

Using Pageant Intrinsic Fungicide to Improve Drought Tolerance and Increase Shelf Life

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This is the third installment of a series of articles that features how Pageant Intrinsic fungicide can be applied to improve plant health. In this feature, I will be sharing results from trials indicating how Pageant can be used to improve drought tolerance and increase shelf life in certain situations.

Drought Tolerance Trials

In 2010 and 2011, I performed several trials looking at different application rates and intervals of applying Pageant Intrinsic fungicide to various ornamentals prior to intentionally providing a 'drought event' or withholding irrigation from them. The amount of time for the plants to exhibit wilt symptoms and their recovery times after irrigation was provided were recorded.

One of the trials was performed on several cultivars of pot mums. The mums were fully budded with the flowers just beginning to open at the time the treatments were applied. The plants were sprayed with a single Pageant application using either the rate of 8 oz per 100 gallons or 12 oz per 100 gallons. The mums were watered on the following day and then allowed to dry down until moderate to severe wilt symptoms were present.

The plants were grown inside a gutter-connect greenhouse in August. The outside high temperatures during the final three days of the drought stress was in the lower 90s outside (an additional 5 to 10 degrees warmer inside the greenhouses).

Drought and marketability ratings were assigned to each individual plant prior to, during, and following the drought event. The results were averaged together to provide the effectiveness of each treatment. In this trial, the time to severe wilting symptoms was increased by 6.0 to 13.5 hours; it took approximately 5 to 10% longer for Pageant treated pot mums to express severe wilt symptoms. Other drought trials on garden mums tested at more normal temperatures (upper 70s to lower 80s) resulted in significantly longer times for severe wilting symptoms to develop (see below).

Retail Benefits

Another trial with garden mums entailed treating the plants with Pageant Intrinsic fungicide (12 oz per 100 gallons) five days before they were shipped to a mass merchandiser. The objectives of this study were to observe any differences between treated and untreated plants after shipping, the effects on shelf life and plant quality over time and to note differences in required plant maintenance at the retail location (namely watering).

Two significant differences stood out during this retail study. The first being the amount of water required at the retail site. The average time for wilt symptoms to develop and irrigation to be applied on untreated plants was every two days; while garden mums treated with Pageant lasted seven days for wilt symptoms to develop prior to being watered. In the first 11 days at the retail location, the untreated plants were watered 5 times, whereas the Pageant treated plants were only irrigated twice.



Garden Mums

The plant on the left is untreated.

The plant on the right was treated with Pageant 19 days before the image was taken.

Pageant was effective at delaying flower senescence and increasing the shelf life of the treated plants in this trial.

The second observation worth noting was the delayed senescence and longer shelf life of one of the garden mum varieties. Two weeks after the plants were in the retail location, the untreated plants of the yellow cultivar (cultivar not specified on the tag) had a significant amount of brown, senescing flowers on them and were no longer marketable. The Pageant treated plants of this cultivar had no brown flowers and were still marketable 14 days after they were received by the store. Delayed senescence and decreased ethylene production are also some of the plant health benefits Pageant Intrinsic fungicide provides.

Drought Tolerance Summary

Every plant I've conducted drought trials with using Pageant Intrinsic fungicide has resulted in favorable outcomes. The first benefit obtained from Pageant applications was a delayed time for wilt symptoms to become present; this equates to less need for timely plant maintenance and more time the plants are marketable at retail sites. The second benefit I've observed in every trial was once a wilted plant is watered, it recovers faster and more fully following the moisture stress. Additionally, the use of Pageant prior shipping may delay flower senescence in some instances, which could significantly lengthen the marketing window of certain plants.

Based on my experiences, it is best to spray Pageant Intrinsic fungicide at 12 oz per 100 gallons at least one to two days before shipping. Making an application of Pageant Intrinsic fungicide prior to shipping may be a viable, cost effective option for growers to control late season diseases as well as decrease stresses during shipping and while plants are in retail locations. Reduced signs of water stress (flagged or wilted leaves) and a quicker, full recovery following moisture stress equates to a more consistent appearance, higher quality attributes, and an increased probability of plants being sold at retail garden centers.

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