



Agriculture & Horticulture
DEVELOPMENT BOARD



Grower Summary

PO 006

Hellebores for production under
protection

Final 2013

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HDC is a division of the Agriculture and Horticulture Development Board.

Project Number:	PO 006
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Project Leader:	H M Kitchener
Contractor:	HK Consulting
Industry Representative:	Ian Paton, Pinetops Nursery
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Headline

- Commercial pot plant crops of hellebores were produced in both one and three litre pots which came into flower mid-November with the later varieties coming into flower during December and January.
- Quality scores were variable between the various varieties examined in the project and reflected differences in flowering time and plant habit.
- None of the seed raised varieties in this trial were slower to produce a saleable plant.

Background

Traditionally hellebores are propagated via a seed, however in the last ten years a number of German companies have developed micropropagated *Helleborus niger* which holds particular promise as a flowering subject for production by pot and bedding plant growers.

The advantages of these newer micropropagated varieties include greater flower number and a more upright flower habit which gives a greater visual impact than the conventional 'garden types' with their more drooping flower habit. The expected marketing window for hellebores appears to offer potential to extend the range of product on offer by pot and bedding growers for November and particularly after Christmas through to the end of February using a product with low energy requirements.

Gaps currently exist in our knowledge as to how these new varieties perform in low temperature, protected cultivation in the UK. General information on performance during production is required and in particular the potential of these new varieties to be produced to a schedule. In addition the price differential between the highest specification varieties at around £1.80 per young plant and the other products on offer at around £1.20 per young plant needs to be investigated.

The work proposed here is therefore aimed at providing a preliminary investigation/demonstration of a number of micropropagated varieties in commercial UK production systems (on two sites). The work will also compare lower and higher cost young plants within the same season. The primary output to levy payers will be via open days (BPOA/HDC poinsettia group meetings) where examples of all species will be displayed. These events will cover two stages of the anticipated marketing period i.e. in November for the more advanced types and the again during the main marketing window (late January). Two conventional common seed raised varieties will be included in trials as a bench mark.

While shelf life is a critical component for the suitability of ornamental pot plants, it will not be included in this project. Since the scheduling of the varieties in UK production is currently unknown it is not possible to predict accurately when different varieties can be expected to be ready for marketing. This has potential to lead to a protracted and therefore costly shelf life evaluation period which would be hard to justify until the product can be demonstrated to have sufficient potential.

Summary

The young plants were planted week 20 into one or three litre pots, except in the case of plant material from Beekenkamp which was planted in week 14. Micropropagated plant material was received from Beekenkamp (Netherlands), Heuger (Germany) and Pothos (Netherlands via GASA) and seed raised material from Syngenta (Netherlands). The plants were grown outside until December for the one litre material and throughout the whole year for the three litre material.

The following parameters were recorded for the plant material at flowering: height and width, foliage type and colour, flower colour and size, flower position above the leaf canopy, number of flowers open (generally three on the 1 litre material and five or more with the 3 litre material). An average quality score (0 to 10) was then attributed to each variety.

The assessment results for the one litre plant material are summarised in Table 1 and the three litre plant material in Table 2.

Table 1. Hellebore varietal assessment (11 Jan 2102) – 1 litre plant material

Supplier and variety	Propagation method (MP or S)	Plant dimension (ht x w) cm	Comments	Quality score
Beekenkamp 'Emma'	MP	16x37	Flowers light lemon yellow green/pink reverse up to 8 cm across 1 to 4 flowers on single pedicels from a main stem which may lean to one side. 95% flowering 11 January. Leaves lanceolate serrated, grey/green with purple/red/green leaf petioles.	8
'Winterbells'	MP	27X36	Flower white/green bells on a single stem dull pink/green reverse, flowers in multiples on singles stems. Flower size 3 cm. Foliage dull green on red petioles, lanceolate, some leaf spotting. 95% flowering 11 January.	2
Heuger 'Cinnamon Snow'	MP	16X27	Flower buff/pink/white, pink/green reverse flowers held on single stems. Flower size 7 cm. Leaves dark green oval/lanceolate	8

Supplier and variety	Propagation method (MP or S)	Plant dimension (ht x w) cm	Comments	Quality score
'Jacob Royal'	MP	21X32	reddish petiole. 90% flowering 11 January. Flowers white with green centres lemon pollen, flower size 8 cm, leaves dark green 85% plus flowering 11 January, some variability.	7
'Joel'	MP	19x34	Flowers white petals with yellow pollen, flower size 6 cm on single stems. Leaves mid green lanceolate on reddish petioles, variable.	8
'Josef Lamper'	MP	21X27	Flowers white with yellow pollen on single or double flowers on very strong pedicels, flowers 5 cm. Foliage dark green shiny, lanceolate/oval. Some variation in size.	8
'Winter Gold'	MP	20X24	Flowers white with yellow pollen early flowering, 9 cm in diameter, held as single or in 1 or 2's on reddish pedicel. 95% flowering on 11 January. Leaves lanceolate dark green, upright.	8/9
Pothos				
A9418-D7	MP	16x24	Flowers white/cream flowers, some green types, gold pollen, foliage dull/green sparse.	4
B9418-D7	MP	12x19	Flowers white/cream flowers, some green types, gold pollen, foliage dull/green sparse.	4
Syngenta				
'Christmas Carol'	S	12x20	Flowers white held on single pedicels, 19% flowering on 11 January. Leaves bright green on medium green leaves.	4
'Red Hybrids'	S	17x30	Flowers pink/mauve held on and single stem, bell shaped hanging down, 6 cm diameter.	4

In terms of the three litre plant material the plants were similar in form but were larger and with many more flower stems per plant than the 1 litre product as summarised below.

Table 2. Hellebore varietal assessment (19 Jan 2102) – 3 litre plant material

Supplier and variety	Propagation method (MP or S)	Plant dimension (ht x w) cm	Comments	Quality score
Beekenkamp				
'Emma'	MP	19x32		8
'Winterbells'	MP		Not in flower	
Heuger				
'Cinnamon Snow'	MP	26x33		8
'Jacob Royal'	MP	23x34		7
'Joel'	MP	26x39		7
'Josef Lamper'	MP	18x35		7
'Winter Gold'	MP	21x37		7
Pothos				
A9418-D7	MP		Very poor	
B9418-D7	MP		Very poor	
Syngenta				

Supplier and variety	Propagation method (MP or S)	Plant dimension (ht x w) cm	Comments	Quality score
'Christmas Carol'	S	13x20		2
'New Hybrids'	S	18x32		2
'Red Hybrids'	S	22x30		3

This was the first trial of some of the new micropropagated and seed varieties within the UK. Plants in the one litre pots were delayed in growth as a result of the warm temperatures in June/July. A further delay was also noted in the early varieties (for example Winter Gold), described as a November flowering variety, this may be due to the warm weather experienced in October and November.

The trial identified the impact of the prevailing weather conditions on the production of hellebores as a flowering pot plant, it appears temperatures and day length influence flower initiation or/and flower development. Other factors which may impact on marketing date include planting date and nutrition at the different stages of plant growth.

Financial benefits

Many UK pot and bedding plant growers no longer produce poinsettia crops so viable, low energy alternative crops are required for the winter marketing period. Hellebores may prove to be one such crop, especially as the micropropagated varieties may be more suited to production as pot plants and may respond to scheduling. This observational trial is the first step towards examining their potential. However, such product will require a premium retail price due to the cost of the young plant material and the length of production time.

Action points

Interested growers are encouraged to trial a number of the newer varieties to target the winter marketing period and to examine the potential of the product as a flowering pot plant with their retail clients.