

2009 National Floriculture Career Development Event

Problem Five

Assume you manage a wholesale cut flower business and a customer is having problems with pedal discoloration and wilt in 'Calypso' orchids. The customer experiences pedal discoloration and wilt within a day after opening a new box of orchids.

Which of the following sets of recommendations would you provide your customer?

- A.
 - 1. Store the orchids at 38-40° F and at 90-95% humidity
 - 2. Avoid storing corsages in tightly closed bags
 - 3. Cut stems and treat with hydration or flower food solution
 - 4. Treat with anti-ethylene chemicals such as EthylBloc™ (1-MCP) or silver thiosulfate
- B.
 - 1. Store the orchids at 55-60° F and at 90-95% humidity
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 - 1. Store the orchids at 55-60° F and at 80-85% humidity
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Care and Handling

NAB ORCHID THIEVES THAT STEAL DAYS OF VASE LIFE

THE PATIENT Cut Orchids
THE DOCS Terril A. Nell, Ph.D.,
 Ria T. Leonard, University of Florida
THE SYMPTOMS Petal discoloration

> Orchids are prized for their exquisite beauty and remarkably long vase life. Many cultivars will last at least two weeks and many much longer when handled properly. But there are a couple of enemies lurking that will spoil these cut flowers before they even get to your customers — unless you're on alert.

Examination

A day after we opened a box of the gorgeous orchid variety 'Calypso' depicted in the left side of the photograph, the petals began to discolor and wilt. In other varieties, the buds yellowed, dropped and some refused to open. It's a good thing no consumer saw this rapid decline — and even better that these problems can easily be prevented.

The Diagnosis

It took just one day for cold temperatures to do damage. Although the orchid on the left was held for four days at 38 F, the petals became discolored within 24 hours after removal. The flower on the

right was stored properly at 58 F. Other symptoms of cold injury can be a blackening and wilting of petals.

Although cold was the culprit for the injury shown here on 'Calypso', ethylene can also cause petal wilting and other chilling-injury symptoms. Exposure to ethylene can also cause bud and flower abscission, bud yellowing and premature flower death. Sensitivity to ethylene varies among cultivars. Some genera, such as cymbidium and phalaenopsis, are highly sensitive; while some dendrobiums tend to be less sensitive but in no way immune to ethylene damage.

The Cures

Most orchids are sensitive to temperatures below 50 to 55. Although some orchid cultivars are tolerant to cold temperatures, it is imperative that you determine this fact from your supplier or distributor before even thinking of keeping them in your cooler. If you are not sure, err on the side of caution and keep with your tropical plants, between 55 and 60 F, and at 90 to 95 percent relative humidity. If feasible, avoid storing altogether and instead maintain at room temperature and get them in the hands of your customers as soon as possible.

It should be standard practice to treat orchids with anti-ethylene chemicals such as EthylBloc™ (1-MCP) or silver thiosulfate. Be sure to ask your supplier before purchasing that sensitive varieties have been adequately pretreated to protect from ethylene injury.

Preventative Measures

Avoiding cold temperatures is a simple, easy way to preserve the beauty of orchids. And while not as easy to detect as a frigid room, one filled with ethylene can also be avoided by taking a few

particular precautions. Keep them away from automobile and truck exhaust, cigarette smoke, decaying plant material and ripening fruits and vegetables, as ethylene is a byproduct of all these. Also, avoid storing corsages in tightly closed bags to eliminate ethylene build up.

Orchids have commonly traveled from faraway places such as Hawaii and Thailand and should be processed immediately. Upon arrival, you should unpack, cut stems and place in a hydration or flower food solution. Handle them gently and take special care not to touch, bruise or damage the pollen cap (anthers). Damage to the pollen cap can mimic pollination and cause a natural surge in ethylene production. If holding them in buckets, avoid overcrowding so flowers don't get tangled or damaged. Although it is commonly recommended to submerge stems and blooms underwater, this practice has been found to either have no effect or can be detrimental, especially on oncidium, arachnids and renanthera.

Use cut flower food in cut orchid arrangements and corsages. This will help extend vase life, by keeping the water clean and reducing microbial contamination. Cut orchids prefer locations with good air movement and high humidity that are away from direct sunlight, heat sources and drafts. Be sure to tell your customers this as well, so they can enjoy their orchids for as long as possible. Don't forget the last important step: Give your customers flower food packets to prolong vase life. 🌺

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WILT GUILT You could have prevented this 'Calypso' collapse seen on the left by protecting the orchid variety from cold temperatures.

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