Floralife
The Care and Handling Experts®

Research Update

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The Importance of Hydration of Fresh Cut Flowers

Background

The water balance of a fresh cut flower determines its hydration status, turgidity and ultimately its flower vase life and freshness. Most of the water inside a fresh cut flower is lost through transpiration of the leaves. To replenish the cut flower, water needs to be absorbed, or taken up, through the bottom of the stem. When water uptake exceeds water loss, the flower and leaves then become turgid and hydrated. When water loss exceeds the water uptake, flowers become dehydrated, and wilted. Thus it is critical the internal stem vessels, or scientifically called xylem, are kept free of blockage for optimum hydration of the cut flower.

Several things can cause blockage in the stem vessels, such as trapped air, contamination from microbes, and natural compounds secreted by the plant to heal any cut or severed ends. Commercially formulated hydration solutions provide the necessary ingredients to overcome these factors and aid in quick flower hydration. They adjust the solution to a low pH for better liquid uptake, while at the same time cleaning the stem to flow freely. This simple hydration process prior to providing a flower food nutrient is extremely beneficial for flowers which are dry-shipped and will be subjected to dehydration.

Research

Experiments were conducted to test the effectiveness of two Floralife® hydration products on dry-shipped roses. Floralife Quick Dip® Instant Hydration Pretreatment is used to dip the cut ends of the flower stem and Floralife® Hydraflor® 100 Hydration Postharvest Treatment is an uptake treatment to hydrate for a longer duration before treating with flower food nutrients. In the experiments, dry-shipped, stressed roses were treated with the two different hydration products versus plain water before placing in flower food nutrient solutions for vase life observation.

Results

The photos below show the effect which Floralife® Hydraflor® 100 Postharvest Treatment had on the rose flowers when they were treated overnight in a cooler between 34 - 36° F, and how flowers treated only with plain water under the same conditions faired. The next day both treatments were placed into vases of Floralife Crystal Clear® Flower Food to provide nutrients and determine the vase life.

'Orlando' and 'Polo' Roses

Water → Floralife Crystal Clear® Flower Food

Floralife® Hydraflor® 100 → Floralife Crystal Clear® Flower Food

continued

The following photo shows the effects of Floralife Quick Dip® Instant Hydration Pretreatment Solution. Flowers were treated by dipping the cut flower stems into the solution for one second, then immediately moved into Floralife Crystal Clear® Flower Food nutrient solution. Photo was taken on day 2.

'Freedom' Roses

Water → Floralife Crystal Clear® Flower Food

Floralife Quick Dip® Instant Hydration Pretreatment → Floralife Crystal Clear® Flower Food

Conclusion

Both varieties of the fresh cut roses tested in this experiment greatly benefited from using hydration products. Whether the instant dip or uptake hydration method was used, the fresh cut flowers which were treated showed increased flower freshness and quality.

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