

Special Research Report #438: Postproduction

Postharvest Handling Procedures for Stock 'Vivas Blue'

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BACKGROUND

New cultivars and species of cut flowers are constantly required by the floricultural industry to maintain and increase customer interest. However, growers, wholesalers, and retailers are reluctant to handle new products due to the lack of postharvest information. The 'Vivas Blue' stock flower (Photo 1) is a new cultivar of the popular species that does not need a cold treatment for flower initiation. This study determined the optimum postharvest handling procedures for cut 'Vivas Blue' stock flowers.

Photo 1. Stock 'Vivas Blue'.



MATERIALS AND METHODS

Stock 'Vivas Blue' cut stems were subjected to a range of tests to determine: ethylene sensitivity, optimum cold storage duration, and the effects of pretreatments and pulses, vase solutions and substrates, and commercial preservatives.

Stems with double flowers were harvested when at least one floret was open (Photo 2). After sorting, flowers were placed in the appropriate treatment. After applying the treatments, stems were placed at $68 \pm 4^{\circ}\text{F}$ under approximately 200 ftc light for 12 hrs/day.

Photo 2. Stock 'Vivas Blue' at optimum stage for harvest.



Flowers were monitored daily to determine the end of the consumer vase life, when the "average consumer" would dispose of the flower. This was based on floret wilt and death; petal shatter and bluing; and stem softening, wilt, and collapse.

RESULTS

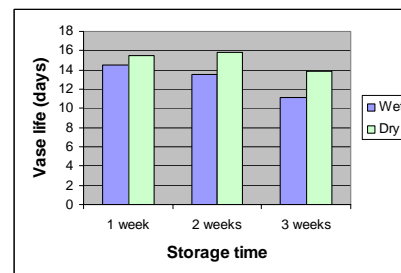
Ethylene sensitivity

Vase life was unaffected by 0.1 or 1 ppm exogenous ethylene with or without anti-ethylene agents, STS or 1-MCP. Also, there were no significant differences in the number of open buds, flower coloration, or criteria for termination.

Cold storage and duration

Vase life was longest when stems were held dry in a 35°F cooler for 2 weeks (Fig. 1). Wet storage reduced vase life.

Fig. 1. Effect of cold storage and duration on vase life of stock 'Vivas Blue'.



Pretreatments and storage

Hydrating and holding solution combinations did not affect vase life. However, stems held at 35°F had a significantly longer vase life (12.5 to 14.0 days) than stems that were not put in the cooler, (9.9 days).

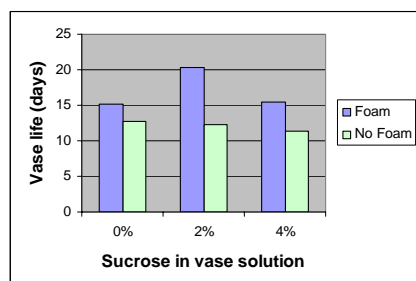
Sucrose pulses

When stems were pulsed for 23 hours in 0, 10, or 20% sucrose, no significant differences in vase life, number of buds opened, or termination criteria occurred.

Vase solutions and substrates

In contrast to most cut flowers, the use of floral foam (Oasis) increased the vase life of cut 'Vivas Blue' stems. Vase life was longest when a 2% solution of sucrose was used for the final holding solution (Fig. 2). Flower colored deepened for stems placed in a 2% sucrose solution with foam. As sucrose was increased from 0 to 4%, bud opening increased.

Fig. 2. Effect of vase solutions and substrates on vase life of stock 'Vivas Blue'.



Commercial preservatives

Vase life, number of buds open, and termination criteria of stock 'Vivas Blue' were not affected by: Floralife Hydraflor 100, Floralife Professional, Chrysal Professional 1, Chrysal Professional 2, or deionized water.

CONCLUSIONS

Stock 'Vivas Blue' is an excellent new cultivar of the popular cut flower. The Vivas series is available in a wide range of colors. Handling recommendations differ significantly from those of other stock cultivars. It does not appear to be sensitive to ethylene, so ethylene blockers are not necessary. Also, sucrose pulsing does not result in a longer vase life or higher quality flower.

Thus, the optimum handling procedures for stock 'Vivas Blue' are as follows:
(1) Hold stems dry in a 35°F for 4 to 7 days to condition the flowers.
(2) Do not hold stems at 35°F for more than 2 weeks.
(3) For display, stems should be placed in Oasis floral foam and with a final vase solution of 2% sucrose with a bactericide.

If these handling protocols are followed, it can be expected that stock 'Vivas Blue' will have a vase life of 10 to 13 days.

IMPACT TO THE INDUSTRY

Consumers and florists have long enjoyed the spicy clove scent of the stock flower. With the addition of 'Vivas Blue', consumers can choose from a wide range of colors. In addition, growers of 'Vivas Blue' will benefit from the short crop time and the fact that a cold treatment is not required for flower initiation.

Photo 3. Stock 'Vivas Blue' plants during production. Note that the use of support netting would prevent bending of the stems.



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