

Floralife® **RESEARCH UPDATE**

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Ethylene Sensitivity of Different Rose Varieties

Background

Many types of fresh cut flowers are susceptible to damage by ethylene that can ultimately reduce their potential vase life. While roses are sensitive to ethylene damage, the degree of sensitivity seems to vary depending on the variety. It is important to identify ethylene-sensitive rose varieties and the potential impact of the exposure to ethylene on vase life of those varieties.

Research

In a recent study conducted by the Dr. Terril Nell research group at the University of Florida, 29 varieties of roses were evaluated for ethylene sensitivity. Flowers were obtained from farms in Colombia and Ecuador, and shipped to the Floriculture Postharvest Laboratory at the University of Florida within 5 to 7 days of harvest. In the laboratory, flowers were subjected to short-term ethylene exposure (1 ppm ethylene for 24 hours). Control (no ethylene) flowers were exposed to air for the same duration under identical conditions. After the ethylene treatment, flowers were placed in a postharvest evaluation room for observation and vase life determination.

Results



No Ethylene

Ethylene

Variety
'Clear Ocean'

(This Research Update is based on a research report by Dr. Andrew Macnish, Ria Leonard, Amy Alexander and Dr. Terril Nell, Department of Environmental Horticulture, University of Florida).



No Ethylene

Ethylene

Variety
'Osiana'

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Results, cont'd.

Effects of the exposure to ethylene (1 ppm for 24 hours) on the subsequent vase life of different rose varieties.

Variety	Vase Life with No Ethylene (days)	Vase Life With Ethylene (days)	% Change in Vase Life by Ethylene
'Amber'	11.8	8.7	-27%
'Big Fun'	6.4	4.1	-36%
'Bloody Mary'	13.3	10.8	-19%
'Brooke'	7.2	5.9	-18%
'Carrousel'	15.6	13.6	-13%
'Charlotte'	10.0	7.2	-28%
'Clear Ocean'	12.5	10.3	-18%
'Engagement'	9.0	7.4	-18%
'Erin'	17.7	9.3	-47%
'French Vanilla'	8.5	6.4	-25%
'Jade'	14.6	11.7	-20%
'Lina'	4.5	3.6	-20%
'Lindsey'	4.5	3.7	-18%
'N-Joy'	7.2	4.1	-43%
'Osiana'	8.0	1.8	-78%
'Peach Sherbert'	9.6	5.7	-41%
'Pekcoubo'	9.9	8.0	-19%
'Rubor'	5.0	2.4	-52%
'Verdi'	18.8	14.4	-23%

The symptoms of ethylene damage in these cultivars included poor opening, petal shatter and wilting.

Conclusion

Short-term exposure to ethylene reduced the potential vase life of cut roses from 13 to 72% depending on the variety. Research has shown that when EthylBloc® technology is used with ethylene sensitive rose varieties that it prevents this ethylene damage and extends the life and usefulness of these flowers. Additional results will be presented in forthcoming Research Updates.

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