

Bog Myrtle (*Myrica gale*) for Cut Foliage

Factsheet 12/20

INTRODUCTION & BACKGROUND

Myrica gale L. (Bog Myrtle or Sweet Gale) is a common nitrogen fixing deciduous shrub that grows wild in the wet acid soils of north-west Europe, Canada, north America and Asia. It thrives on nutritionally poor well aerated acid peatland in particular but will grow on a wide range of soil types. It spreads by rhizomes to produce thickets which may reach a height of 2.5 m. It's aromatic, bluish, lance-shaped leaves are dotted above and below with yellow wax glands. Greenish-yellow catkins appear before the leaves and male and female appear on separate plants.

Its essential oil has been used for flavouring beer, porridge and vinegar for over a thousand years. It is also used in perfumes and soaps and as a dye plant for cloths. The sweet-scented foliage of *Myrica gale* is often used as an insect repellent. The plant is still harvested from the wild for these traditional uses.



Myrica gale grows in wild boggy areas.

POPULAR IN THE CUT FLOWER TRADE

Myrica gale flowers from March to May on the wood of the previous year's growth, before the leaves are produced. The twiggy branches with the short red catkins in the leaf axils that appear once the leaves fall off in the early winter period are harvested and used as fillers in the cut flower market. They enhance spring bouquets of tulips and daffodils and are also painted or snowed where they are used in floral products for other key market periods. This use is expanding as market demand increases and while currently harvested from

inhospitable conditions in the wild, Teagasc in the past 5 years has conducted agronomy trials on the cultivation of *Myrica gale* on mineral soils in lowland areas. This factsheet summarises that work to date.



Myrica gale used as a 'filler' in a tulip flower bouquet.

SITE & SOIL

The Teagasc trial was carried out on a site with south-facing aspect and while desirable it is not essential. Well aerated acidic peatland is the natural soil habitat for *Myrica gale* but acidic mineral moisture retentive soils are also suitable with pH 4.5-5.5. Areas between forestry plantings or marginal boundaries could be suitable for *Myrica gale*.

SYSTEM

The crop can be planted on the flat in single rows or alternatively on slightly raised beds with 3 rows per bed.

PLANTS

There are a number of ways to propagate *Myrica gale*. While the species can be propagated from seed, layering or root cuttings in the dormant season, the most commonly used method is by vegetative propagation. Half-ripe cuttings 5 - 8cm taken in July/August can be subsequently potted up and overwintered in a tunnel or cold frame for planting the following summer.

Alternatively, cuttings of mature wood in November/December propagated in a sun tunnel has worked effectively in Teagasc trials with plants ready for planting out late summer the following year.

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Routed plants of *Myrica gale* ready for field planting.



Intensive cultivation of *Myrica gale* using a weed control barrier.

NUTRITION

It appears that *Myrica gale* is not a demanding plant nutritionally. In the wild, *Myrica gale* thrives in nitrogen poor soil due to antinobacteria found in the roots that can bind nitrogen from the air. It can also take up Phosphorus from wet, poor soil where N & P maybe deficient by cluster roots which consist of dense clusters of determinate rootlets. It thrives and achieves dominance on less fertile soils primarily because of a symbiotic association with an endophytic nitrogen-fixing fungus of the genus *Frankia*. Dense stands of *M. gale* are capable of fixing substantial amounts of Nitrogen. There was no fertiliser applied to the Teagasc trial plot and no deficiencies were detected over 5 years of the experiment.

SPACING

Planting system should fit with machinery on holding. A spacing of 80cm * 80cm giving a density of 1.5/m² or 15,000/ha (6000/ac) on the flat or on slightly raised beds was used in the Teagasc trials. It is important to leave a tramline every 10 m to facilitate management and harvesting operations.

WEEDS

It is important to keep plantations free of weeds. It is critical that the site has first been cleared of perennial weeds by spraying off, using a mixture of *Glyphosate* (Roundup) and *Carfentozone-Ethyl* (Spotlight Plus). The use of a membrane (plastic or mypex type material eg Daltax) on the planted row in conjunction with a mowed grass or cultivated strip between rows can be used as a weed control measure. However, given that the species reproduces by underground rhizomes, it is necessary to tear back the mulch as the plants expand. For that reason, a bare ground system of cultivation maybe a better choice provided that plantations are maintained free of weeds. The use of carefully chosen residual and selective contact herbicides can be used. The choice of herbicides to maintain clean plantations depends on the weed spectrum, but a mixture of products such as *Isoxaben* (Flexidor) and *Propyzamide* (Kerb 50 W) which have full label recommendations for overall or directed application give broad spectrum control of a wide range of weeds including grasses. There are off label approvals for a number of residual and selective herbicides and you should contact Teagasc for up to date recommendations.

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PRUNING CROP MANAGEMENT

The Teagasc trial work focused on developing a pruning management system to generate the optimum number and quality of saleable stems on a regular basis.

It found that *Myrica gale* responds favourably to cutting back which will promote the development of side shoots which will eventually branch to become saleable stems. New shoots grow from buds on the previous year's woody stems and later in the season from new aerial shoots arising from rhizomes. Rhizome shoots have larger leaves and continue growth for longer than those from buds. It is recommended to cut the bushes back to a 30cm framework following establishment after 3 years.

The plant will grow on a two year cycle where pruning is adopted i.e. a single stem grows in the first year which will branch into a marketable spray or 'brush' which is a twig with lateral buds in the second year. This system can be repeated biannually.



Myrica gale bush pruned hard every other year to a 30 cm framework showing the generation of single stems after one year which grow into desirable spray stems in the following season.

Teagasc trials also showed that the species can be allowed to produce annually without any major pruning management in the first 4 to 5 years and that a satisfactory yield of marketable stems results. However in this case a hard pruning to bring the crop into a manageable shape will be necessary in the 5th year. The crop will take 2 years again to come back into production. Irrespective of the system adopted, it is estimated that a yield of 15 stems/m² is achievable from the 4th year onwards.



The well furnished twiggy spray stem from the wild on left compared to spray stem from cultivated crop on right used as fillers in the cut flower market.

PESTS & DISEASES

Pests are usually not a problem as the plants have an insect repelling oil.

The crop can be susceptible to a leaf spot *Phacellium rufibasis* which can become quite severe in some seasons causing defoliation. Severe disease infection can impact on the end quality of spray stems and treatment may be justified. *Boscalid* & *Pyraclostrobin* (Signum) offers good protection with *Myclobutanil* (Systhane 20 EW) good in the event of a disease outbreak.

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HARVEST

The crop is usually harvested once the leaves have fallen off the stems following a couple of hard frosts in late Autumn. In the south of Ireland this occurs in November and well furnished spray stems are cut and bunched by hand from November to March. At this stage the small buds start to swell and open and the growth cycle starts again. *Myrica gale* can however be harvested and stored dry and marketed all year round. Adding value by painting or glittering the stems has been important in developing this versatile species in the cut flower market.



Harvesting of *Myrica gale*



Myrica gale packed and ready for export

COSTS & RETURNS

Myrica gale can be harvested biannually from the 3rd year onwards.

An average of 15 stems per m² resulted from managed pruned crops giving 150,000 stems/ha (75,000 stems/acre).

Returns depend on market outlet. Over 90% of *Myrica gale* is exported to flower bouquet processors. From an initial investment of €7000 per ha, a net margin of €3000/ha is achievable biannually where the stems are exported for processing.



Myrica gale wreath (top) and gold painted for added value use in flower bouquets (bottom)