Agronomy blueprints for cut foliage production

Ornamental *Brassica*.

Andy Whelton, Ornamentals Specialist in the Horticulture Development Department, outlines agronomy research trials taking place at Kildalton College in Kilkenny, and on growers' holdings, to underpin production blueprints for the cut foliage sector.

Effective technical and research support is proving vital to the development and success of the relatively new cut foliage enterprise in Ireland. Given the exacting market requirements for the continuity of supply of top-quality cut foliage, Teagasc is developing agronomy blueprints for the production of ornamental and minor forest species as part of ongoing research and applied extension work on growers' holdings in Wexford and Kerry and at Kildalton College. The delivery of uniform stems of suitable length and spray form can only be achieved when optimum plant density is coupled with best management practices of pruning, nutrition, pest and disease control. Current cut foliage research, thus, aims to identify these exacting requirements for a range of species.

Plant density and weed control

While extensive, low density planting systems of 2,500 trees/ha have proved to be satisfactory in meeting the specifications for key tree species like *Eucalyptus* and *Pittosporum*, recent work on the more shrubby species such as *Brachyglottis* and *Viburnum* suggests that they should be planted more intensively on beds at high density (16,000 plants/ha) to deliver the necessary stem length and quality sprays.

Controlling weeds in such high density plantations is particularly challenging and the move away from reliance on chemicals is becoming an important aspect of production. Given Ireland's year-round weed growth, the solution to this problem is unlikely to be achieved easily, but Teagasc-funded work is evaluating the use of mulches as a sustainable means of weed control for the future.

Pruning

Most plant species flower at a particular stage in the season but vegetative growth is more desirable in cut foliage production. Research is aimed at preventing the flowering phase and inducing vegetative growth. Techniques such as altering pruning time and nutrition levels for different plant species is helping to deliver product in high volumes at the key demand periods like Christmas and Valentine's Day. A recently completed MSc by Catherine Gavin in Kildalton College has provided essential information on optimum pruning treatments for *Ozothamnus* – a core foliage species for the Christmas market. Pruning young plants to 50cm frameworks in early spring prevents flowering and results in high yields of suitable stem length and quality.

Pests and diseases

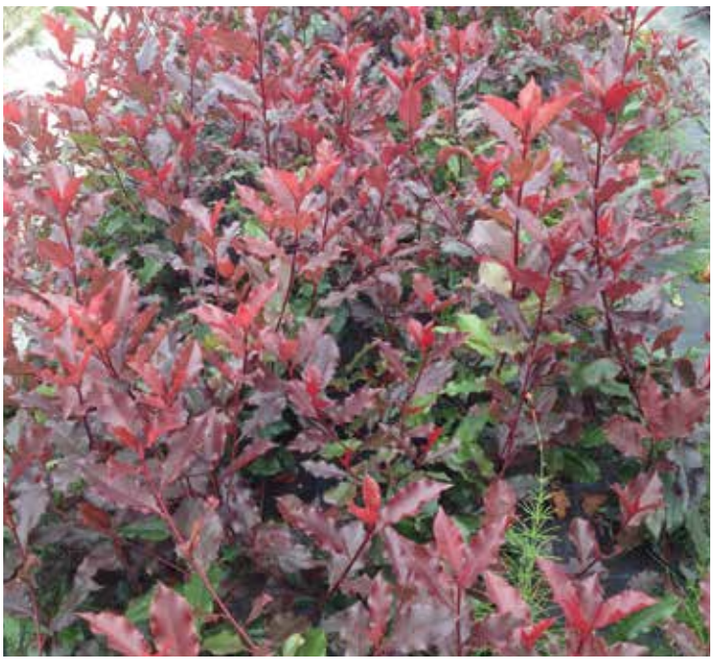
When ornamentals are planted in large stands they become much more susceptible to pests and diseases. Sustainable control measures fostering environmentally friendly methods are now advocated under the Sustainable Use of Pesticides Directive, thus, integrated crop management is a major cornerstone of the current research programme in Teagasc.

A few years ago, the blue gum psyllid – a green-fly-like pest of *Eucalyptus* and other foliages – caused

Andy Whelton,
Ornamentals Specialist
Horticulture Development Department,
Teagasc, Clonakilty College,
Co Cork

Correspondence:
andy.whelton@teagasc.ie

Planting Ornamental *Brassica* trials.



The striking red leaves of *Photinia* are in big demand in the floriculture market.

serious damage to the foliage sector. With good research support, this problem was rapidly cleared up by the release of a tiny parasitic wasp, *Psyllaephagus pilosus*, a biological control method, which is still in use today. Dorothy Hayden of Teagasc Botanic Gardens is completing a PhD researching the biological control of a *Eucalyptus* leaf beetle that threatens the viability of *Eucalyptus* cut foliage as it renders the foliage unsalable. The technique involves the use of another parasitic wasp, *Enoggera nassaui* (see *TResearch* 2014, Summer, p9).

The success of biological control techniques allows for the elimination or reduction of chemical pest control measures in crops. Pest monitoring and the development of trapping technologies are important aspect of the work being carried out in Kildalton and on growers' holdings in the southwest and is an area that is going to require greater attention in future work programmes. Real-time pest information is needed by growers so they can be more targeted and sustainable in their use of pesticides, using chemicals only when needed.

Evaluating sustainable weed control methods.

Protected crops and continuity of supply

Kildalton College lecturer, Grainne McMahon and Andy Whelton, Teagasc Ornamentals Specialist have been undertaking trials on developing production protocols for the continuity of supply of 'foliage fillers', which aim to supply foliage to meet supermarket demand for product in the off-season to compliment the main production period. This provides Irish producers with a clear market advantage. Using protective structures for early and late season cropping, coupled with a range of varieties and pruning regimes, production blueprints have been developed for the bouquet fillers *Solidago* and Ornamental *Brassica* – two species currently being scaled up by growers in the industry. Flower crops such as Peony roses and scented stock are currently the focus of agronomy work that aims to provide the Irish industry with a suite of production blueprints for products demanded by a discerning developing market, and which is currently under-supplied both at home and in other EU countries, therefore offering potential for growth.

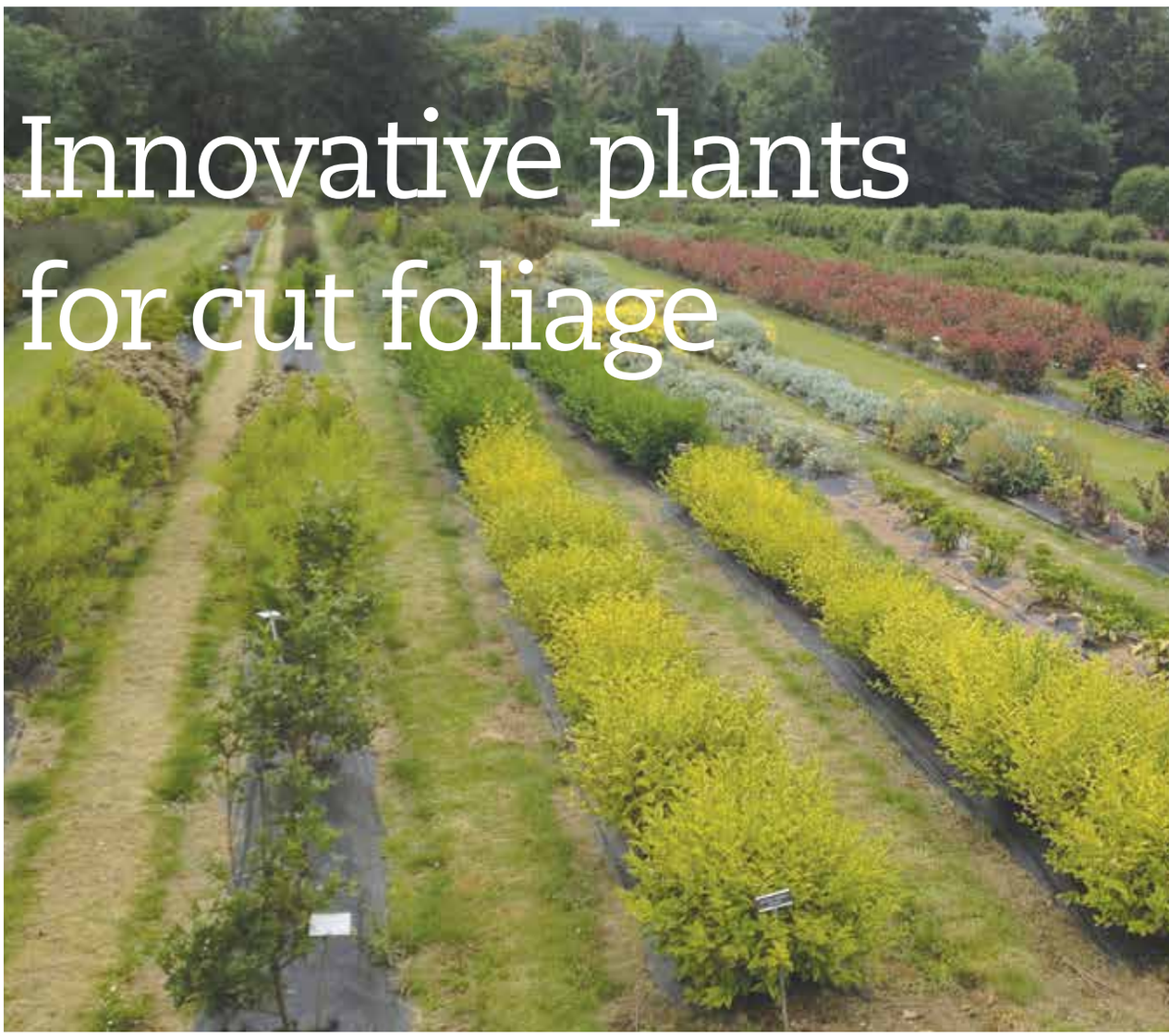
Collaboration with Kildalton College

An added benefit of the collaborative work between Teagasc Kildalton and the cut-foliage sector is that it provides an opportunity for students to experience this exciting new market-led sector of commercial horticulture in Ireland, which is beginning to offer opportunities in several different areas for graduates.

Acknowledgment

This work is funded by Teagasc, Bord Bia and Forest Produce.

Innovative plants for cut foliage



Andy Whelton, Teagasc Horticulture Development Department Specialist in Ornamentals, takes a look at the screening work carried out on new species of ornamental plants, which are being used in the expansion of the fledgling new cut foliage industry.

Andy Whelton,
Ornamentals Specialist,
Horticulture Development Department,
Teagasc, Clonakilty College,
Co Cork

Correspondence:
andy.whelton@teagasc.ie

Cut foliage is a new term to many people. It describes the decorative branches cut from a wide variety of trees, shrubs and perennials for use in bouquets and other flower arrangements. Worldwide demand in developed countries is increasing and the prospects for continued expansion of the small Irish industry for export markets are very good. Twenty-five growers currently export cut foliage worth over €4 million, providing much needed employment in harvesting and processing in rural parts of Kerry, Wexford and Waterford.

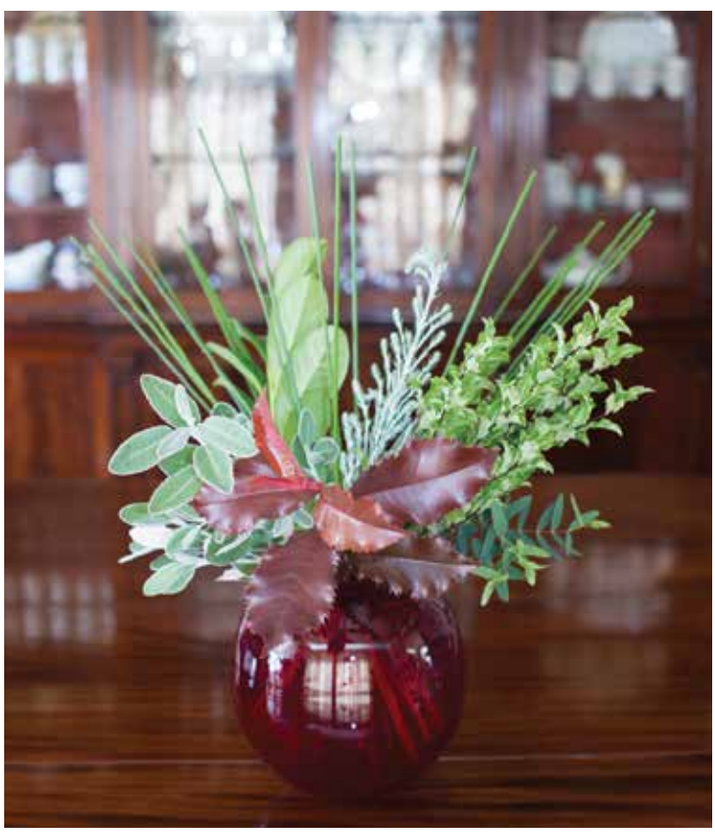
Innovative new lines

The mild, relative frost-free climate in southern Ireland is ideal for growing lush, premium foliage, however, buyers and customers are constantly looking for innovative new products displaying different textures, colours and scents for a discerning and competitive market. At Kildalton College in Kilkenny, the Teagasc Horticulture Development Department screens and evaluates a wide range of ornamental plants to identify potentially interesting 'new' foliage lines, with support from Bord Bia and foliage processors Forest Produce Ltd. The aim is to identify foliages that give value to a bouquet in terms of 'fill' and 'uniformity' and they are evaluated from a physical and market perspective. While 'green' is the predominant colour of commercial cut foliage, coloured and scented species that reflect seasonality, especially autumn, are sought after by the market. Species showing potential include *Hypericum* and Rosa, which provide a range of coloured berries and rose hips for the late summer/

autumn period. Other species generating market interest are new cultivars of well-known garden plants such as *Weigela* and *Pittosporum*, bred for their purple/black stemmed foliage. These species are currently undergoing post-harvest tests in conjunction with processors – a necessary research step before a species can be released to the industry. The first commercial plantings of a long stemmed scented Rosemary species will take place in 2016 for use in an innovative scented bouquet range, a trend that is increasing.

Ongoing research

Breeding research in Teagasc by Gerry Douglas has led to a variety of *Hebe* with desirable features for the foliage industry, which will enter agronomy trials next year. The scope of trialling and evaluation is enormous as it includes not only attractive exotic species but also forest species (e.g. Larch, Hemlock, moss) and native plants (e.g. Bog Myrtle – *Myrica gale*). A new clone of *Myrica gale* is showing promise after one season in trial and has potential for production on organic soils in marginal areas, provided its passes the rigorous agronomy and market evaluations being carried out by Teagasc.



Cut foliage display.

Expansion and growth

With increasing demand for large volumes of top quality and innovative cut foliage for export markets, especially at peak periods like Christmas and Valentine's Day, continued research and development is essential to ensure the sector can expand and grow to meet that demand.

Funding

This work is funded by Teagasc, Bord Bia and Forest Produce Ltd.