Research Update powered by FloraLife

Effects of FloraLife® Hydrate Hydrangea Wholesale Storage Duration on Consumer Vase Life

June 2023

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Introduction

The cut Hydrangea continues to be one of the most popular cut flowers, but one of the more challenging from a post-harvest perspective. The large showy flower heads and expansive foliage provide a unique aesthetic for designers and event planners but also present hydration challenges due to high rates of water loss through the leaves from transpiration.

FloraLife® Hydrate Hydrangea is a product specifically formulated to maximize hydration of this crop and reduce the variability in vase life. How many of you have seen a vase of showy hydrangea with one stem inadvertently wilting several days before all the other stems?

FloraLife® Hydrate Hydrangea can be a valuable tool for the grower. But, we also wanted to investigate its uses in the traditional wholesale channel and determine if the benefits of using it as a holding solution would carry-over to consumer vase-life when flowers are placed in vases filled with flower food solution.Therefore, we wanted to determine the effect of storage duration in FloraLife® Hydrate Hydrangea on the consumer vase-life experience.

Methods

Cut Hydrangea were received from a grower in Colombia. Individual stems were dry packed with individual plastic sleeves, and stem-end bags with a hydrating solution. Storage treatments were as follows in the flower cooler (3°C, 37.5°F):

1. FloraLife® Hydrate Hydrangea for 5-days
2. Dry storage for 1-day then ForaLife® Hydrate Hydrangea for 4-days
3. Dry storage for 2-days then FloraLife® Hydrate Hydrangea for 3-days
4. Dry storage for 3-days then FloraLife® Hydrate Hydrangea for 2-days
5. Dry storage for 4-days then FloraLife® Hydrate Hydrangea for 1-day
6. Dry storage for 5-days

For the FloraLife® Hydrate Hydrangea treatments (5ml/L), stems were cut just above stem end bags and individual plastic sleeves were left intact. Following the FloraLife® Hydrate Hydrangea treatments, stems were stripped to 1-2 sets of fully expanded leaves, re-cut, and placed in vases of FloraLife® Express Universal 300 flower food (16ml/L) for vase life evaluation under 12-hour fluorescent lighting (21°C, 70°F).

Data

- Average vase life (days)
- Average day of first flower death
- Day of first recorded flower death
- Variability of average day of first flower death

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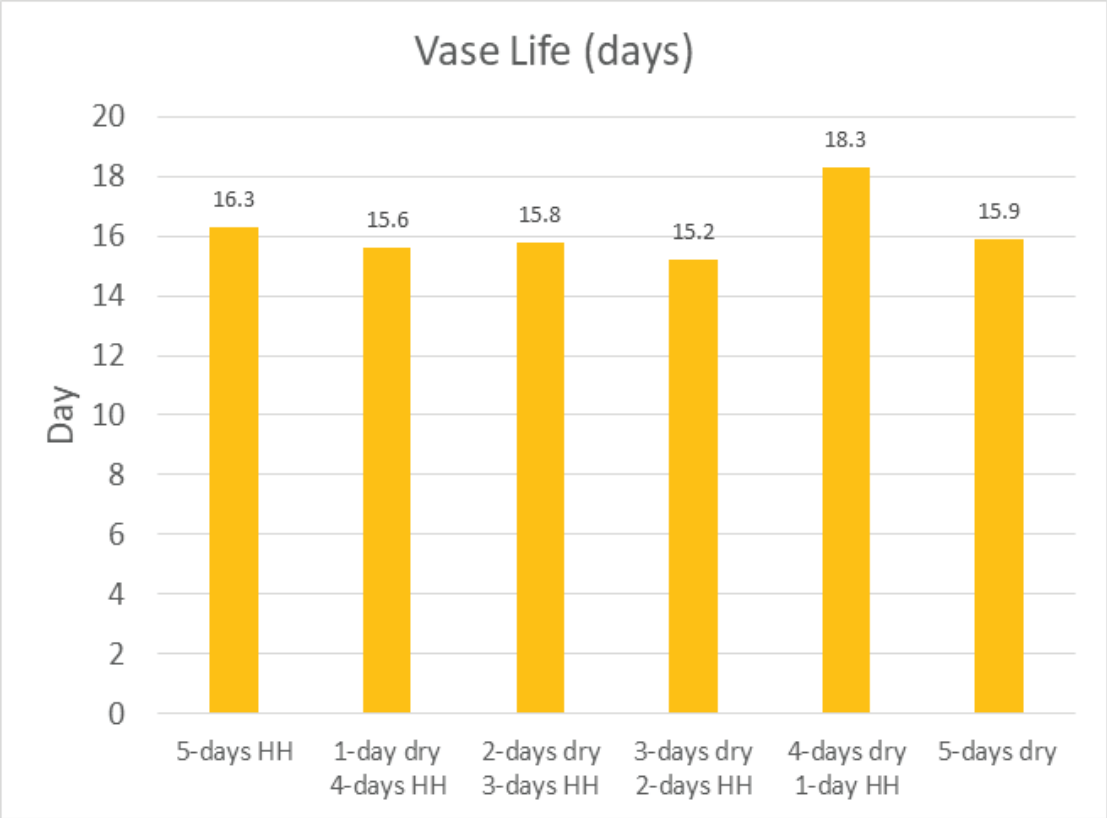
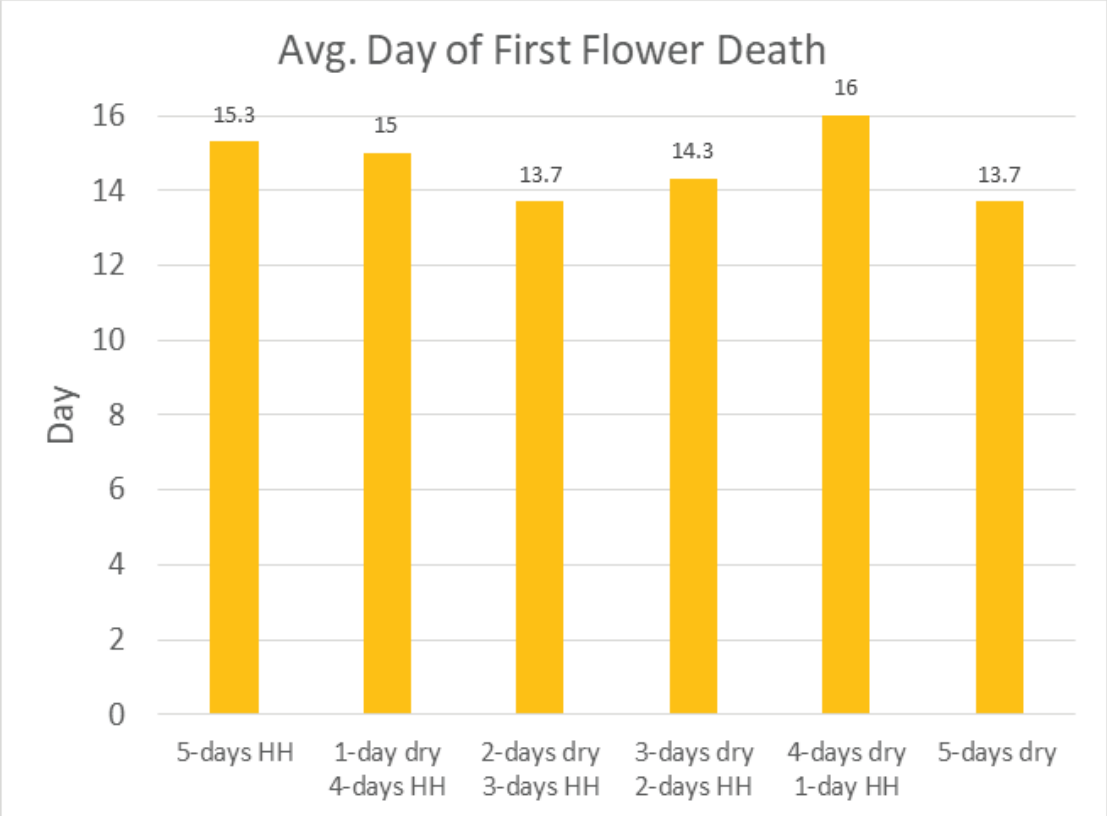
Results





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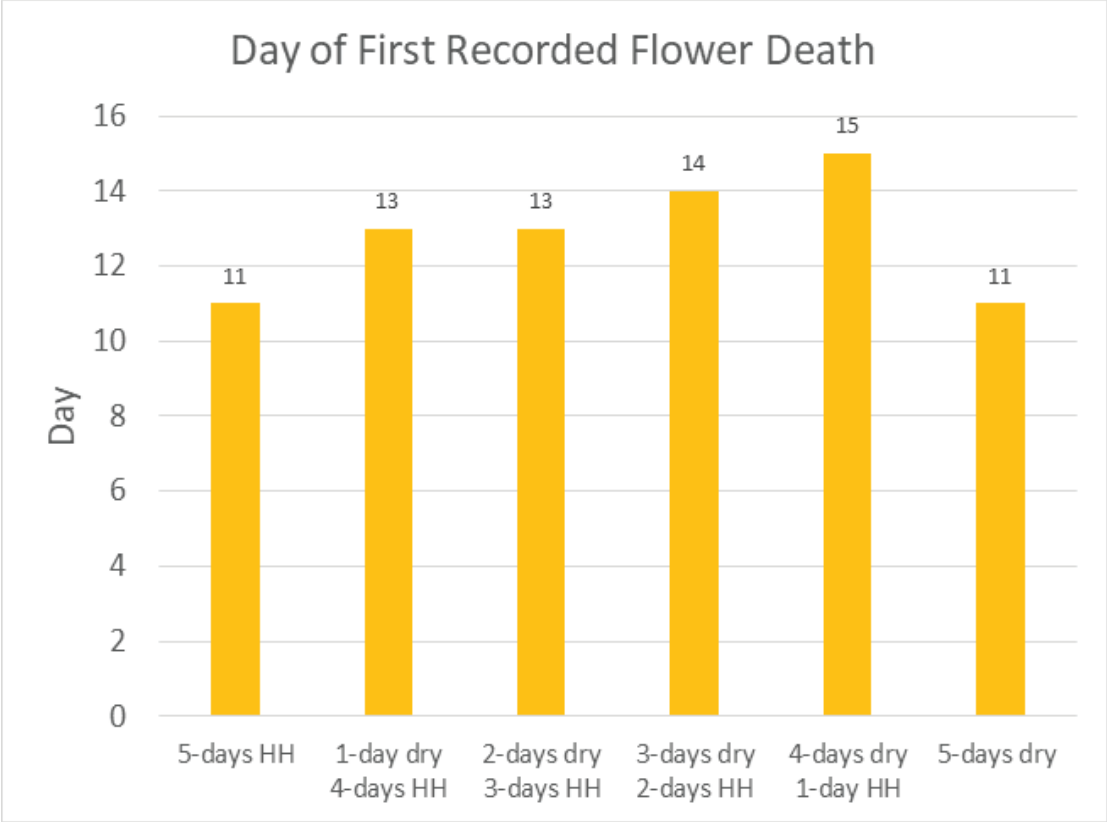

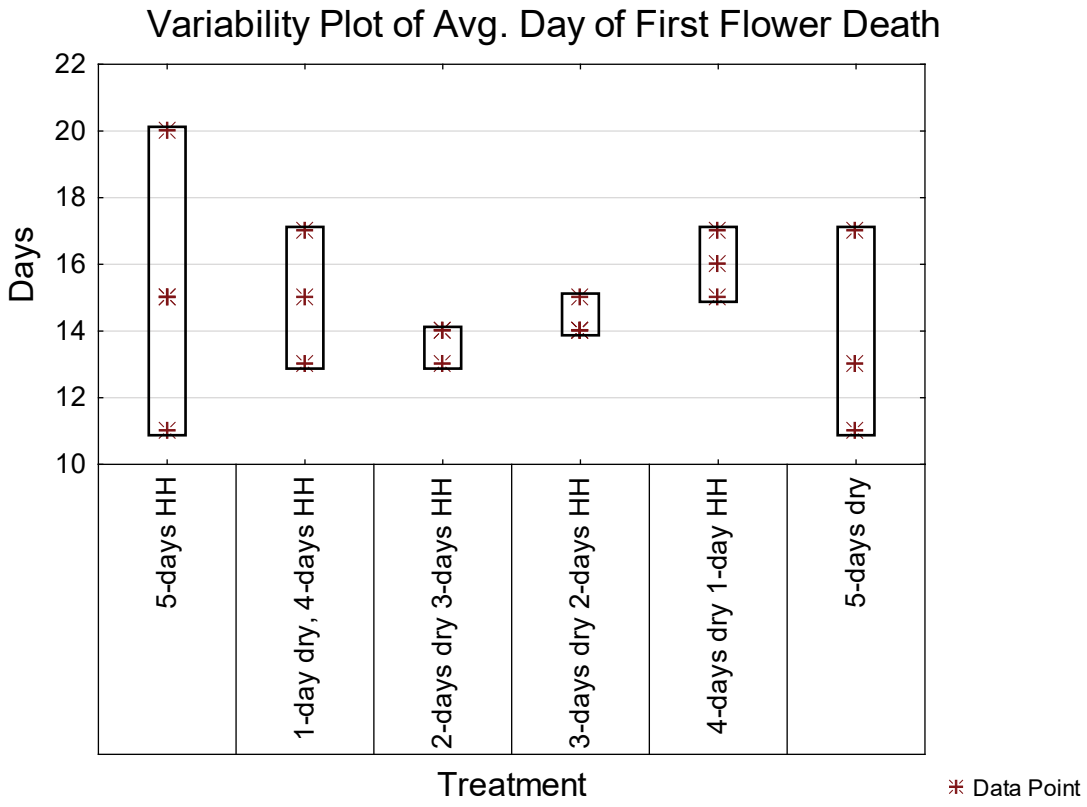

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Results

- Dry storage for 4 days followed by 1 day in FloraLife® Hydrate Hydration was the most effective treatment, providing a 2.4-day increase in average vase-life and a 2.3-day increase in the average day of first flower death compared to stems stored dry for 5-days.
- Extending storage in FloraLife® Hydrate Hydrangea from 2 to 5 days provided no significant increase in average vase life; however, all treatments except 3-days in FloraLife® Hydrate Hydrangea showed an increase in the average day until the first flower death compared to stems stored dry for 5 days.
- Dry storage for 4 days followed by 1 day in FloraLife® Hydrate Hydrangea showed a 4-day increase in the number of days until the first recorded flower death compared to dry storage for 5 days. Storage in FloraLife® Hydrate Hydrangea for 2, 3, and 4 days resulted in a 3 and 2-day increase in days until the first recorded flower death, while 5 days of storage in FloraLife® Hydrate Hydrangea provide no benefit.
- Interestingly the number of days until the first recorded flower death was reduced with increasing number of days of wet storage in FloraLife® Hydrate Hydrangea.
- Storage in FloraLife® Hydrate Hydrangea for 1, 2, 3, and 4 days reduced the variability of the average day of the first flower death compared to 5 days of dry storage, but this variability increased significantly after 5-days of storage in FloraLife® Hydrate Hydrangea.

Conclusions

The optimum storage treatment in this study was 4 days of dry storage followed by 1 day in FloraLife® Hydrate Hydrangea. This treatment provided a beneficial carry-over effect, increasing average vase life, average number of days until death of the first flower, and the number of days until the first recorded flower death. Longer storage periods (2, 3, or 4 days) in FloraLife® Hydrate Hydrangea reduced these benefits but still provided increases in the average number of days until the death of the first flower and the number of days until the first recorded flower death. Storage durations of 1, 2, 3, or 4 days in FloraLife® Hydrate Hydrangea reduced variability in the average days until the first flower death, but variability increased significantly after 5 days of wet storage.

We did not observe an increase in FloraLife® Hydrate Hydrangea solution uptake with increasing duration of dry storage. We speculate that longer wet storage may increase energy demands on the flower compared to dry storage. For this reason, storing hydrangeas dry then hydrating in FloraLife® Hydrate Hydrangea for approximately 24 hours prior to delivery may be optimum for providing the maximum carry-over effect on consumer vase life. We hope to learn more with further testing.

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Photos: Day 12 Consumer Vase Life Evaluation in FloraLife® Express 300 Universal

5 Days in FloraLife® Hydrate Hydrangea

1 Day Dry Storage,
4 Days in FloraLife® Hydrate Hydrangea

2-Days Dry Storage,
3-Days in FloraLife® Hydrate Hydrangea

3-Days Dry Storage,
2 Days in FloraLife® Hydrate Hydrangea

4-Days Dry Storage,
1 Day in FloraLife® Hydrate Hydrangea

5-Days Dry Storage