Grower Summary

PO 019a

The Bedding and Pot Plant Centre – new product opportunities for bedding and pot plant growers

Objective 5: To evaluate the shelf life performance of micro-propagated Hellebores produced as pot plants for pre-Christmas marketing

Annual 2018

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Project title:	The Bedding and Pot Plant Centre – new product opportunities for bedding and pot plant growers ***Objective 5:*** *To evaluate the shelf life performance of micro-propagated Hellebores produced as pot plants for pre-Christmas marketing.*
Project number:	PO 019a
Project leader:	Dr Jill England, ADAS Boxworth
Report:	Annual report, 31 March 2018
Previous report:	None
Key staff:	Dr Jill England (ADAS), Senior Horticulture Consultant Chloe Whiteside (ADAS), Horticulture Consultant David Talbot (ADAS), Horticulture Consultant
Location of project:	Baginton Nurseries, Coventry, Warwickshire ADAS Boxworth, Boxworth, Cambridgeshire
Industry Representative:	Caroline Shove, Bryants Nurseries Ltd, Water Lane, Bovingdon, Hemel Hempstead, Hertfordshire, HP3 0NA
Date project commenced:	1 April 2017
Date project completed (or expected completion date):	31 March 2019

Grower Summary

Headline

- Hellebore ‘Royal Emma’, being the last variety to flower, was the best performing variety under shelf life conditions, and with sustained bud and flower production and a seven day timeframe for progression from bud to open flower, showed most promise as a house plant.
- To complement poinsettia sales from late November, ‘Royal Emma’ was close to minimum flower/bud specifications in the year it was examined.
- Earlier flowering/sales periods can be achieved with the other varieties examined.

Background

The Bedding and Pot Plant Centre (BPPC) has been established to address the needs of the industry via a programme of work to trial and demonstrate new product opportunities and practical solutions to problems encountered on nurseries. Knowledge transfer events including trial open days and study tours are also included in the programme.

The work programme is guided by a grower-led Management Group that includes members of the BPOA Technical Committee, and representatives from Baginton Nurseries, Coventry the host nursery for the BPPC, and growers representing both the bedding and pot plant sectors.

This is the Bedding and Pot Plant Centre report for:

Objective 5: *To evaluate the shelf life performance of micro-propagated Hellebores produced as pot plants for pre-Christmas marketing.*

Summary

The ideal Hellebore variety for pot plant production has an upright growth habit, with flowers that face upwards (Hellebore flowers tend to face downwards). For some Hellebores, including white varieties, flower colour can fade dramatically. While appreciation of colour change may be subjective, it can detract from the overall appearance in some varieties, impacting on sales. In order to investigate flower colour longevity in Hellebores as pot plants during shelf life, and identify any quality issues that may develop in these high value products, a trial was carried out between April 2017 and January 2018.

Forty plug plants of five micro-propagated Hellebore varieties (HGC ‘Wintergold’ and HGC ‘Jesko’, from Heuger; ‘Royal Emma’ from Just Must Perennials; and ‘St Antonia’ and ‘St Lucia’ from Bock) were transplanted into 1.5L terracotta coloured plastic pots in week 16, and established within a polythene tunnel until week 21, when they were moved outdoors.

Only four of the varieties were placed into the first shelf life trial commencing week 47 to week 1 (‘Royal Emma was not yet in flower). Four plants per variety were put into shelf life conditions in the next trial, commencing week 1, 2018 (04.01.18) (20°C, 12 hour day/night, 1000 lux light), where they remained until week 4 (25.01.18). The plants were assessed twice per week, buds were tagged at each assessment date and photographs of buds and flowers were taken. The number of buds and open flowers were also recorded.

HGC ‘Wintergold’ and HGC ‘Jesko’ were the first varieties to flower, with the first flowers opening in weeks 25 and 36 respectively. All plants of these varieties were in flower by the start of the shelf life test. Old flowers were removed to encourage bud development, but few new buds were produced during the second shelf life test. Once the plants were moved into shelf life conditions, the flowers on both HGC ‘Wintergold’ and HGC ‘Jesko’ turned green very quickly, with the HGC ‘Jesko’ flowers developing a mottled appearance. Both varieties lost quality in shelf life with yellowing to the lower leaves by week 4, and flower stems that were starting to wilt (**Figure 1**). Such quality loss would be expected with the earlier flowering varieties.

‘St. Antonia’ and ‘St. Lucia’ produced many white flowers whilst outside. When transferred into shelf life conditions, petal colour faded after approximately 11 days. The plants produced few buds once in the shelf life conditions, and so flowering was short-lived.

‘Royal Emma’ was the last variety to flower, and as a result performed well in the second shelf life test. This variety produced significantly more buds than all other varieties throughout the shelf life test. Although the flower petals turned green after approximately 11 days, the plants continued to produce buds, and flowered for longer than the other varieties.

Overall, under the conditions of this trial, ‘Royal Emma’ was the best performing variety, with all plants consistently floriferous with many buds, maintaining quality for the duration of the shelf life test. At seven days, progression from bud to open flower took longer than for other varieties. However, to complement poinsettia sales from late November, ‘Royal Emma’ was close to minimum flower/bud specifications in this particular trial, and perhaps an earlier flowering variety may be more suited

The remaining four varieties performed well under cooler conditions outdoors, where flower colour was maintained and many flowers were present, but this was short-lived once the plants were moved into shelf life conditions, possibly as a result of the earlier flowering period.

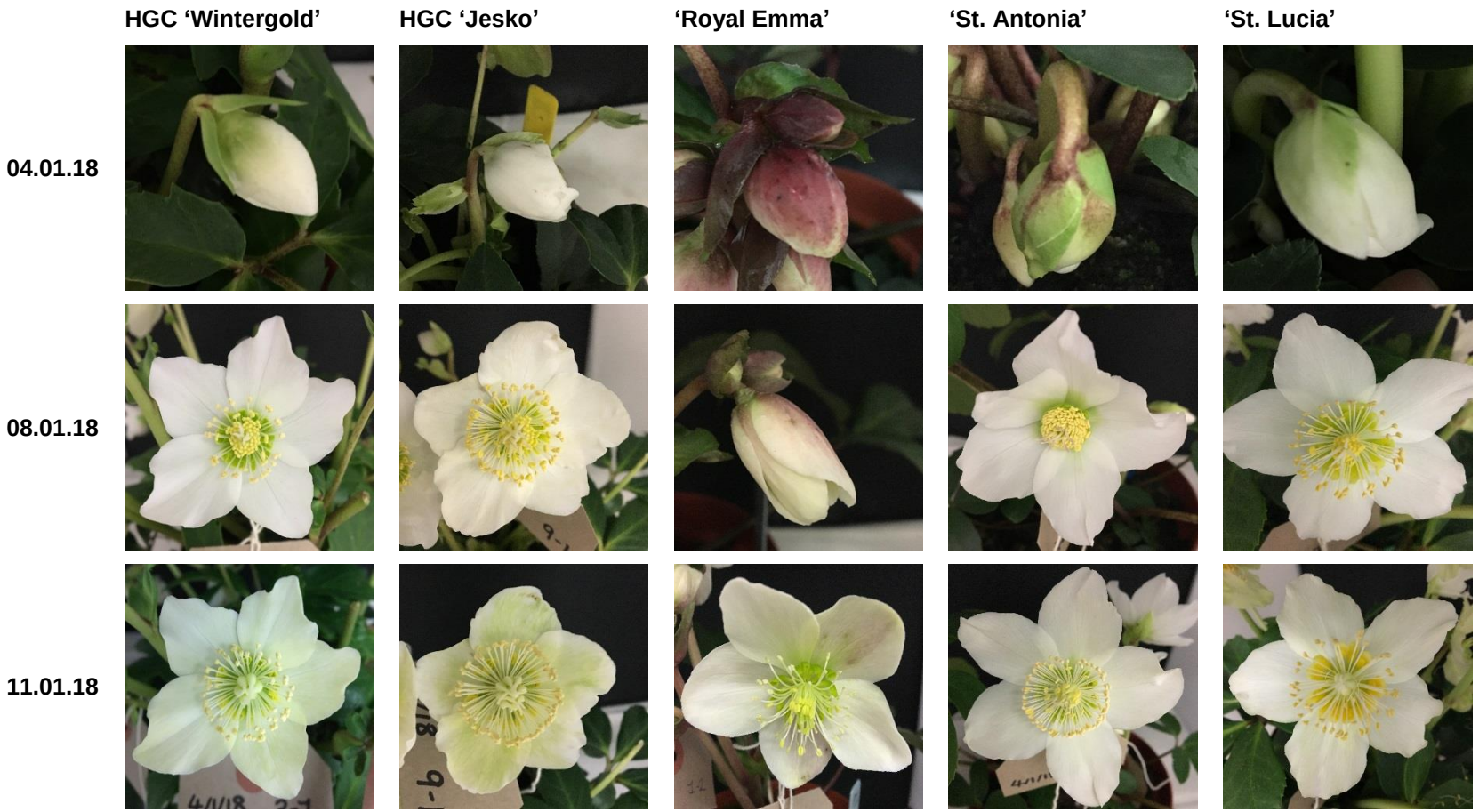

Figure 1. Flower development and colour change from the start of the shelf life test (04.01.18) until week 4 (25.01.18) – continued overleaf

15.01.18

19.01.18

22.01.18

25.01.18

Financial benefits

This work with Hellebores will potentially broaden the range of plants in flower for the pre-Christmas marketing window to compliment Poinsettia, given appropriate variety selection for key house plant attributes (such as flowers facing upwards, attractive foliage as well as flowers, minimal stamen drop etc.). Consumers have the option to purchase Hellebores during this period, display them as a house plant and then subsequently plant them in the garden rather than disposing of them at the end of the season (as they would for Poinsettia).

Sold as pot plants in flower, some Hellebore varieties can demand high retail prices with a 10% premium over green plants. Current retail prices for some of the varieties used in this trial include: *Helleborus* 'Royal Emma' - £13.50 (1.5 L); *Helleborus* 'Wintergold' - £8.50 – £14.99 (2 L); *Helleborus* HGC 'Jesko' - £8.50 (2 L).

Action points

- Schedule production to ensure plants produce the main flush of buds during target marketing period to maximise flowering in retail/post-sales phase.
- Lower temperatures where possible during retail to help maintain flower colour for longer.
- Consider earlier marketing for most of the varieties tested. Apart from 'Royal Emma', the varieties examined were producing open flowers by week 44 (01.11.17).