
CHRISTMAS TREES

AN INTRODUCTION

CALU
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INTRODUCTION

Growing Christmas trees is an option which more and more garden centres, nurseries and other businesses are considering. Over recent years production numbers have increased significantly: from 4.4m trees produced in the UK in 2001, to 6.5m in 2005. Nevertheless, approximately one million Christmas trees are imported from the continent, mainly Denmark, each year.

There are good arguments for setting up a Christmas tree plantation, including the strength of the Euro. This is making imported trees look less attractive as they become relatively more expensive. Home grown Christmas trees also have an attractive marketing factor which can encourage customers to buy them. However, setting up and running a Christmas tree plantation is a time and labour intensive operation which requires skills as well as foresight: it will take around seven to 10 years before the first crop of Christmas trees will be ready for the market.

SPECIES

Many species are used as Christmas trees: some are more fashionable in some years than others. Historically, it was the Norway spruce that was the traditional Christmas tree. In recent years various types of fir tree have overtaken the spruce in terms of popularity. This is because they tend to hold their needles better and are less prickly. However, they are slower growing and therefore more expensive to produce. Table 1 provides an overview of the characteristics of the most commonly bought Christmas tree species in the UK:

Table 1: Common Christmas tree species

| Common name | Botanical name | Characteristics |
|---------------|---------------------------|---|
| Noble fir | <i>Abies procera</i> | Typical "Christmassy" scent, soft needles, approx. 10 – 12 years to reach 2m height; susceptible to late frost (all <i>Abies</i> are), soil pH approx 5.0 |
| Nordman fir | <i>Abies nordmanniana</i> | Soft needles, very good needle retention. Even, pyramidal growth, approx. 10 – 12 years to reach 2m; susceptible to late frost (all <i>Abies</i> are), soil pH approx. 5.0 |
| Frasier fir | <i>Abies fraseri</i> | Thick green foliage, strong conifer fragrance, needles retained very well, soil pH 5.0 -5.8. Five-year-old transplants will require about 5-8 additional years to reach a height of 2 – 2.40m |
| Norway spruce | <i>Picea abies</i> | Traditional Christmas Tree; even pyramidal shape, beautiful deep green colouring and a fresh aroma; needles are sharp at the tips. soil pH 5.5 – 6.5. Approx. 8 – 12 years to reach marketable size. |
| Scots pine | <i>Pinus sylvestris</i> | Deep rooting, less demanding conifer, naturally growing on poor sites, soil pH slightly alkaline and acidic (pH 5.0 – 7.5). Does not have the "typical" Christmassy shape, marketable in 5 to 7 years depending on selling size |

PLANTING AND SPACINGS

Two to four year old transplants, raised in a nursery, are planted out in their final sites during the dormant season - from late November to early April. Care must be taken that the plants are still in dormant state at the time of planting to guarantee a high establishment rate. The roots need to be protected from sunlight and wind at all times during the planting operation to prevent drying out and root death. A thin layer of weeds during the first year can be beneficial as it offers some protection to the roots. However, a fine balance has to be struck as too much weed competition will check the growth of the trees.

To ensure that the crop develops to produce trees of uniform shape and size, it is important to space the trees correctly. For Nordman fir & noble fir a spacing of 1.2m x 1.2m is recommended with paths every 12m – 20m. Spruces are planted either 1m x 1m or 1.2m x 1m. When planning the plantation, consideration needs to be given to the space needed for fencing and paths to enable easy access for management. Table 2 provides an indication of the actual number of trees per hectare achieved from various nominal planting spacings once paths and fences are taken into account.

Table 2: Plantation spacing

| Spacing | Trees/ha (nominal) | Trees/ha (inc fencing and paths) |
|-------------|-----------------------|-------------------------------------|
| 1m x 1m | 10,000 | 8,700 |
| 1m x 1.2 | 8,300 | 7,220 |
| 1.2m x 1.2m | 6,900 | 6,000 |

MANAGEMENT

Pruning and Shearing

From the first year onwards, pruning and shearing are necessary to improve the quality of the trees. Pruning the lower shoots also improves the access to the crop. The operation increases the foliage density as well as the shape of the tree. In some cases where the terminal bud has failed bud pinching and forcing of a single leader is necessary to ensure the right shape.

PESTS AND DISEASES

Aphids and adelgids both suck the host plant's sap and inject substances which affect the plant's growth and reproduction. Adelgids infest conifers only whereas aphids have a wide variety of host plants. Both can be treated with broad spectrum insecticides.

Phytophthora root rot is caused by fungi which can persist in the soil in a dormant state for several years. This disease affects a broad range of trees. Symptoms include wilting and yellow discoloration of needles as well as dying of branches.

Red band needle blight is caused by the fungus *Dothistroma septosporum* and can occur in all conifers but pines are mainly affected. It affects needles at all ages and leads to heavy defoliation.

Needle cast disease is caused by fungi and affects the previous year's needles. Symptoms are brown and/or yellow spots on the needles and needle loss. Fungicide treatment and the removal of heavily infected trees is advisable.



Rust is caused by the rust mite, an eriophyid mite with four legs (opposed to spider mites with eight legs). For identification, a hand lens (20x) is required. On fir trees, the mite can be found on the needle surface often on the southeast side of the tree. Sulphur is used for treatment.

Make sure that you use appropriate pesticides/fungicides. If you are not sure which chemicals to use ask your consultant.

Rabbits are a particular threat to young plants as they can dig up the roots and eat young buds. Fencing is necessary to protect the crop.

PLANTING LEGISLATION

An Environmental Impact Assessments from the Forestry Commission before planting is required when the plantation size exceeds the threshold limit. Current threshold limits are 5.0ha in non-sensitive areas and 2.0ha in sensitive areas (national parks, areas of outstanding natural beauty and national scenic areas).

FELLING LEGISLATION

The same felling regulations apply for a Christmas tree plantation as for any other tree plantation: Exemption from a felling licence is only given for trees that have the following diameters (measured 1.3 metres from the ground):

- 8 cm or less and
- 10 cm or less for thinnings

Due to the size of the Christmas trees at the point of sale, a felling license might not be needed in most cases.

MARKETING

Once a decision is made whether to sell the trees wholesale or retail, there are different ways to market the product:

- Cut
- In pots
- Cut (or dig) your own tree

The trees are sold by height. Table 3 summarises retail prices for various Christmas trees in 2007. Products such as wreaths and garlands, as well as stands for cut trees and Christmas tree decoration are a valuable addition for the business.

Table 3: Retail prices for cut trees (2007)

| Tree size | Frasier fir | Noble fir | Norway spruce | Nordman fir |
|-------------|-------------|-----------|---------------|-------------|
| 5ft (1.52m) | 33.0 | 36.7 | 19.0 | 34.5 |
| 6ft (1.83m) | 36.8 | 41.8 | 22.0 | 38.3 |
| 7ft (2.13m) | 44.3 | 47.8 | 25.0 | 43.3 |
| 8ft (2.44m) | 49.8 | 48.3 | 28.0 | 48.3 |

Source: CALU survey

PACKING

For convenient transport, Christmas trees are often sold netted. The netting funnels can be purchased in different sizes with varying prices (approx. from £150 for small funnels - £300 for bigger funnels; excluding costs for netting and knives).



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