



Grower Summary

P19d

Commercial evaluation of new
poinsettia varieties

Final 2023

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AHDB Horticulture is a Division of the Agriculture and Horticulture Development Board.

Project title: Commercial evaluation of new poinsettia varieties

Project number: PO 019d

Project leader: Mr Andrew Fuller & Mr Harry Kitchener

Report: Final

Previous report: Annual reports produced in 2020 and 2021

Key staff: Antonio Rodrigues, Marlena Rutkowska, Viktorija Stoyanova, Kasia Obuchkowska

Location of project: Neamelea Nursery, Horseshoe Road, Spalding, Lincolnshire

Industry Representative: Graeme Edwards

Date project commenced: July 2020

Date project completed (or expected completion date): January 2023

Grower Summary

Headline

In this final year of AHDB funded trials, 21 varieties, all red were received from three young plant companies. The top 5 varieties judged the 'best' from the Growers assessment carried out on 24th November were;

Toro Red from Syngenta

No. RF648 from Dummen

Imperial Red from Dummen

No. RF650PM from Dummen

Embla Red from Dummen

Within Shelf-life evaluation carried out over a 5-week period, the varieties were grouped as follows;

Xmas Universe Red	Very Good
Xmas Feelings Red	Very Good
SK 199	Very Good
Christmas Song	Very Good
Toro red	Good
RF648	Good
Freya red	Good
Ferrara Red	Good
Bonfire Red	Good
Mirage Red	Good
Early Christmas	Good
SK 212	Good
Imperial red	Average
RF650PM	Average
Embla Red	Average
Mercury Red	Average
Bravo Bright Red	Average
PO334	Poor
Cabernet Red	Poor
Prima Red 2.0	Poor

Viking Pro	Poor
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Overview

This is the final report from a 3-year project which in each year evaluated a range of poinsettia varieties for their performance under UK growing conditions. They were assessed by growers in open days held in November and January each year, whilst objective data captured of key plant attributes.

In 2020 a range of coloured poinsettias were grown to evaluate their type, colour and performance. This trial served to highlight the range of colours and bract forms available and identified some 'best in class' for the main colours of marble, whites, pinks and jingle bell/glitter types. A summary from this trial can be found following this link <https://ahdb.org.uk/PoinsettiaVarieties>

In 2021 in addition to a number of coloured poinsettias main stream red varieties and bright orange and dark pinks were trialled. Further to the main trial at Neamelea, four growers received a small number of plants to grow and test (<50 plants of each variety); Woodlark Nurseries, Cobbins Nursery, Barnsfold Nursery and KRN Houseplants.

Throughout the 3 years, plants were kindly provided by many young plant companies and breeders which included – Bekeenkamp, Lazzerri, Syngenta, Dummen, Selecta and Florensis.

In this final year (2022), 21 varieties were selected and grown at Neamelea Nursery following the same protocol, as in previous years. The aim was to examine their performance and provide objective data and the opportunity for growers to review the plant varieties at the normal time of sale (November). Plants were all grown in 13cm pots in a peat reduced growing media supplied by Bulrush and grown within a commercial crop.

An open day was held at Neamelea on the 25 November 2022 which allowed growers to score the varieties for their preferred colours/forms. In this final year, there was no open day held at the end of shelf life, but results captured and shared within this report.

Background

Poinsettia remain a key seasonal crop for growers and demand continues for UK grown product. This is in part due to UK retailers wishing to promote UK grown product, whilst challenges remain with the risk of importing *Bemisia tabaci* into the UK on finished goods which risks destruction.

Different end markets have differing plant requirements. Products intended for supermarket sale typically require plants packed x 8 in a cardboard box or on a CC trolley and must achieve specific min/max height and visible head counts. Contrary, plants grown for direct sale, or via Garden Centre style outlets, can accept a greater variance and broader/larger plant forms. Thus, the market served will affect a grower's choice of variety.

Growers must be able to grow plants which meet their customer specifications (typically 4-5 heads/bracts and with a height of 26-30cm above pot). These must be grown to produce a return financially with minimal waste and quality that is superior to their competitors and imports. Varietal choice is very important for a grower to ensure he/she can produce a viable poinsettia crop. It is estimated over 95% of the total volume sold are red poinsettias, more so within supermarkets, compared to garden centres which tend to have a greater range of colours.

Poinsettia breeders each year bring to the market new varieties – aiming for brighter coloured, longer lasting plants which can be grown with minimal/without chemical growth regulation, reduced heat requirement and which can be grown at higher plant densities and are easy to sleeve – without stem breakage.

The aim of having these variety trials is to compare under a standard growing regime a range of varieties from each breeder which can be tracked and monitored through their growing phase and tested in a shelf-life environment. There are breeder trials within Europe but not every UK grower is able to attend, and European growing conditions and systems can be markedly different from that in the UK.

Neamelea Nurseries was chosen, as being one of the most modern glasshouse facilities in the UK, for the growing/trial site.

Summary

Objective 1: To evaluate plant quality, height and number of bracts of up to 21 Poinsettia varieties produced under standard commercial practices.

Plants were potted in week 31 into 13cm Modiform grey PP pots using Bulrush standard poinsettia substrate (see appendix). Plants were grown initially at 20/21°C Day/Night with +2°C ventilation and shading set at 250W/m². Fleece was used over the crop prior to pinching.

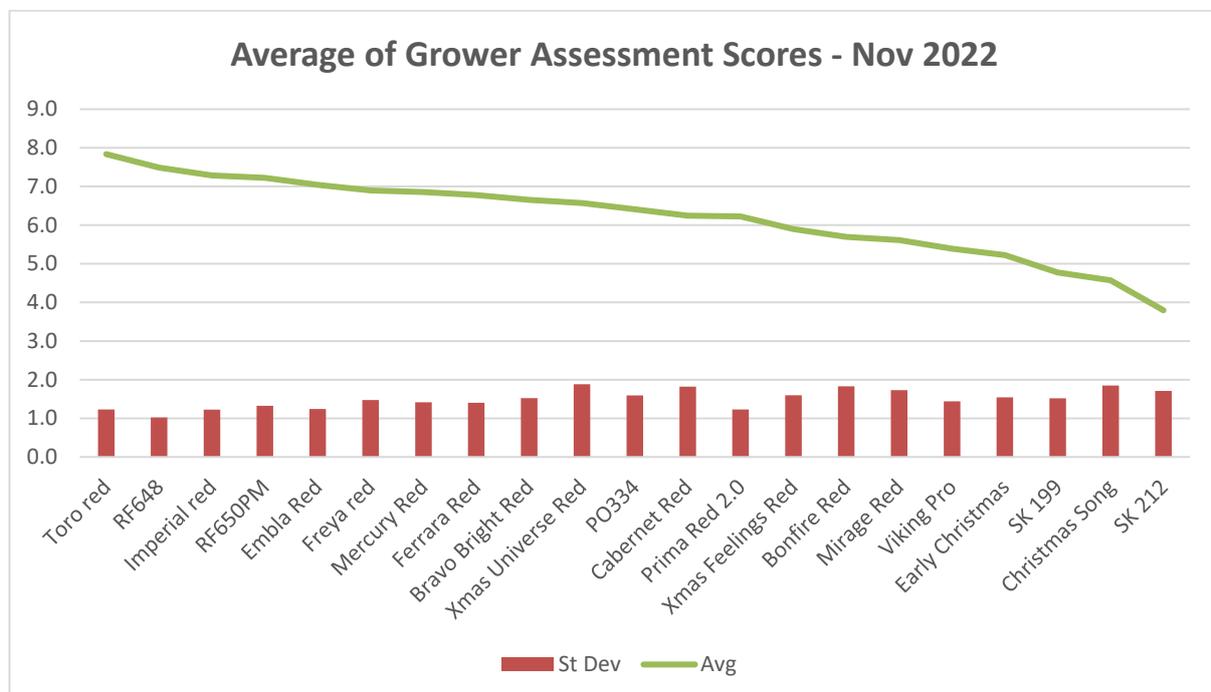
Plants were pinched to 6 leaves 2 weeks after potting.

Plants were spaced after 6 weeks to 25 plants/m². After a further 4 weeks plants were final spaced at 10.5 plants/m². At both spacings plants were graded according to their size (see appendices for notes and plant grade records). At final spacing each plot size comprised of between 50-100 plants.

After pinching, temperatures were amended to 18/19°C DN with ventilation +2°C and shading set to 450W/m². Photographs were taken at harvest and at weekly periods in shelf-life (4 weeks) - see appendices.

At harvest/marketing the following assessments were taken; plant height, plant width, total number of visible shoots; number of secondary shoots and overall quality score (1-10).

All plants were assessed by a group of 49 growers at the AHDB Open Day held on 25 November 2022 where they scored all varieties from 1-10, 10 being the best quality. The results of which are shown below. The St Dev (Standard Deviation) indicates the variances between growers – the higher the bar, the greater the variance.



Heights – All varieties were within commercial height specification, whilst Mirage Red and Bavo Bright Red were the shortest in habit and No.RF650PM, Cabernet Red and Bonfire Red were the tallest varieties.

Visible Bract Count – Freya Red was recorded with the highest visible bract count and overall 78% of its shoots were prominent at the point of sale.

Width – plants averaged between 32-45cm, with No.PO334 and Cabernet Red quite broad and not best suited to the growing density 10.5 plants/m²

Quality Scores- No.RF648 and Bonfire Red were attributed the highest Quality scores at harvest

Grower scores – see above graphic.

Objective 2: To evaluate the performance of selected Poinsettia varieties submitted to shelf-life testing.

Following the Grower Open Day in November up to 3 plants of each variety were taken into simulated shelf-life conditions.

Plants were sleeved, boxed and held for 48 hours before placing into shelf-life. The room was held at 20°C with light levels 900-1000lux for 12 hours/day. Plants were watered as required using saucers and tap water. Records taken at start of shelf-life and then weekly for 5 weeks

Photographs throughout shelf-life are included in the appendices and show the dramatic variance in plants performance over time.

Quality Scores – The varieties were scored overall for their shelf-life as Very Good, Good, Average or Poor. The top varieties, listed as Very Good, were Christmas Universe, Christmas Feelings, SK199 and Christmas Song.

Financial Benefits

The main opportunity for growers to influence their financial returns from these trials would be reduction in waste and improved return per m² by an increase in plant density.

Waste can be affected by variety choice. Each variety would have different vigor affecting height, and their ability to generate shoots/visible heads will be affected by their 'breaking' success, and the angle of shoot development. Typically, those varieties with a 'v-shape' lend themselves better for sleeving and packing, particularly for supermarket sales, whilst other varieties have a broader width and shoots more angular/candelabra, which can be more prone to damage at packing/sleeving.

These different varietal plant characteristics can affect growing plant density, requirement for chemical growth controls and waste due to not meeting specification on bract count.

These variety trials on a commercial nursery allow a wide range of varieties to be grown under the same environmental conditions and for growers to come and view them. Not all growers have the time and space to run large scale trials and thus can view these AHDB trials and focus their variety selection appropriately. If overall crop waste could be reduced from 10% to 5% based on variety selection, on a total volume of 100,000 plants, this saving of 5000 plants could be worth nearly £10,000 additional income.

The variety trials on poinsettia remain a key seasonal activity for growers to meet and discuss the crop performance from year to year. Although this is the last trial being funded by AHDB Horticulture before it closes, the format of the trials has been well received by growers and the Open Days have attracted in excess of 50 people every year. As such, the leading growers have collaborated to set up their own Poinsettia Group whom will aim to continue with variety trials, albeit with reduced data collation and reporting in future.

A poll of the growers who attended the final open day showed that combined production volumes were just under 4M units representing it is believed to be over 75% of the UK production.

Action Points

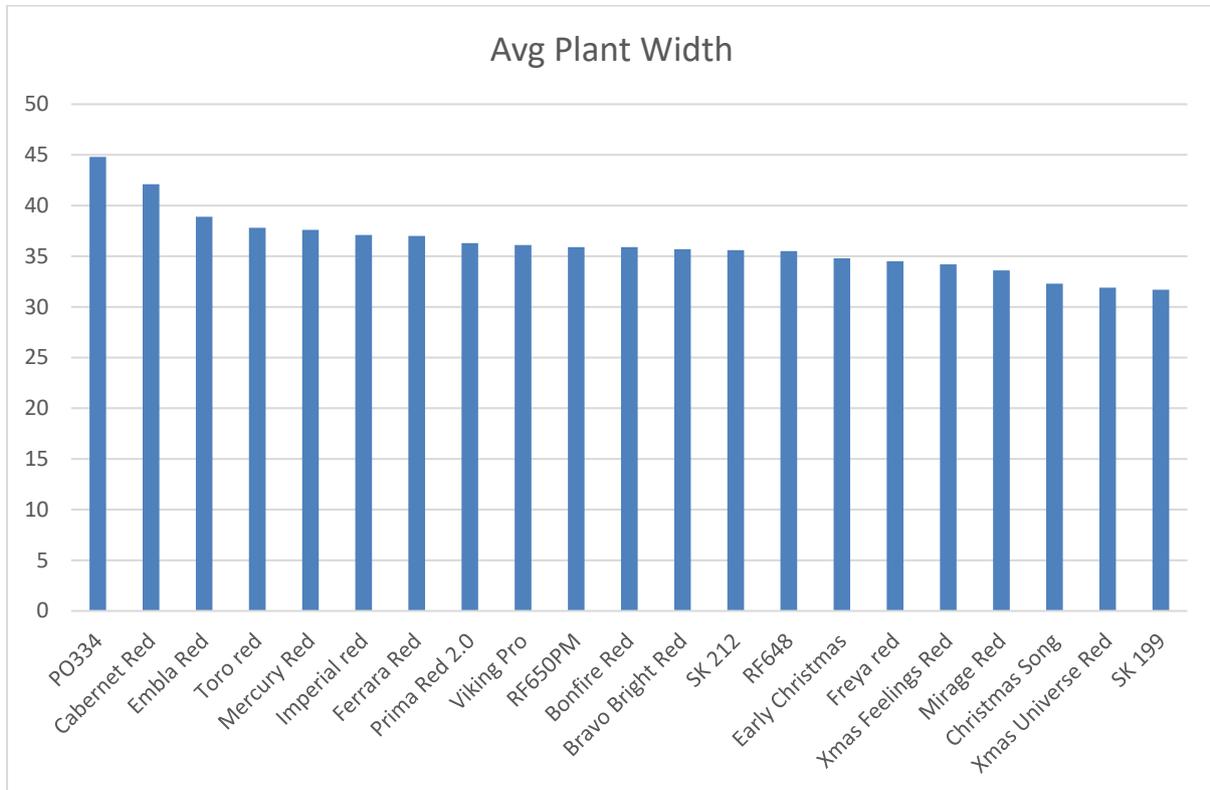
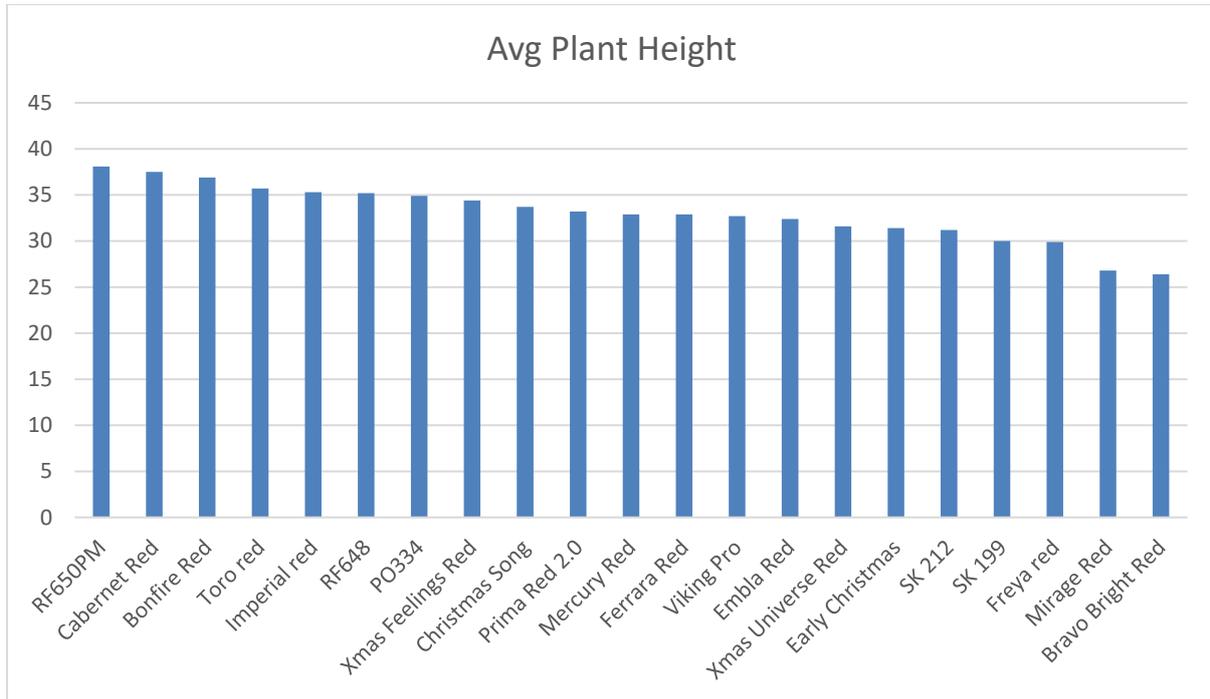
Each year new varieties and trends are seen in the marketplace and from breeding companies. Co-ordinated trials on a single nursery allow a larger range of varieties to be grown and compared directly between each other. However, it is important for growers to always carry out their own trials before committing to growing new varieties in volume.

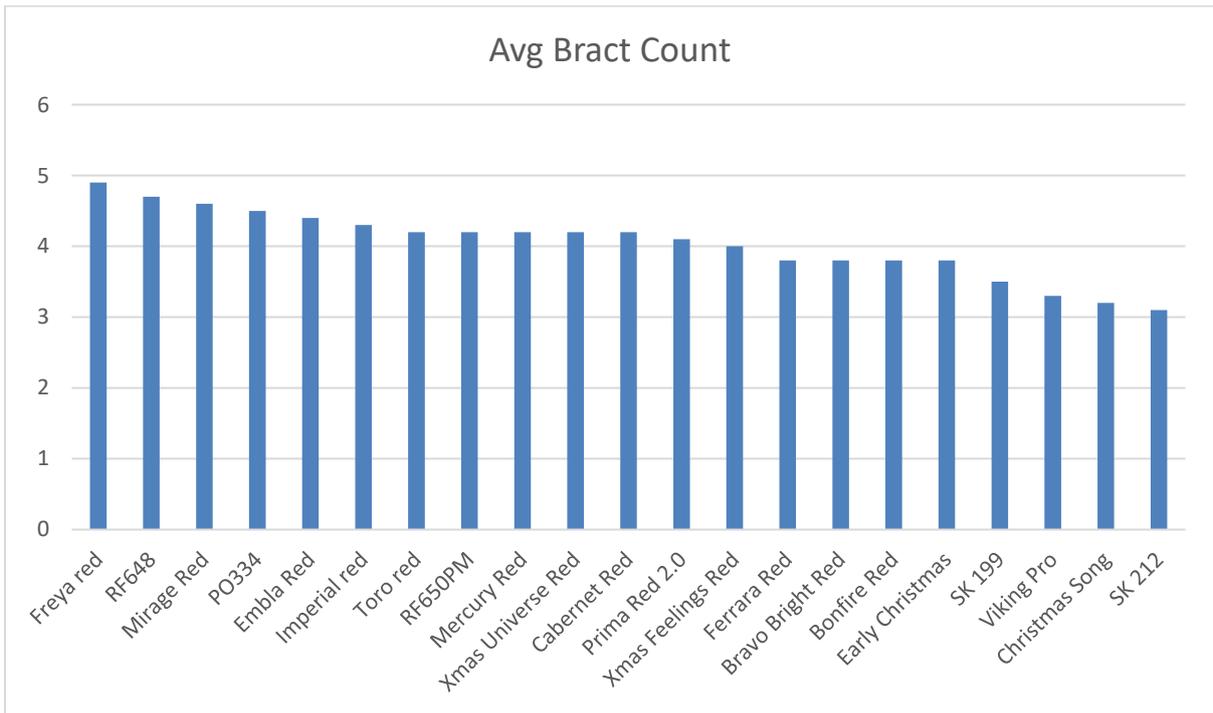
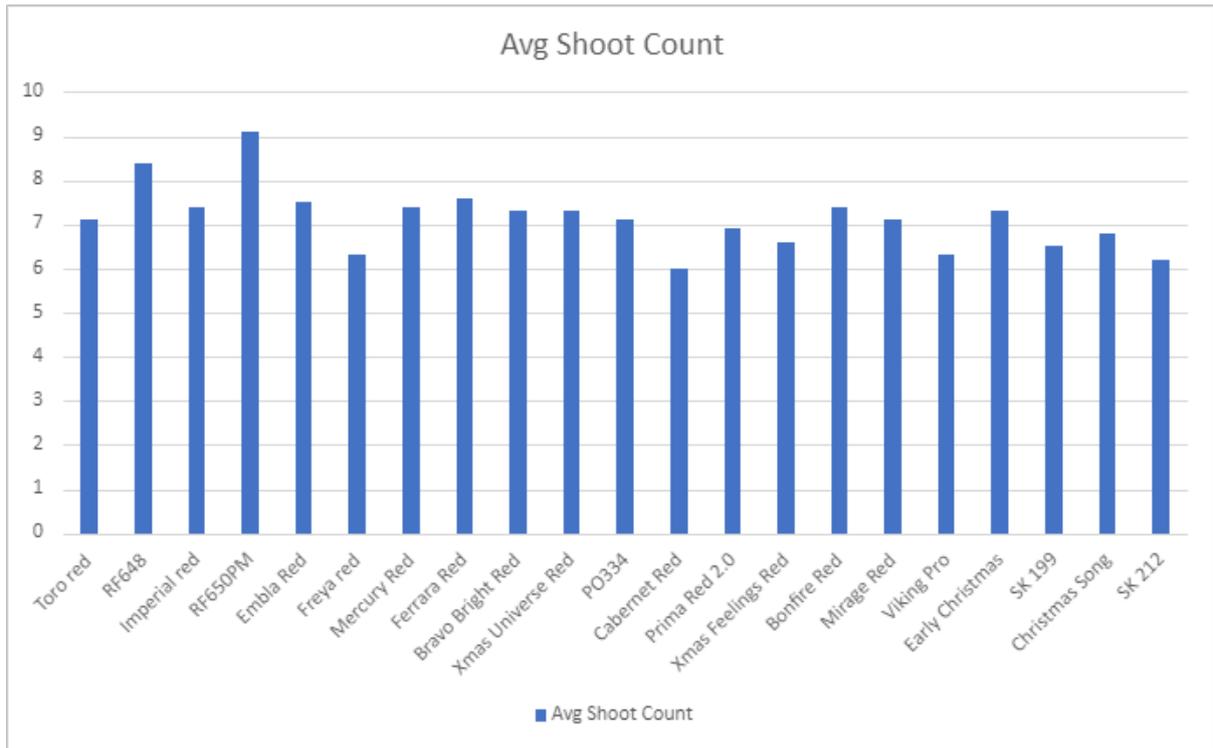
It is important to test plants for their robustness through the supply chain and performance in shelf-life as plants can appear 'good' at the point of sale but maybe more liable to breakdown and poor performance with the end customer.

Within the period of these trials there has been a distinct increase in the number of varieties that can be grown without the need for chemical growth regulators and varieties that lend themselves for higher plant density production (potential up to 12/m²). For certain markets this provides the grower with increased production without the need for building more capacity and will increase their turnover per m².

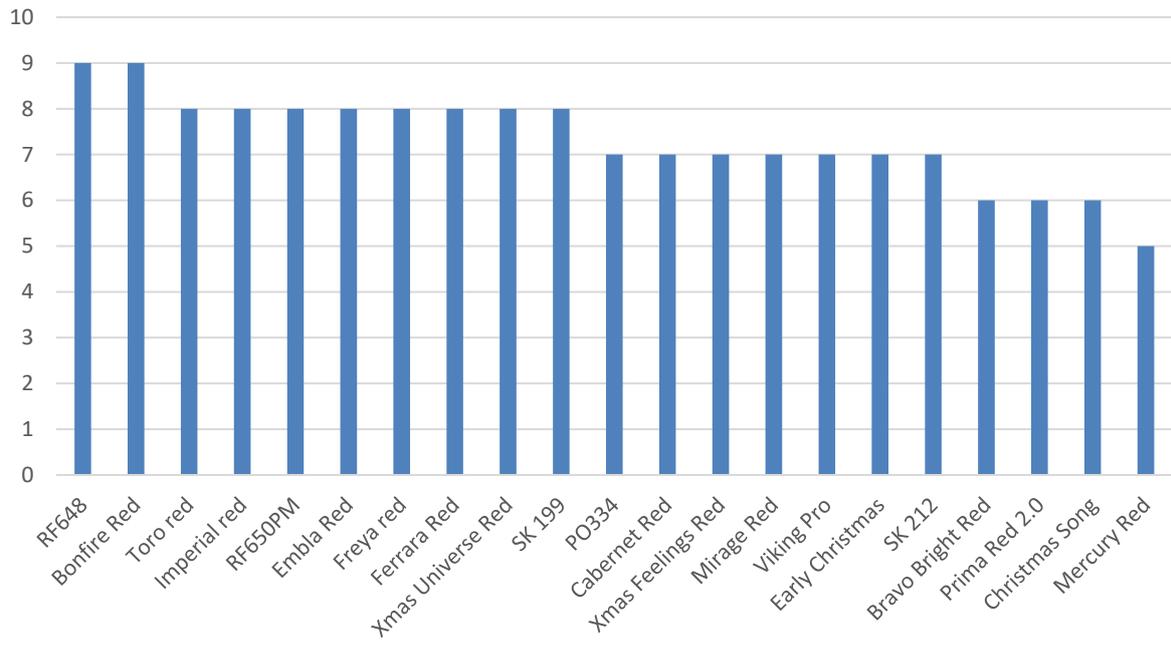
Further trends seen is to reduce plant specification (specifically plant height) and some degree of flexibility on bract count accepting a rounded plant habit rather than flat top.

Results - Assessment scores at harvest/marketing (November 2022)

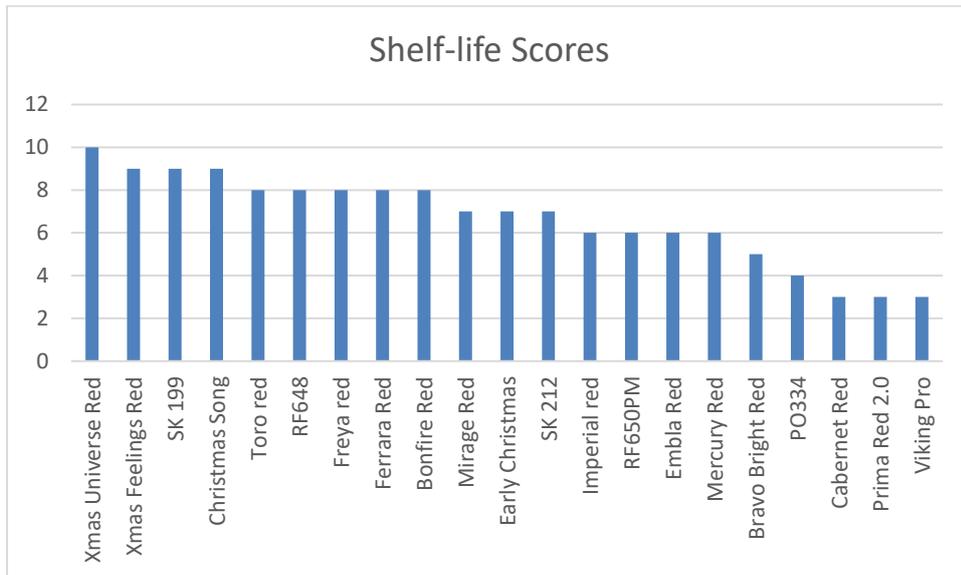




Quality Score

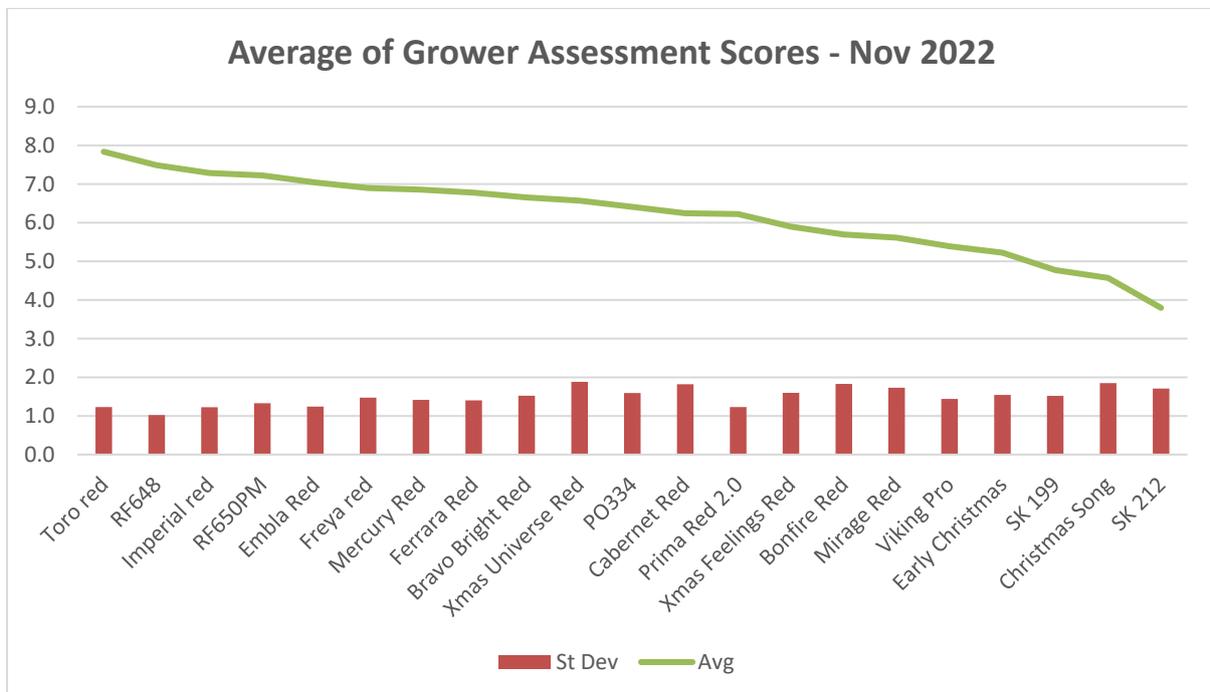


Results - Assessment scores during shelf-life (January 2022)



Results – Grower Assessment scores at harvest/marketing (November 2022)

Scores were recorded from 49 grower assessments made during the Open Day held on 24th November 2021. Max score = 10



Appendices – Images of each variety in shelf-life for 5 weeks

Bravo Bright Red

After 1 Week



2 Weeks



3 Weeks



4 weeks



Commentary

Striking 'Fire' red coloured poinsettia, with balanced habit/shape. Although the colour is striking it was not scored highly in the grower assessments. Shelf-life was scored 'good' with bracts holding well and some leaf yellowing and leaf drop after 4 weeks and signs of bract edge burn

Bravo Bright Red

After 1 Week

2 Weeks

3 Weeks

4 weeks



Commentary

Large bracted variety, with some damage noticeable on the bracts and stem breakage seen within shelf-life with 1 plant very poor after 3 weeks with obvious leaf drop at 3 and 4 weeks. Overall rated average in shelf-life

Christmas Song Red

After 1 Week



2 Weeks



3 Weeks



4 weeks



Deep burgundy red colour bract, it was picked out by supermarket customers as being of interest, but performed poorly within the shelf-life test with rapid deterioration with leaf yellowing, leaf drop and bract drooping. Filry heavy grade out within production (poor and uneven breaking of shoots)

Christmas Song Red

bridge
farm
group

After 1 Week

2 Weeks

3 Weeks

4 weeks



Commentary

Shorter in stature as a variety within the trial, thus more suited for smaller pot sizes, but performed strongly in shelf-life and rated Very Good. Good brightly coloured bracts on nicely shaped plants.

Embla Red

bridge
farm
group

After 1 Week



2 Weeks



3 Weeks



4 weeks



Commentary

Another strong performer from Selecta in the shelf-life test, with some leaf loss recorded but overall rated as Good.

Embla Red

bridge
farm
group

After 1 Week



2 Weeks



3 Weeks



4 weeks



Commentary

Embla Red is a fairly early variety to mature. Large, pointy bracts presented on an upright habit, it was rated average in shelf-life due to leaf drop but assessed highly in the Grower assessment and lends itself to higher density production

Freya Red

bridge
farm
group

After 1 Week



2 Weeks



3 Weeks



4 weeks



Commentary

Ferrara is a large bracted variety that is broad in its habit with strong stems. Rated good in shelf-life. Well shaped— not well suited for high density production due to its large canopy.

Freya Red

bridge
farm
group

After 1 Week



2 Weeks



3 Weeks



4 weeks



Commentary

Smaller bracts with upright habit it is seen as a suitable variety for high density production (@11/12m²) and was rated Good in shelf-life. Breaks well with a large proportion of the shoots presented at harvest as coloured bracts

After 1 Week



2 Weeks



3 Weeks



4 weeks



Commentary

Vigorous variety with strong upright growth and large bright red bracts. Suited to later potting or growing in larger pot sizes (15cm+). It was rated average in shelf-life with notable leaf yellowing and leaf drop.

Mercury Red

After 1 Week



2 Weeks



3 Weeks



4 weeks



Commentary

It was a little untidy in its habit with some 'double decking' of its bracts and its bracts at harvest were not fully mature. It was rated Average in shelf-life.

PO334 (Red)

After 1 Week

2 Weeks

3 Weeks

4 weeks



Commentary

Rated Good in shelf-life, it is a large bracted variety, but in quality assessment at harvest was viewed as one of the least good varieties. There was some evidence of bract edge burn.

PO334 (Red)

bridge
farm
group

After 1 Week

2 Weeks

3 Weeks

4 weeks



Commentary

Well presented variety, good shoot development but rated poor in shelf-life due to bract damage (bract edge burn)

RF648 (Red)

bridge
farm
group

After 1 Week



2 Weeks



3 Weeks



4 weeks



Commentary

An earlier variety, which may have impacted its performance in shelf-life as it performed poorly as shown.

RF648 (Red)

After 1 Week



2 Weeks



3 Weeks



4 weeks



Commentary

Distinct large bracted variety on robust plants which performed well initially in shelf-life, but one plant suffered and overall was rated Good.

SK199 (Red)

After 1 Week



2 Weeks



3 Weeks



4 weeks



Commentary

Was rated Average in shelf-life due to bract edge burn and leaf drop.

SK199 (Red)

After 1 Week



2 Weeks



3 Weeks



4 weeks



Commentary

This variety was later planting, but performed very well in shelf-life and was rated Very Good

Toro Red SK212 (Red)

bridge
farm
group

After 1 Week



2 Weeks



3 Weeks



4 weeks



Commentary

Not a true white - creamy white but stood up well in shelf-life for the first 4 weeks and plants were nicely shaped and matched their pink and red counterparts

Toro Red

After 1 Week



2 Weeks



3 Weeks



4 weeks



Commentary

Strong performer and rated top by the Growers and was Good in shelf-life.

Christmas Feelings Red



Commentary

Its large bracts and vigorous habit were prone to damage and in shelf-life bract edge burn was noticeable.

Christmas Feelings Red

After 1 Week



2 Weeks



3 Weeks



4 weeks



Commentary

Strong performer in growing assessments and also shelf-life. Has a flatter bract and large bract compared to Christmas Universe.

Christmas Feelings Red



Commentary

Good red variety rated well in both grower assessments and in shelf-life

Appendix – Substrate Specification (Bulrush)

Peat Grade 18mm

30% Dark Peat

60% Light Peat

10% Sod Peat

200L Perlite

1.7Kg PG Mix 15:10:20+TE

0.4L Wetting Agent

5.5kg Lime