

Prunus (Laurel) for cut foliage

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INTRODUCTION

A native of the Balkans and the Caspian region, *Prunus laurocerasus* the common or cherry laurel is commonly grown as a hedge in Ireland and if unclipped can reach a height of 15m. In its native habitat it prefers a shaded environment. In the past 10 years, cultivars of *Prunus laurocerasus* have been grown for cut foliage where the medium green coloured bright stems are used as 'fillers' in mixed flower bouquets providing texture & 'fill' to floral products. Irish laurel foliage is exported to specialist flower bouquet processing companies in the UK and Holland who in turn supply the major supermarkets and other retail outlets including an expanding mail order market. The current area stands at approximately 100 ha with plantations in counties Kerry, Cork and Wexford.

This factsheet has been prepared from the results of Teagasc trial work, the results of the DAFM 'New Leaves' project which focused specifically on pest & disease issues and recorded experiences of growers in the South of Ireland.



Cherry laurel plantation in south of Ireland

SITE & SOIL REQUIREMENTS

The selection of the correct site has a significant bearing on the level of production. The site must be well sheltered from prevailing winds and while a south-facing aspect is desirable, it is not essential. Open areas, particularly where there is a risk of exposure to

salt winds should be avoided. Experience in the past few years suggest that a site with partial shade will result in higher quality end product so efforts should be made to provide shelter and shading if not available naturally. The species is cold tolerant and will survive temperatures of -10C. However late spring frosts can damage new young growth but it quickly regrows and is rarely an issue. The site must be accessible.

Laurel will grow on most soil types as long as it is deep and well drained. While the species enjoys adequate soil moisture, it will not tolerate any prolonged periods of water logging or soil moisture deficit.

NUTRITION

Limited experimental work has been carried out on the nutrition requirements for laurel when grown for foliage. Aim for a pH of 6.0-6.5 and a good balance of phosphate, potash and magnesium. A soil analysis is recommended prior to cultivation and your adviser can provide specific guidelines. The table below gives a general base recommendation.

Nutrient	Rate/ha (kg)
Nitrogen (N)	150
Phosphorus (P)	100
Potassium (K)	200
Magnesium (Mg)	100
Ref: Teagasc	

A balanced compound should be used as a top dressing in the spring. The judicious use of nitrogen will result in good growth response. Apply up to 70 – 100 kg/ha nitrogen in the spring. Some growers apply a compound fertiliser such as 7-6-17+ Sulphur to maintain a balance of nutrients. Trace elements including Magnesium and Calcium are used to maintain good plant health.

VARIETIES/CULTIVARS

While the common laurel *Prunus laurocerasus* 'Rotundifolia' is suitable for cut foliage, the main cultivars grown for foliage include *Prunus laurocerasus* 'Etna' and 'Caucasica' A new cultivar, *P. l.* 'Novita' is currently being trialled. *P. l.* 'Etna' is characterised

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by short medium rounded, ovate, leathery shiny leaves that form on a dense bush. The arrangement of leaves at the top of stems in a whorl shape make it an excellent filler in a flower arrangements. *P. l* 'Caucasica' on the other hand has more erect stems and long, narrow, lanceolate leaves in an open bush habit. The more linear shape provides a different type of structural function in a floral product.



P. l. 'Etna' (L) and *P. l*. 'Caucasica' (R)

PLANTS

Plants are supplied by specialist propagators. They are generally raised from cuttings which are taken in the autumn and well rooted plants in 7cm liners are usually ready for planting out 6-8 months later.



Plants of *Prunus laurocerasus* 'Caucasica' ready for field planting

SOIL PREPARATION

It is critical that the site has first been cleared of perennial weeds by spraying off, using a mixture of *Glyphosate* (Roundup) and a desiccant such as *Carfentrozone-Ethyl* (Spotlight Plus). Young plants are planted on the flat or on a raised ridge following the standard cultivations of ploughing and rotovation.

PLANT DENSITY

Planting is carried out in rows 2m apart, with plants also 2m apart in the row. This gives an overall plant density of approximately 2200 plants per ha (900 plants/ac). A 3m wide tramline should be left every 10-12 meters, depending on tractor and sprayer widths, to facilitate tractor operations and ease of harvesting. Higher density systems can be adopted but a more intense level of plantation management is then required.



Field scale planting of *P. l*. 'Etna'

WEED CONTROL

It is very important to keep plantations free of weeds, particularly in the first few years of establishment, after which the developing crop canopy generally smothers out most non-perennial weeds. While the use of mypex or a plastic membrane on the planted row in conjunction with a mowed grass or cultivated strip between rows provides a sustainable weed control system, the most common method is the use

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of carefully chosen residual and selective contact herbicides. The choice of herbicides to maintain clean plantations depends on the weed spectrum and products such as *Pendimethalin* (Stomp Aqua), *Dimethenamid-P* and *Pendimethalin* (Wing P) and *Lenacil* (Venzar) can be used for overall or directed application.

Safety, legal and economic considerations dictate that herbicides must be used with great care, following the manufacturer's recommendations of timing, dosage and accuracy of application. You should contact your adviser for the most suitable method of weed control for your site and up-to-date herbicide recommendations.

PRUNING

The normal pattern of growth of cherry laurel is that it usually flushes twice in the year with an early spurt of growth from late April to June and again from August through to the end of September. In the management of the species for cut foliage production, Teagasc trials have shown that little if any pruning takes place in the first 2-3 years as it is important that the plants build up a bushy, woody framework with multiple shoots from which cut stems can be taken annually thereafter.

Once fully established by the fourth year, cherry laurel cultivars will respond to hard harvesting and following the removal of marketable stems during the dormant period, by then leaving a woody framework 1.2-1.5m in height and spread, an annual production cycle is developed.

If the bushes grow out of shape or too high for hand harvesting, then a hard pruning to 1.2 m in spring will allow the crop to get back into the production cycle; however the first flush of stems after severe pruning are likely to be soft and susceptible to pest and disease attack as they take some time to build up metabolites that help boost the plants defence system. In this instance, a thorough program of plant protection may be necessary to ensure quality marketable stems.



Prunus laurocerasus 'Caucasica' Pruned (L) and unpruned (R)

PESTS AND DISEASES

There are a number of pests and diseases that can cause damage to the cut foliage rendering the stems unmarketable if not controlled. There is zero tolerance of holes or blemishes in the leaves of cut stems. A focused project entitled 'New Leaves' investigated a number of the key pest & disease issues that affect cherry laurel, details of which can be found at www.teagasc.ie/horticulture/cut-foliage/

TORTRIX MOTH (*EPIPHYAS POSTVITTANA*)

Larva or caterpillars of the Light Brown Apple Moth (*Epiphyas postvittana*) feed on the new growth of laurel foliage. Larva hatch from eggs laid by adults and consume the younger leaves, usually starting on the shoot tips. The larva move between shoots and bind leaves together with silk threads. Feeding

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can result in small to large holes and subsequent growth leads to deformed leaves which can render stems unmarketable. Insecticidal treatments are justified where there are serious infestations and the pesticide choice should be carefully considered under an integrated pest management (IPM) approach to control. Consideration should be given to the contribution of beneficial insects within a plantation as they can play a valuable role in the fight against tortrix. Adult moths and the resulting damaging larva are usually active from late May-July and again from late August-October when both the adult and caterpillar are prey for many different predators. The larva are attacked by generalist predators that include bugs and fly larva and by the larvae of parasitic wasps. Typically, generalist predators are present in abundance in late June till the end of the growth season and the parasitoids are present when the larva are active on the foliage. Therefore in order to maintain a population of beneficial insects in high risk plantations, only insecticides compatible with an IPM system should be considered.



Typical Tortrix moth damage on Laurel

THRIPS (*THRIPS FLAVUS*)

Thrips (*Thrips flavus*) which is the yellow flower thrips can be a pest of laurel. The young larval stages tend to feed in the enclosed shoot tips and the resultant damage takes the form of a speckling where the epidermis is heavily scratched at either side of the mid rib of leaves as the young shoots unfold. In severe cases, some holes may result but it is thought to be rare. It is suggested that the damage may be an entry point for bacterial pathogens such as *Pseudomonas syringae*. The IPM approach to control as outlined for tortrix moth should be considered in controlling thrips.



Thrips damage on cherry laurel.

COMMON GREEN CAPSID (*LYGOCORIS PABULINUS*)

Common Green Capsid (*Lygocoris pabulinus*) is an early emerging pest from hedgerows in Spring and can occasionally be damaging to cherry laurel causing ragged holes on the young leaves.

LEAF MINER (*LYONETIA CLERKELLA*)

The apple leaf miner is a common pest of trees and shrubs and damage is found most years on cherry laurel, particularly in the late summer- early autumn period when adults occur. Eggs are usually laid on the undersides of leaves and then the larva commences to mine towards the upper surface and eventually forms a long pale coloured gallery. The pest is controlled in the same manner as other pests discussed above.

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The characteristic damage caused by the apple leaf miner

CITRUS RED MITE (*PANONYCHUS CITRI*)

Citrus Red Mite (*Panonychus citri*) is found mainly on citrus but the pest also occurs on many other hosts including cherry laurel on occasions. It is recognised by red eggs rather than colourless ones as in the two-spotted spider mite. The mites cause noticeable silvering, yellowing or speckling by feeding on the undersides of leaves. They can cause defoliation in severe infestations. Contact your adviser for further information if citrus mite is suspected.



The pale leaves of leaves of laurel foliage caused by damage from Citrus Red Mite on LHS compared to the normal coloured foliage on RHS.

SLUGS

Slugs – have been found to be problematic particularly in wet seasons with damage seen from early spring through to the Autumn. Monitoring is recommended but experience suggests that treatment is rarely justified.

DISEASES

SHOT HOLE (*PSEUDOMONAS SPP*)

One of the most noticeable diseases to affect cherry laurel is shot hole, which is predominantly caused by the bacterial pathogen *Pseudomonas syringae pv syringae* (Pss). Typically, it is noticeable by the round reddish spots with a darker centre which drop out to give a characteristic appearance of being torn apart with shotgun pellets. However, *Pseudomonas syringae* can also result in a leaf-edge necrosis induced by wind damage, making the recognition of symptoms more challenging. Recent research has shown that abiotic factors such as wounding (e.g. pruning, wind/insect damage), exposed sites and mild temperatures were all found to promote shot hole disease with the cultivar 'Etna' being more susceptible than 'Caucasica'.

Production of laurel in semi shaded sites or inter-planting with taller species should be considered to help reduce the occurrence of the disease. Maintaining good hygiene in terms of removal and disposal of infected plant material where practical is also worth considering. Regular application of a copper based product, such as copper oxychloride, available as Curenox 50 WP has off label approval for use on the crop and should help reduce infections.

Recently, there is anecdotal evidence that regular applications of a bio-fungicide for eg. Senerade ASO also helps in reducing infection and maybe worth considering in a plant protection programme where there is likely pressure from *Pseudomonas syringae*.

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Symptoms of damage caused by *Pseudomonas syringae*.
Top – typical 'shot hole' Bottom – notching on leaf margin

LEAF SPOTS

Two other fungal leaf spots have been found to affect Laurel namely *Eupropolella britannica* and *Stigmina* (*Stigmina carpophila*) also known as Coryneum blight. Both diseases can be confused with shot hole as symptoms are similar, so diagnosis of the problem by a plant pathologist is recommended. Copper applied for bacterial shot hole will provide some control.

DOWNY MILDEW (*PERONOSPORA SPARSA*)

Downy Mildew (*Peronospora sparsa*) is one of the most serious fungal diseases of laurel. Symptoms usually consist of large yellow/brown irregular shaped blotches on the upper leaf surface are seen with a matching grey/yellow or white sporulation on the leaf underside. The disease can infect quickly in periods of wet humid 'blighty' weather conditions.

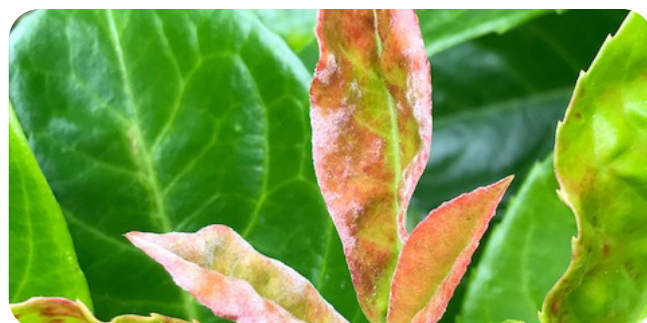
Potato blight warnings are a good indicator of when infection periods are likely. A preventative program is recommended in a high pressure season and one should consult an adviser on choice of fungicide.



Downy mildew damage on cherry laurel

POWDERY MILDEW (*PODOSPHAERA SPP*)

Powdery Mildew (*Podosphaera spp*) has been found to infect crops of laurel, particularly in the south east of the country in drier summers in recent years. It can sometimes be confused with Downy Mildew given that the fluffy white fungal mycelium can be seen on both upper and underside of leaf surfaces. It results in a distinctive red blotching that eventually turns a pale yellow, rendering stems unmarketable. It is important to diagnose the disease before considering the use of fungicide for control, as there is a specific fungicidal chemistry for this disease. It is best to consult an adviser or plant pathologist if you suspect you have Powdery Mildew.



Typical Powdery Mildew lesions on current season growth

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HARVESTING AND PROCESSING

Laurel is normally harvested from October through to April. However, there is a period in mid-summer from late June the end of July when the crop shuts down when stems are suitable to cut. All harvesting is done using a hand held secateurs. Generally well-furnished stems, 45 to 60cm in length are carefully selected for quality of leaf and shoot balance. The first stems are fit to cut in the third growing season with full cropping potential being reached from the fourth year onwards. 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 left standing in water overnight and kept cool prior to packing.

The processing operation consists of tying the 10 stem bunches in bigger bundles of 150 stems and placing in a bucket containing 1 inch of water. These buckets



are then placed on a Danish trolley on which they are transported in refrigerated container to market. Bunched Laurel on Danish trolley ready for transport to market.

POST HARVEST TREATMENT

It has been common practice for the past number of years to treat the stems harvested during the summer period and those cut 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 added to this post harvest immersion of 48 hours duration, prior to placing stems in buckets before shipping.

COSTS & RETURNS

With laurel, some stems are harvested in the third year (20,000 - 30,000 stems/ha) with full economic yield (up to 80,000 – 100,000 stems/ha) not reached until the fourth year. The crop continues to yield for a further 12-15 years if managed correctly.

Returns depend on the market outlet. Whilst a small but rewarding local market exists amongst wholesalers and florists, over 90% of Irish foliage is exported. From an initial investment of €3000 per ha, an average gross margin of €7000 - €8000 per ha is achievable and after labour and growing costs are accounted there is a net margin of €1750- €2000/ha from the fourth year onwards.