

degree by using regular insecticidal sprays but a biological control is now the preferred method. Research carried out in the south west tested a tiny parasitic wasp (*Psyllaephagus pilosus*) which was found to work effectively in controlling the pest. The parasite is now on all plantations in Ireland but has to be managed annually in order to ensure that it continues to keep the psyllid populations at bay. This aspect of management should be discussed with your consultant prior to pruning each year.

Aphids sometimes give cause for concern and have to be monitored.

Silver Leaf Disease (*Chondrostereum purpureum*) attacks the plants through pruning wounds: symptoms show as silvery in the foliage and brown staining of infected stem tissue – infected branches and dead trees should be removed and burnt. Summer tipping reduces the subsequent area open to attack as fewer large pruning cuts are made. There is a biological method of controlling the disease – Binab T which is applied as a paint to larger pruning wounds following spring pruning.

Oedema which is thought to be a physiological disorder can be a serious problem on some species in some years.

Harvesting and Processing



Eucalyptus is normally harvested during the months October through to April.

All harvesting is done using a hand held secateurs. Stems should be carefully selected for quality of leaf and shoot balance. Well furnished sprays up to 60 cm long with stems pencil thickness are ideal. In most cases all grading is carried out in the field. Stems are bunched in 10's and then transported to the packing shed where they are stood in water overnight and kept cool prior to packing.

Stems of *Eucalyptus perreniana* ready for harvest.

The processing operation consists of tying the 10 stem bunches in bigger bundles of 150 stems and placing in a box containing 1 inch of water (aquapack). These aquapacks are then placed on a pallet prior to transport.

Post harvest treatment

It has been common practice for the past number of years to treat the stems harvested in the early part of the season (Sept/Oct) with a post harvest preservative in order to maintain quality and subsequent freshness of the foliage. The most common pre-treatment used is Chrysal RVB clear which is placed in the containers for 48 hours immediately following harvest and prior to boxing for transport. Selecting a suitable Eucalyptus stem.

Costs and Returns

With Eucalyptus, some stems are harvested in the second and third years (15000 & 50,000 stems/ha respectively) but full economic yield (up to 100,000 stems/ha) is not reached until the fourth year. The crop continues to yield for a further 12 years if managed correctly. From an initial investment of €3000 per ha gross return of €6000 per ha is achievable from the fourth year onwards. Net return depends on the grower's involvement as most of the cost is labour (maintenance & harvest).

Even when labour for harvest is included a net return of €1750 to €2000 per ha is achievable.

The large blue leaved Eucalyptus perreniana (L) with a mixed foliage arrangement (R) containing blue Eucalyptus pulverulenta

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Eucalyptus for cut foliage

Introduction

There is demand for the Australian Eucalypts with attractive green, blue-grey and grey foliage, during the autumn, winter and spring months. The stems are used as 'fillers' in mixed flower bouquets supplying an increasing export market to specialist bouquet companies in the UK and Holland who in turn supply the major supermarkets and other retail outlets such as petrol stations and smaller shops.



Eucalyptus originates from Australia and consists of 500 different species many of which grow in the South of Ireland. The first commercial plantings were made in Ireland in the early 90's and the current area stands at around 50 ha. The favourable climate and soils of southern Ireland coupled with their ability to withstand very hard pruning makes many of the Eucalypts ideal plants for cut foliage production. The growing of Eucalyptus for cut foliage foliage can provide a useful source of winter work and income.

This leaflet has been prepared from the recorded experiences of growers in the South of Ireland and information from Teagasc trials work.

Choosing suitable species for cutting

Many species suffer damage from extreme cold in winter, particularly sudden rapid drops in temperature following mild periods of weather or 'scorch' from persistent very cold, dry easterly winds.

Eucalyptus species have the peculiarity of having a juvenile phase during which the leaves produced are strikingly different from those of the adult plant. Juvenile leaves are shorter and broader than the adult ones, sessile or short-staked and usually opposite in arrangement.

Species

The main requirements of a species for cutting are:

1. Attractive foliage colour and form.
2. Rapid annual branching.
3. At least some resistance to low winter temperature.

The following species are popular on the market and are successfully grown in the south of Ireland.

Eucalyptus gunnii (The cider gum) – leaves rounded, surface powdery blue-grey. Hardy sources known. Coppices well. Popular and high yielding *Eucalyptus parvula* formally *parvifolia* (The small leaved gum) – small green rounded leaves. Hardy seed sources known. Coppices well. Tolerates some exposure. Heavy cropping.

Eucalyptus glaucescens (Tingiringi gum) – small rounded leaves blue/white with a 'fruity' aroma similar to *E. gunnii*. Sometimes difficult to germinate.

Eucalyptus perreniana (Round leaved snow gum) – rounded leaves, clasping the stem: foliage grey-green, stems white. Hardy sources known. Branches horizontally. Medium yield.

Eucalyptus pulverulenta (Silver-leaved mountain gum) – very glaucous juvenile leaves persisting often throughout the life of the tree. Recommended for milder districts. Medium yield.

Eucalyptus mourei - narrow willow like leaves green in colour. High yielding.

Eucalyptus rubida (Candle bark gum) - red stemmed species. Tones of red/pink colour also in the leaves particularly evident in the new growth in spring and early summer. Medium yield.



The small green leaved *E. parvula* – one of the most popular foliage species

Site & Soil selection

The selection of the correct site has a significant bearing on the level of production. The site must have a mild microclimate and be well sheltered from wind and salt sprays if near the coast. A south facing aspect is desirable but not essential. A site exposed to full sunlight is best. The site must be accessible to a tractor and trailer.

Experience has shown the best soils tend to be the free draining mineral loam types although Eucalyptus will tolerate most soil types. A pH of neutral to slightly acid is preferred ie 5.5-6.5. A good balance of P, K & Mg is recommended and soil analysis is necessary to determine if the levels of nutrients are satisfactory.



Propagation

Seed is normally sown in February and plants should be ready for planting by June/July. Seed are generally pricked out into 7 cm liners (either fen/peat pots or rigid containers). Prick out when the first pair of seedling leaves (above the cotyledons) has expanded and the second pair is showing. The lifting, separating and transplanting must be done carefully but quickly to avoid drying of the roots.

By June most will be 15 cm tall and ready for planting out in their permanent positions. Teagasc research has shown that by tip pruning the main leading shoot in April/May a sturdier transplant resulted which did not need subsequent staking in the field.



A plant size of 15 -25 cm is recommended for planting out in June/July

Soil Preparation

It is critical though that the field has first been cleared of perennial weeds by spraying off using Glyphosate (Roundup). Young trees are planted on the flat in most cases following the standard cultivations of ploughing and rotovating. Contact your adviser for specific recommendations on base dressing following soil analysis.

Plant density

Trees are generally planted in rows 2 m apart with plants 2m in the row giving an overall plant density of approximately 2200 trees per ha. In the south of Ireland a systems are adopted to facilitate tractor operations such as spraying and collection of harvested material.

Species such as *E. perriniana* benefit from slightly wider spacing ie 2.5m in row by 2m between row. In some locations where wind can be a problem, staking with canes of some species may be necessary. This is particularly the case with species such as *E. pulverulenta*. After planting, 2m high bamboo canes are inserted to support individual plants.



Eucalyptus plantation showing new growth following spring pruning.

Weed Control

It is very important to keep plantations free of weeds particularly in the first few years of establishment for the developing plant canopy smothers out all but perennial weeds.

While the use of mypex or a plastic mulch on the planted row in conjunction with a mowed grass or cultivated strip between row is sometimes recommended as a cultivation practice, the most common method of weed control is the use of carefully chosen residual and selective contact herbicides. The choice of herbicides to maintain clean plantations depends on weed spectrum, but products such as Stomp Aqua (pendimethalin), Ronstar liquid (oxadiazon) and Venzar (Lenacil) and Kerb 50 W (Propyzamide) have label recommendations for overall or directed application.

Spot treatment of perennial weeds with Roundup or hormone weedkillers is sometimes necessary on foliage plantations even when crops are well established.

Safety, legal and economic considerations dictate that herbicides must be used with great care both in following the manufacturers recommendations regarding suitability, timing, rate and accuracy of application. Contact your adviser for the most suitable method of weed control for your site and up to date herbicide recommendations.

Pruning



By cutting back/pruning Eucalyptus, they can be grown in almost any form and kept to any desired size. The characteristic of apical dominance is strongly developed. The normal form of an unpruned tree in the sapling stage is a single stem with a fast growing leading shoot and a narrow crown of branches. If the end of the leading shoot is damaged or pruned off, a side shoot will rapidly form the framework

needed for a shrub, bush or standard tree by the usual pruning techniques.

It is critical to prune the species when growing for foliage purposes for the following reason: Eucalyptus foliage form changes from 'juvenile' in the young seedlings where the leaves are often rounded to 'adult' where the leaves are often willow like. Plants kept juvenile usually have

more attractive leaf shapes and colors. It is the juvenile foliage which is demanded by the trade and for this reason plants have to be pruned annually.

Plantations grown for foliage are managed as a pollarded or coppiced crop. Such pruning is undertaken at the end of a harvest season, usually late February or March and certainly no later than mid April before the onset of significant new growth.

Open centre trees about 3 feet high on a short leg should be aimed at – this is referred to as pollarding.

Trees are pruned to this framework every year where all of the previous seasons growth is removed and you are left with a naked framework.

Dominant shoots are tipped during June/July to induce the formation of laterals for cut foliage.

Harder pruning to a short leg of 12 inches (coppicing or stooling) can also be carried out but comprehensive trials were carried out over a number of years in the South of Ireland on a number of species has shown clearly that pollarding results in higher yields over a longer period of time.

Nutrition

Little is known on the nutritional requirements of the species and very little experimental work has been carried out on the species when grown for foliage. It does appear that they do not require high levels of nutrients but benefit from topdressings applied in the spring.

Responses occur if Nitrogen is added. Apply up to 70 kg/ha nitrogen in the Spring.

Growers regularly apply general compound fertiliser such as 10-10-20 which have been found to be satisfactory. Chemical fertilisers containing sulphur have been found to be very responsive in some sites in southern Ireland.

Foliar analysis during the growing season is a good way of pointing to any deficiencies that may occur.

Pests & Diseases

The Blue Gum Psyllid (*Ctenarytaina eucalypti*) feeds on the young shoot tips during summer producing silky white filaments and distorting the leaves. They seriously attack the juvenile foliage of the glaucous species such as *E. glaucescens* and *E. pulverulenta* and the distortion can eventually become infested with *Botrytis* leading to eventual die-back. This can render foliage unmarketable. The insect can be controlled to a