

Special Research Report #444: Postproduction

Best Practices for Retail Display of Cut Gerbera Daisy

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BACKGROUND

Displaying cut flowers at room temperatures shortens vase life. Using floral display coolers that allow consumers to view and purchase flowers have increased in popularity. These studies evaluated: (1) a range of retail temperatures and display times and (2) compared the effect of dry versus wet held gerbera daisy flowers using floral display coolers on their postharvest performance.

MATERIALS AND METHODS

Cut gerbera varieties from commercial growers in the USA and Colombia were transported dry in boxes arriving within 4-7 days after harvest. Flowers were cut, placed in a commercial hydration solution and held in closed-door florist display coolers manufactured by MEI

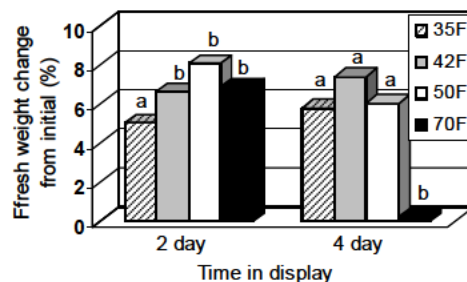
(LaGrange Park, IL) for up to 7 days at 35, 42, and 50 °F, 5 $\mu\text{mol m}^{-2}\text{s}^{-1}$ (24 hr/day) and 65-70% relative humidity. Control flowers were displayed outside the coolers at 70 °F.

After each display period, stems were cut and placed in flower food and held at 70 °F, 10 $\mu\text{mol m}^{-2}\text{s}^{-1}$ (12 hr/day), and 50±5% relative humidity to simulate consumer conditions. Fresh weight was recorded over time in display and consumer conditions and the quality and vase life was recorded.

RESULTS

Relative fresh weight of 'Sunset' increased at all display temperatures for the first two days, however, it was lowest at 35 °F (Fig. 1).

Fig. 1. Fresh weight change of 'Sunset' during display.

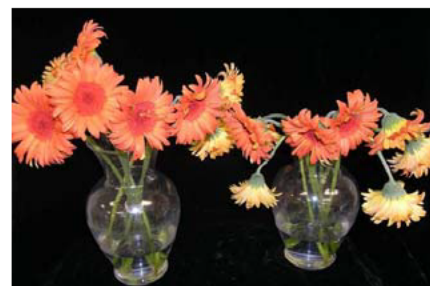


After 4 days in display, fresh weight continued to increase at 35 °F and 42 °F, but declined 26% and 89% at 50

and 70 °F, respectively, when compared to 2 day weights. These results indicate that the rate of solution uptake is dependent on temperature. Initially, uptake was greatest at the higher temperatures, but then declined rapidly, especially for flowers displayed at 70 °F.

Under consumer conditions, fresh weight loss and flower decline occurred faster when previously displayed at the higher temperatures (Photo 1).

Photo 1. 'Sunset' vase life increased 45% using display coolers.

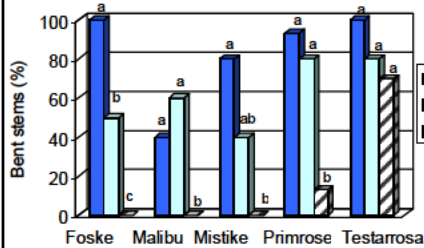


42 °F

70 °F

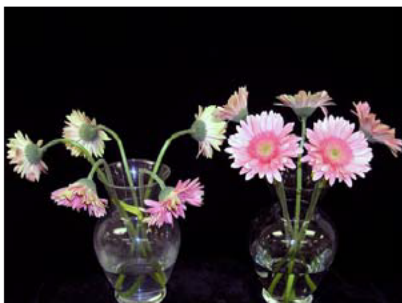
Severe stem bending occurred in all varieties tested when removed from 35 °F and 42 °F display coolers (Fig. 2). Generally, bending didn't occur at 50 °F except for 'Testarrosa'. Stem bending occurred after 2 days, but became very pronounced after 4 days or longer in display conditions (Photo 2.).

Fig. 2. Low temperature caused stem bending after 6 days in display.



Most stems recovered from bending after 2-3 days under consumer conditions with the exception of 'Testarrosa' and 'Primrose'.

Photo 2. Stem bending of 'Primrose' when removed from display coolers.



35 °F 50 °F

We found that supporting stems with chicken wire placed over the top of a plastic bucket or procona overcame this troublesome issue (Photo 3). Also, the stems should not touch the bottom of the container.

Photo 3. Support of stems prevented stem bending.

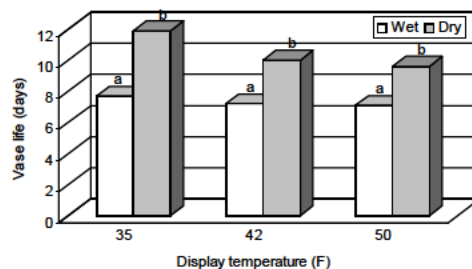


Gerbera vase life decreased as display time and temperature increased, especially when flowers were displayed at room temperature. Due to the quality issues associated with severe stem bending at 35 °F, we recommend displaying gerbera at 42 °F for no longer than 2 days. Quality will be enhanced if stems are supported during display.

Displaying Wet versus Dry

Displaying gerbera in a hydration solution or dry in boxes at 35, 42, and 50 °F showed no difference in vase life when held for 3 days. However, when the display time increased to 7 days, vase life significantly increased 2.5 to 4.2 days when held dry (Fig. 3.). Inconsistent vase life results were found when 'Meriva' was stored dry versus wet.

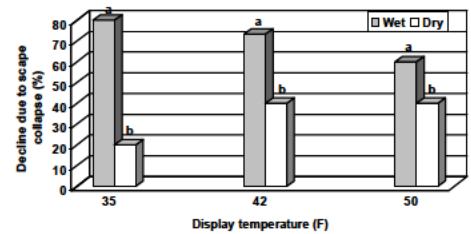
Fig. 3. Vase life of 'Foske' displayed for 7 days wet versus dry.



With 'Foske' and 'Meriva', there was a significantly higher amount of postharvest decline due to stem collapse when displayed wet for 7 days (Fig. 4). It is likely that bacterial plugging of the stem

may be occurring in wet held flowers.

Fig. 4. Consumer decline of wet versus dry held gerbera.



CONCLUSIONS

Best practices for displaying cut gerbera:

- * Display in coolers at 42 °F for no longer than 2 days
- * Support stems to reduce stem bending
- * Choose varieties with reduced susceptibility to bending
- * Can hold dry for 3 days
- * Avoid long storage (>4 days)
- * Always use fresh solutions

IMPACT TO THE INDUSTRY

Proper retail display conditions extended vase life and quality of cut gerberas. Techniques to reduce or eliminate stem bending have been presented to overcome this major postharvest problem.

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