Grower Summary

P19d

Commercial evaluation of new poinsettia varieties

Final 2021

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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: P19d

Project leader: Mr Andrew Fuller & Mr Harry Kitchener

Report: Final

Previous report: N/A

Key staff: Antonio Rodrigues, Marlena Rutkowska

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

Industry Representative: Graeme Edwards

Date project commenced: July 2021

Date project completed (or expected completion date): January 2022

Grower Summary

Headline

In this second year of these AHDB funded trials, 22 varieties, largely as coloured (non-red) varieties were received from five young plant companies. The varieties adjudged the 'best' in each colour category based on growing and shelf-life assessments were;

Red – SK 200 from Selecta

White – Icescape from Florensis

Pink – Hubba Bubblegummy from Syngenta

Marble – Mars Marble from Syngenta

Glitter - Christmas Feelings Glitter from Selecta*

**however, there was a high % of reverted plants within both Glitter varieties tested this season.*

At the grower open day held in November, 25 growers each 'scored' the varieties. The best three varieties were all 'reds' (Toru Red, SK200 and Red Joy), whilst the best colour in each category was;

Best Pink – J'Adore Pink

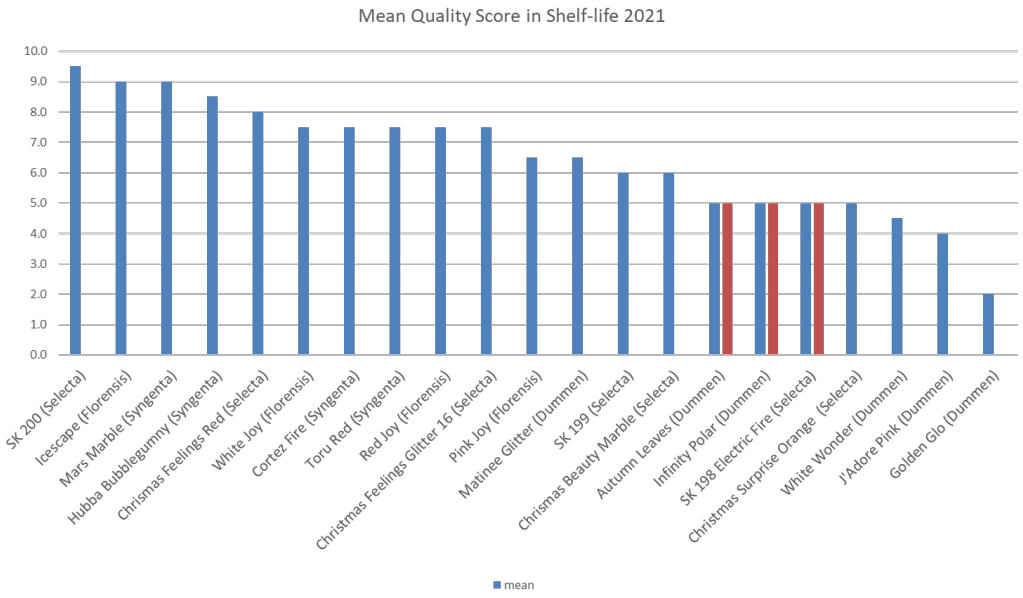
Best White - Icescape

Best Marble – Mars

Best Jingle – Matinee

Best Orange – Electric Fire

At the follow-up grower open day held in January a repeated grower assessment was carried out. The results are shown graphically below.



Background

In 2020 a range of coloured poinsettias were grown to evaluate their type, colour and performance. The summary from this trial can be found here https://ahdb.org.uk/PoinsettiaVarieties. 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, jingle bell/glitter types

In 2021 the trial was repeated using the same growing materials and glasshouse environment. The focus was to look at coloured poinsettia although some cross over with main stream reds occurred with the inclusion of bright orange and dark pinks. In addition to the main trial at Neamelea, four other 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.

Plants trialled were kindly provided by Syngenta, Dummen, Selecta and Florensis. In total 21 varieties were grown, which included 7 "orange or red" varieties.

An open day was held at Neamelea on 25 November which allowed growers to score the varieties for their preferred colours/forms and again in January 2022 to observe plants at the end of shelf-life.

Poinsettia remain a key seasonal crop for growers and demand continues for UK grown product. Issues remain with the risk of importing Bemesia tabaci into the UK on finished goods which risk 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 enhanced by minimal waste and quality that is superior to their competitors and imports. Varietal choice is very important for a grower to ensure production of 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 new varieties to the market– aiming for brighter coloured, longer lasting plants which can be grown with minimal/without chemical growth regulation, recued heat requirement and which can be grown at higher densities and are easy to sleeve without stem breakage.

The aim of these trials is to compare a range of varieties from each breeder under a standard growing regime 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.

Thus Neamelea Nurseries was chosen, as being one of the most modern glasshouse facilities in the UK, for the growing/trial site. Poinsettia varieties were selected from breeding/young plant supply companies and were potted in week 30 into 13cm pots at Neamelea. Unfortunately supply issues from Italy (Brexit related on PHSI) and notifiable pests (Bemisia) meant certain varieties were not included in the trials restricting the number tested to 21.

Summary

Objective 1: To evaluate plant quality, height and number of bracts of up to 20 Poinsettia varieties produced under standard commercial practices.

Plants were potted in week 30 into 13cm Modiform grey PP pots using Bulrush standard poinsettia substrate (see appendix). Plants were grown initially at 20/21C Day/Night with +2C ventilation and shading set at 250W/m^2. Fleece was used over the crop prior to pinching.

Plants were pinched to 6 leaves 2 weeks after potting.

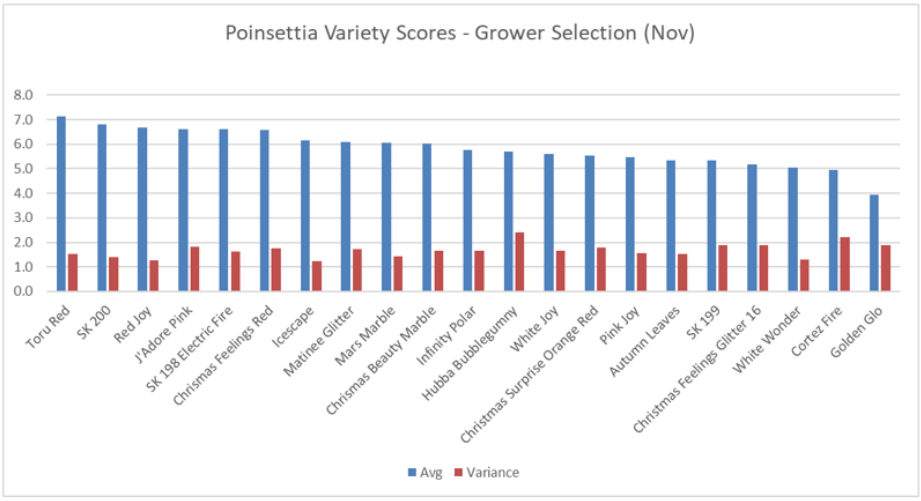
Plants were spaced after 6 weeks to 25 plants/m^2. After a further 4 weeks plants were final spaced at 10.5 plants/m^2. At both spacings plants were graded according to their size (see appendices for notes and plant grade records). At final spacing each plot size comprised of between 50-100 plants.

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

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 25 growers at the AHDB Open Day held on 25 November 2021 where they scored all varieties from 1-10 with 10 being the best quality.

Grower Assessment Scores – Year Two 2021



Commentary

- Top three were all 'reds'
- Best Pink – J'Adore
- Best White - Icescape
- Best Marble – Mars
- Best Jingle – Matinee
- Best Orange – Electric Fire
- 25 grower assessed and scored the trials 0-10.
- Variance indicates the different views – the lower the variance the more growers were in agreement.

Heights – the tallest varieties were Pink Joy and Infinity Polar, whilst the shortest were Christmas Beauty Marble, Christmas feelings Glitter and Matinee Glitter.

Visible Bract Count – Infinity Polar and Red Joy recorded the highest average bract count at or above 5 bracts/plant. Note: the trial was grown without chemical growth regulation.

Width – plants averaged between 35-40cm, and indicative of the final plant density of 10.5 plants/m2 (thus around 45 heads per m2)

Quality Scores- Red joy received the highest score.

Grower scores – see above graphic and commentary.

Objective 2: To evaluate the performance of selected Poinsettia varieties (up to 12 chosen by the grower panel at the Nov Open Day) submitted to shelf-life testing.

Following the Grower Open Day in November 6 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

Between weeks 4 and 5 (over Xmas period) there was an issue with lighting which means plants were held in the dark (other than window light) for this period. Some plants

were/became infected with red spider mite* and were removed from the trial to prevent contamination to other varieties

*this was seen on certain colours in the growing phases

Photographs throughtout shelf-life are included in the appendices and show dramatically the variance in plants performance over time

Quality Scores – The variety SK 200 (red) retained the highest quality. White – Icescape; Pink – Hubba Bubblegummy; Marble – Mars and Glitter – Christmas Feelings

Financial Benefits

The main opportunity for growers to influence their financial returns from these trials would be reduction in waste and improved return per m^2 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 both at the point of sale but also at the end of January to observe their performance in shelf/home life conditions. Not all growers have the time and space to run large scale trials and thus have the opportunity to 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.

Action Points

Each year new varieties and trends are seen in the marketplace and from breeding companies. Co-ordinated trial on a single nursery allow a larger range of varieties to be grown

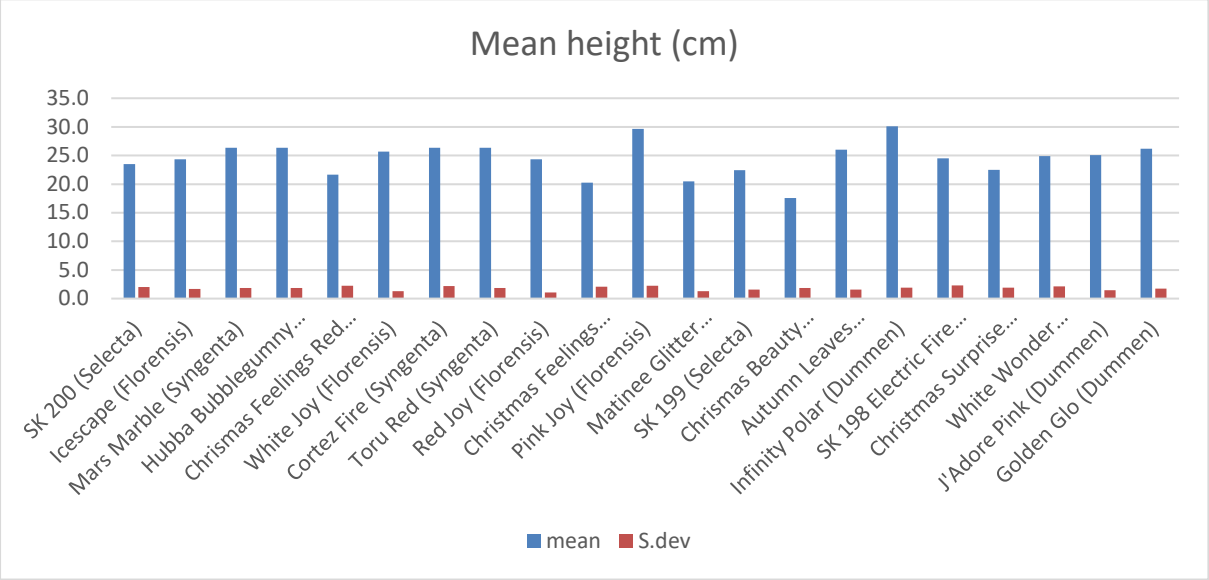
and compared directly between each other. Failing this it is important for growers to always carry out their own trials before committing to growing new varieties in volume.

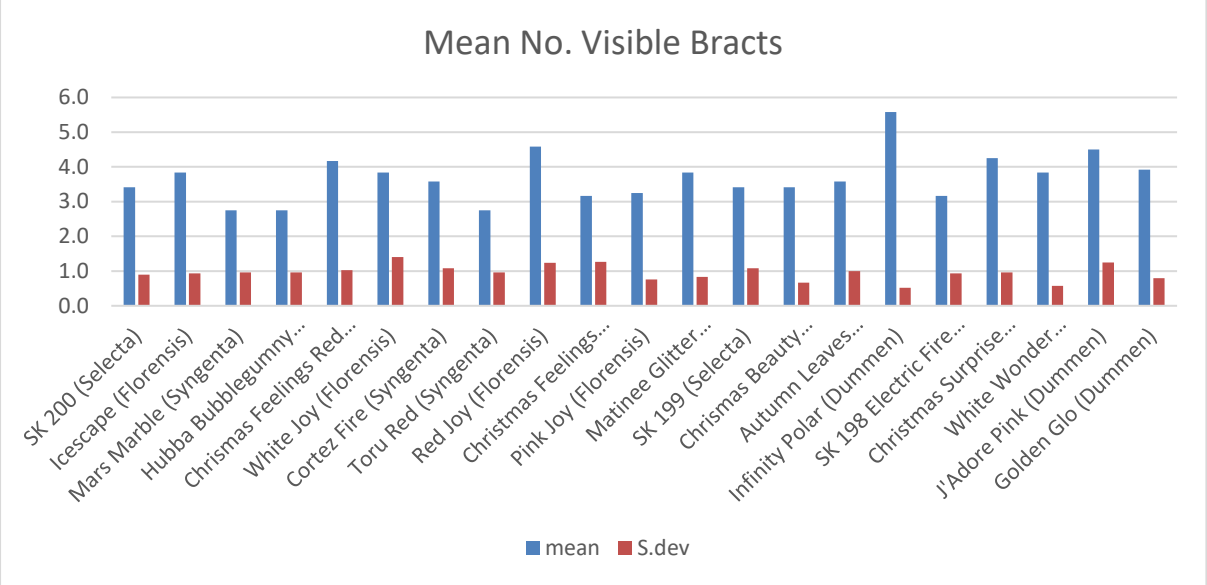
It is important to test plants for their robustness through the supply chain and performance in shelf-life as plants can appear ‘good’ at the point of sale but maybe more liable to breakdown and poor performance with the end customer.

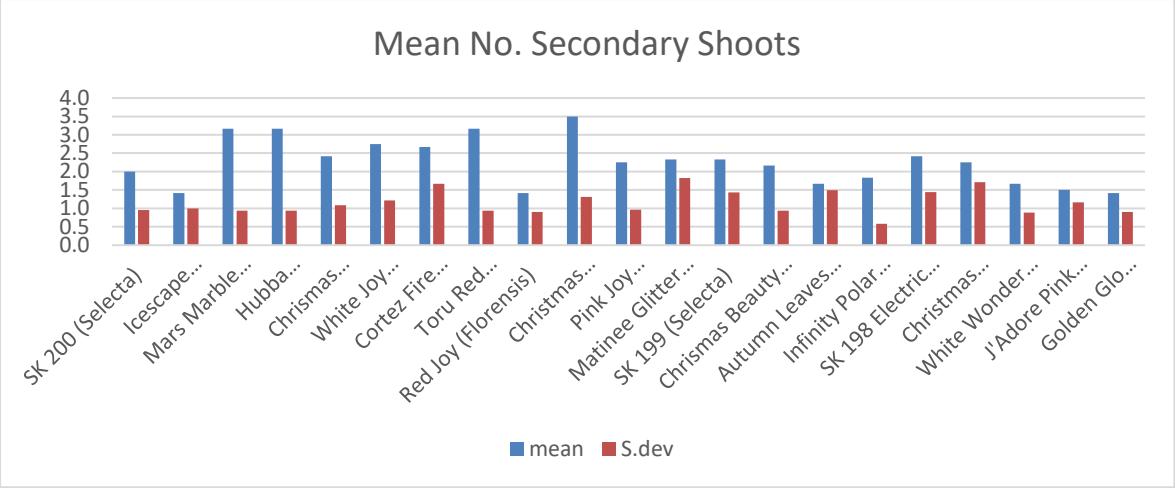
There appear new genetics which can be grown with little or no requirement for chemical plant growth regulation, and break very well, to produce plants which meet market specifications and can assist in helping growers lower their crop waste.

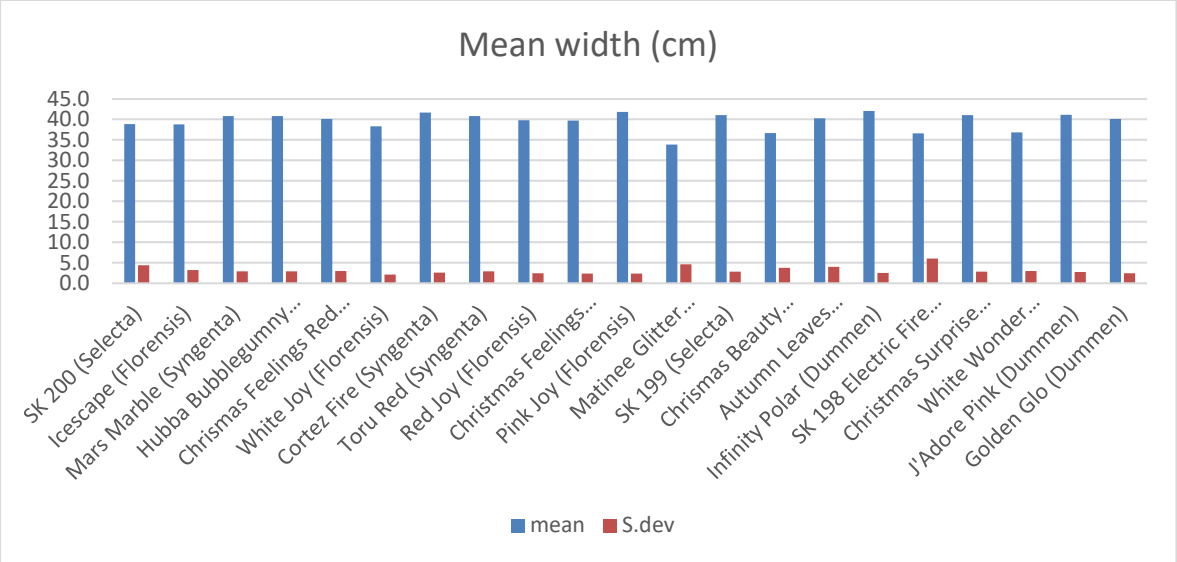
As costs of production continue to increase whilst pressure to maintain or reduce sale price remain, it is important grower appraise their own costs of production and identify measures that can be used to mitigate rising costs. This can be by using more compact varieties with high density of production or those with less waste (i.e through stem breakage)

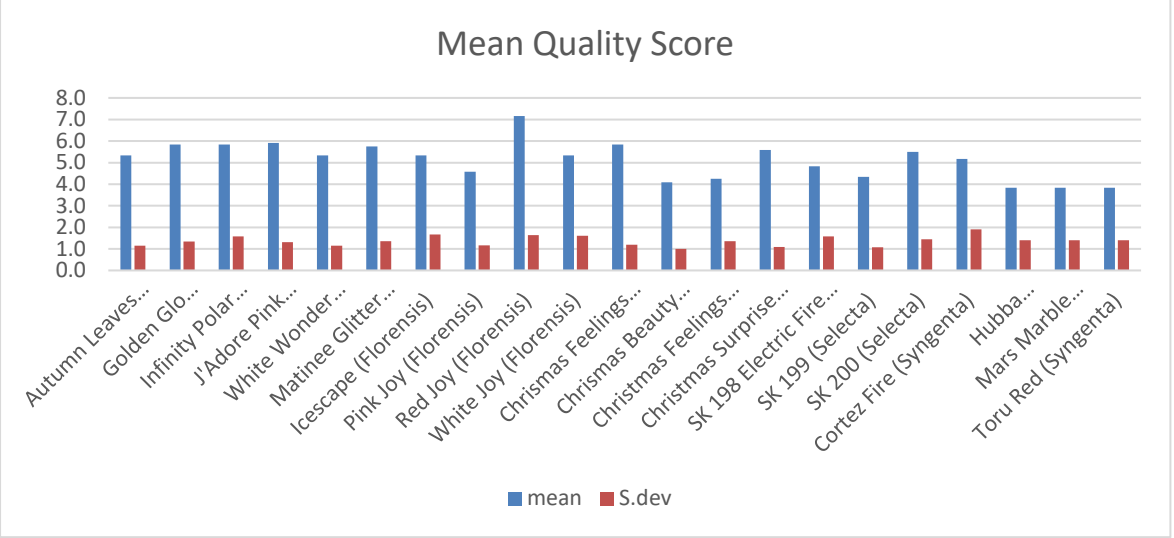
Results - Assessment scores at harvest/marketing (November 2021)





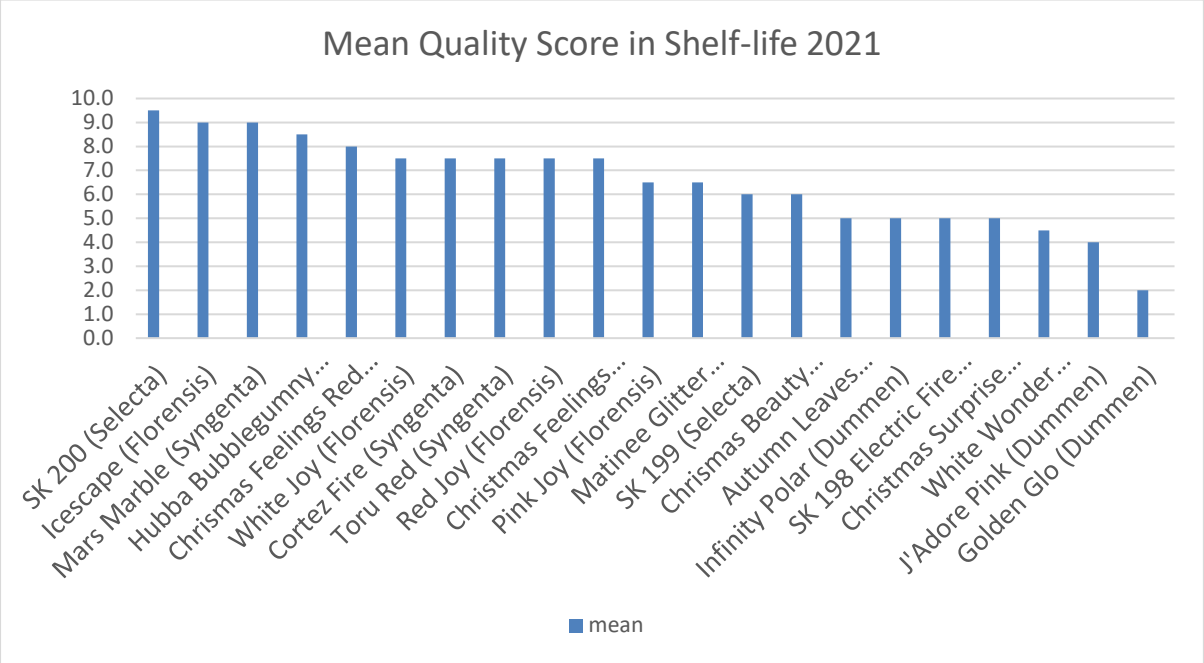






+quality score was a subjective assessment by Mr Harry Kitchener. Max score = 10

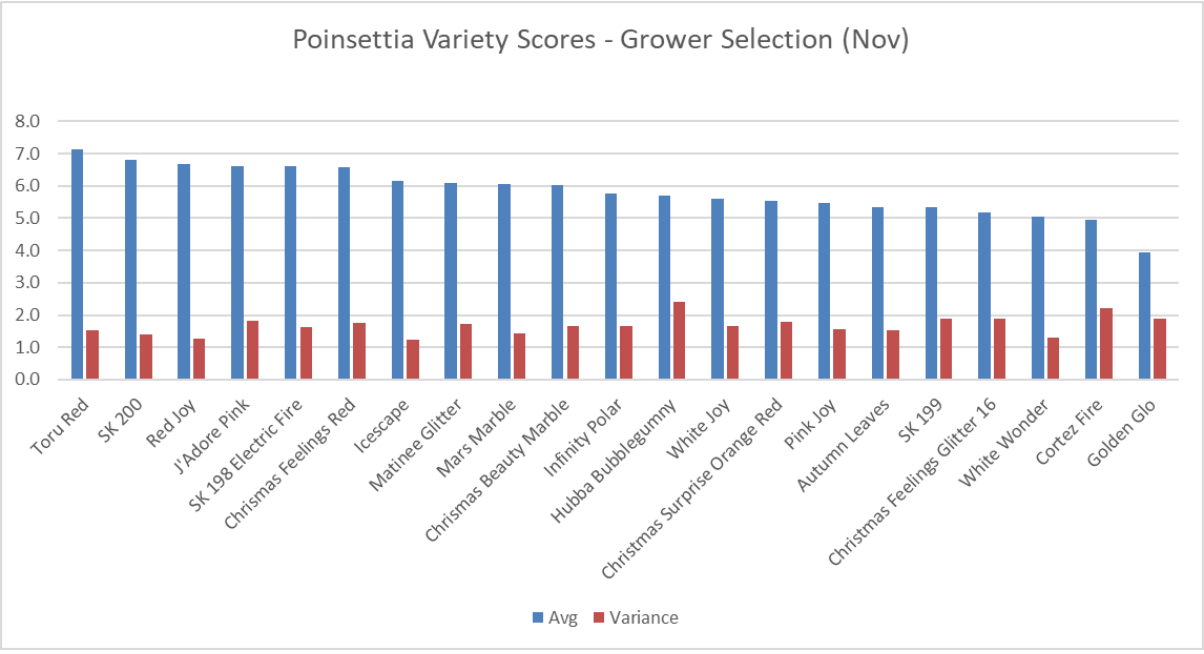
Results - Assessment scores during shelf-life (January 2022)



+quality score was a subjective assessment by Mr Harry Kitchener. Max score = 10

Results – Grower Assessment scores at harvest/marketing (November 2021)

*scores were recorded from 25 grower assessments made during the Open Day held on 21st November 2021. Max score = 10



Appendix – Crop Images at Harvest and over shelf-life period (4 weeks)

White Wonder

Commentary

Later to mature – and rather 'creamy' looking with some variability in bract colouration – some plants more white than others. Shelf-life was poor (other than 1 plant!).

White Joy

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

Icescape

Commentary

One of the better whites we have seen and maintained its colour in shelf-lifewell. We didn't have Alaska in this years trial but Icescape would appear to give it a run for its money. Shelf-life was very good

Infinity Polar

Commentary

Not a pure white and late to mature. Unfortunately had to terminate shelf-life as plants became infested with red spider mite (RSM)

Golden Glow

Commentary

Rather more yellow than gold, compact plants and did show some early bract edge scorching. Root vigour was poor and plants deteriorated rapidly in shelf-life

Autumn Leaves

Commentary

Unique colour but very compact. Is stable in its bract colouration. Shelf-life halted early as plants became infested with RSM (Red Spider Mite)

Christmas Marble

Commentary

Strong and good stable Marble colour and lasted well in shelf-life

Mars Marble

Commentary

Well presented bracts and lots of them, whilst marble effect slightly paler/softer toned. Excellent shelf-life

Hubba Bubblegummy

Commentary

Bold hot pink/Lipstick pink colour on strong plants. The colour did fade a little in shelf-life but was still vibrant. Bracts begun to show bract edge scorch at 3 weeks but overall performed well

J'Adore Pink

Commentary

Very popular bright pink, maturing early in the season akin to 'Princettia types'. This maybe reason why shelf-life was poorer as more mature at start as typically has performed well in previous years

Pink Joy

Commentary

Later to mature but good strong pink colour and like its brothers/sisters (red and white) performed well in shelf-life for the first 4 weeks

Cortez Fire

Commentary

Bright orange bracts which held up well in shelf-life. Foliage begun to yellow and drop leaves after 4 weeks, but overall good performance.

Electric Fire

Commentary

Images not showing its true colour as well. Scored well by the growers. Unfortunately had red spider mite infestation and removed from shelf-life

Surprise Orange

Commentary

Less broad compared to Cortez with bright orange fire bracts. Bracts faded quickly in shelf-life and begun to show bract edge scorch after just two weeks

Matinee Glitter

Commentary

Jingle bell/Glitter type showing fairly high % of reversion to white.
Shelf-life was comparatively good.

Feelings Glitter

Commentary

Nice prominent Jingle Bell type but which tended to have a fair amount of reversion back to marble. Shelf-life good for the first 4 weeks

Red Joy

Commentary

Red which was fairly compact nice shape and well presented bracts. Begun to show bract edge scorch after 2 weeks.

Christmas Feelings

Commentary

Main red variety with large blousy bright red bracts and stood up well in shelf-life.

SK 199

Commentary

Red and quite compact in habit. Begun to show deterioration fairly quickly in shelf-life and by week 3 looking poor

SK 200

Commentary

Popular from the growers assessment (as a red) and performed strongly in shelf-life

Toru Red

Commentary

Top scored by the growers assessment. Strong upright red with well presented bright red bracts which held their colour well in shelf-life. Deteriorated after 4 weeks

Appendix – Other highlights from variety trials in the UK and USA in 2021

Others….

Commentary

Over 30 other mainly red, but with some novelty varieties were on display supplied by Dummen

https://www.greenhousegrower.com/crops/poinsettia-favorites-from-mitchells-nursery-and-greenhouse/

North Carolina… Mitchell's Nursery.

Frozen White (Dummen)

Princettia Pink

Red
- First Place: Christmas Mouse
- Second Place: Red Elf
- Third Place: Christmas Feel Merlot
- Fourth Place: Christmas Day Red
- Fifth Place: Aries

Novelty
- First Place: Ice Punch
- Second Place: Red Glitter
- Third Place Tie: Christmas Beauty Princess and Christmas Beauty Marb
- Fourth Place Tie: Cortez Burgundy and Premium Picasso

White
- First Place: Frozen
- Second Place: Princettia White
- Third Place: Alaska White
- Fourth Place: Alpina
- Fifth Place: SK 201

Pink
- First Place: Princettia Queen Pink
- Second Place: Candy Bubble Gum
- Third Place: Luv U Pink
- Fourth Place: J'Adore Soft Pink
- Fifth Place: J'Adore Dark Pink

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

Appendix – Waste Figures from planting until sale

Dummen	**% Survived**
Autumn Leaves	100%
Golden Glo	84%
Infinity Polar	100%
J'Adore Pink	100%
White Wonder	74%
Primero Red Glitter	n/a
Matinee Glitter	100%
Florensis	
Icescape	71%
Pink Joy	67%
Red Joy	93%
White Joy	71%
Selecta	
Chrismas Feelings Red	100%
Chrismas Beauty Marble	100%
Christmas Feelings Glitter 16	90%
Christmas Surprise Orange Red	94%
SK 198 Electric Fire	100%
SK 199	100%
SK 200	100%
Syngenta	
Cortez Fire	100%
Hubba Bubblegumny	100%
Mars Marble	100%
Toru Red	98%