarding the trees when they are two or three years old. You may need to replace the shelter until the new growth has established.



Pollarding looks dramatic but within a year or two the tree regrows completely

Coppicing - cutting a young tree back to a stump a few centimetres high - encourages vigorous dense bushy growth to provide low level shelter or cover. This is particularly effective for shrubby species such as hawthorn, elder or hazel. It enhances nesting cover for birds and increases visual diversity in the woodland and shelter benefits.

Pollarding is cutting back the crown of the tree a metre or two above the ground. This should be done if the tree has started leaning but before it has fallen or broken the shelter or ties. Although it looks dramatic, the tree quickly recovers, the stem and root system stabilises and within two or three years the tree growth returns to normal.

## Pruning

This should be carried out in most farm woods. The main benefit is a substantial increase in timber value, especially in broadleaved species where premium prices are paid for large diameter logs that are straight and knot free. It also opens up woodlands making them more accessible for driving birds or inspection, allows you to control the porosity of shelterwoods and enhances amenity.

- Formative pruning is the removal of coarse side branches or forks to create a single straight stem.
- High or lateral pruning is the removal of all side branches to create a stem with knot free timber.

Pruning is covered in much more detail in Technical Note 594 '*Pruning to improve timber quality*'.

## Management of open ground

Open ground should not be neglected; positive and planned management will create a more diverse and interesting woodland environment.



Mowing makes a site look neat and tidy, controls noxious weeds and encourages public access

Regular mowing, where you are providing public access, encourages people to use the woodland, defines the line of paths and provides areas for ball games or picnicking. Short mown grass also acts as a firebreak and may help to reduce vole numbers.

Mowing for hay in late summer, or closely controlled grazing by cattle (where the rules of the grant schemes permit), encourages wild flowers. Butterflies and other species can benefit from a variety of heights in vegetation, which can be achieved by cutting either side of rides and paths in alternate years. Rides that can catch the sun are usually more valuable for wildlife than those permanently in the shade and management effort should be focussed on these as a priority.

Do not try and mow all open ground - many species such as partridge and pheasants nest in tussocky vegetation on the woodland edge. Some natural regeneration of scrub creates a more interesting woodland edge and provides excellent nesting cover and berries for winter feeding of many birds. You may need to be careful not to let invasive species such as blackthorn get out of control. You should be prepared to spray or mow to control noxious or nuisance species such as ragwort, willowherb or thistles, particularly if the seeds could blow onto agricultural land. Other 'weeds' should be left to add diversity to the woodland, provide seeds for birds during winter and nectar and pollen for insects during the summer.

Other areas may need a specific management regime. For example wet areas can be left to develop semi-natural wetland vegetation. You could even consider blocking or diverting drains to make these areas wetter.

For advice on the management of the non-woodland habitats and to enhance their value for wildlife conservation you should also seek the advice of a conservation specialist.

## Legal requirements

Appropriate health and safety procedures must be followed for all the operations outlined above. In particular for spraying, personal protective clothing must be worn, operators must have the appropriate Certificates of Competence and you must comply with all label instructions.

## Grant aid

Depending on circumstances Forestry Commission grants aid may be available for some of the operations described above. Grants change frequently and current details are in SAC's Technical Note #556 '*Grant aid for trees and woods*' which is regularly updated.

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