

# Roses and Ethylene: Literature Summary

## Introduction

For years roses have been cultivated and bred for certain characteristics like color and petal count. Often these characteristics are bred for while others like scent are overlooked. The contemporary results are roses with no scent and no thorns that come in a rainbow of colors. One characteristic that has only recently been researched is ethylene sensitivity in roses.

Ethylene has long since been known to wreak havoc in the postharvest world. While we know that carnations will respond negatively to ethylene, we also know that roses are ethylene sensitive. Below is a brief literature summary of research that has been done on cut roses.



Different cultivars can and sometimes do respond differently to ethylene and EthylBloc™ Technology. Common symptoms include improper opening, bent neck, shorter vase life, leaf abscission and petal fall. The photograph to the right shows 'Laguna' roses that have been exposed to ethylene and either treated or not with EthylBloc™ Technology.

- EthylBloc™ Technology + EthylBloc™ Technology  
+ Ethylene + Ethylene

Cut Flower	Ethylene Symptom	Oppm EthylBloc % of flowers affected	1 ppm EthylBloc % of flowers affected
Rose 'Tineke'	Deformed opening	100	0
Rose 'Cara Mia'	Deformed opening	100	0
Rose 'Sonia'	Blooms falling off	100	0

**Table 1:** Effect of 1 ppm EthylBloc™ Technology treatment during dry storage (20 hours at 4° C) on cut roses exposed to 1 ppm ethylene for 2.5 days. (Reid et. al 1987)

The table above shows the benefits of EthylBloc™ Technology treatment on various cultivars of rose. It also shows some common symptoms of ethylene damage like deformed opening and petal drop. Each cultivar benefited greatly from EthylBloc™ Technology treatment.

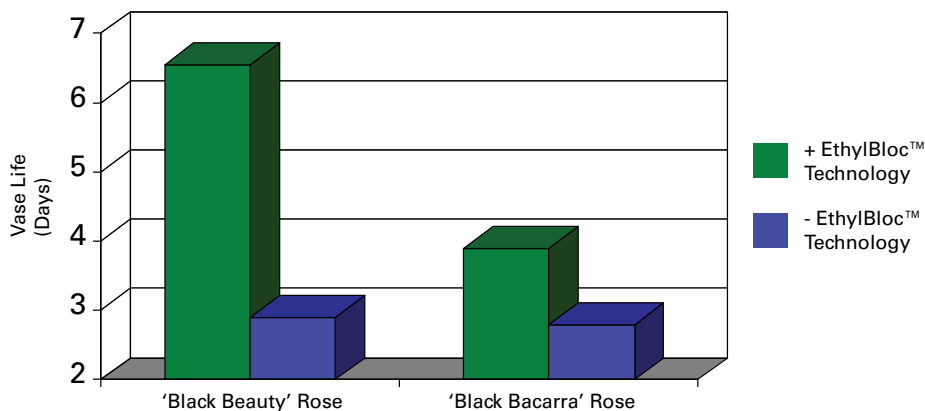


EthylBloc™ Technology Truck Treatment

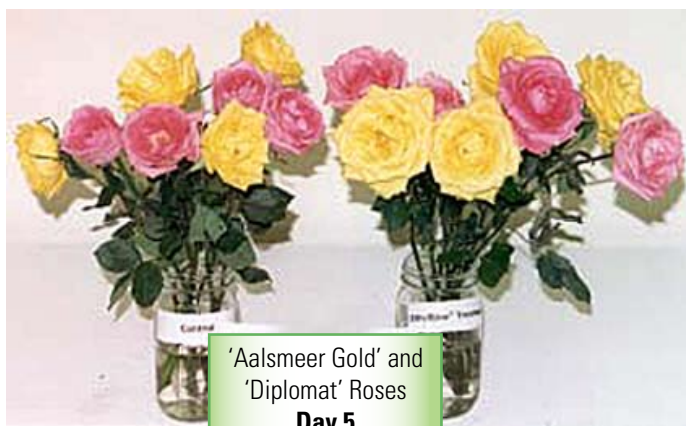


EthylBloc™ Sachet

**Effects of EthylBloc™ Technology on Vase Life of two rose cultivars.**



The graph shows data from an experiment performed in the Postharvest laboratory at Floralife, Inc. Both rose cultivars responded positively to EthylBloc™ Technology treatment.



Control

EthylBloc™ Technology

The photograph shows both 'Aalsmeer Gold' and 'Diplomat' roses either treated or untreated with EthylBloc™ Technology.

**Discussion**

There are many other available research articles on this topic. There are also many other rose cultivars that have yet to be tested for ethylene sensitivity. It is important to familiarize yourself with rose cultivar differences and to identify symptoms of ethylene damage like petal and foliage fall so you will be more able to care for your fresh cut roses.

**Sources**

Sisler, E.C. and Serek, M. 1999. New Development in Ethylene Control - Compounds Interacting with the ethylene Receptor. *Acta Horticulturae* 543:33-40.

Staby, G. 2003. Specific Crop Information. [www.chainoflifenet.org](http://www.chainoflifenet.org) Perishables Research Organization.

Reid, Michael S. et al. 1989. Ethylene and Silver Thiosulfate Influence Opening of Cut Roses Flowers. *T. Amer. Soc. Hort. SC 114 (3): 436-440.*

Reid, Michael S. et.al. 1987. Development of Practical Methods for Applying 1-MCP. Progress Final Report.

EthylBloc is a registered trademark of the Dow AgroSciences Company. Not for use on food or food crops.