To process flowers, cut off the lowest 1 to 2 inches of the stem. This portion of the stem is likely to be clogged with debris, microorganisms or air bubbles. It is okay to cut stems in air, but cutting underwater can increase initial hydration. You must, however, be certain to use clean water! Re-used water contains dirt, sap, and microorganisms that can get taken up by the stems and block water uptake. This greatly negates the positive effect of underwater cutting and can result in flowers that die prematurely.

Fig. 1. Vase life of cut roses when cut dry or cut in clean (0) versus dirty (300 or 600 times) water.

**REHYDRATION**
In most cases, flowers need to be hydrated upon arrival. Many commercial hydration solutions are available. Be certain to follow mixing directions and maintain the flowers in the solution for the recommended time.

Many florists believe that warmer air helps flowers absorb water more quickly and, thus, place flowers outside the cooler after processing. In reality, flowers should be rehydrated in the cooler. Flowers rapidly absorb water in a cooler and, in addition, they loose less water to transpiration. The result is a quicker net gain of water for flowers hydrated in the cooler.

Some florists burn, boil, or smash stems in the belief that this assists rehydration. In reality, none of these practices work. Although hot, even boiling water can increase initial water uptake, research shows that it has no significant effect on vase life.

Furthermore, hot water kills stem tissue, providing a source for microbial organisms. Thus, what is the bottom line? For best results, use a cool rehydration solution and place the flowers in the cooler.

**FLOWER FOOD**
After flowers are cut and rehydrated, they should be placed in flower food until sold. Flowers placed in
flower foods open better and last longer than those stored in plain water. An injection system should be used to properly mix the flower food.

Fig. 2. Flower opening of the cut rose ‘Valentino’ is in floral food as compared to water.

Maintaining flowers in flower food is one of the most important steps for a florist. It maximizes quality and longevity.

ETHYLENE
Ethylene is a colorless, odorless gas that can negatively affect fresh cut flowers. Wilting petals, dropped buds and yellowing leaves are symptoms of ethylene damage.

Some sources of ethylene are: dead and decaying flowers, vehicle exhaust, and ripening fruit. To prevent ethylene damage, idling delivery trucks must not be near open doors. Also, keep all areas free of dead flower parts and keep fruit out of coolers and away from flowers. All ethylene sensitive flowers should be treated with anti-ethylene materials, preferably, by the grower or wholesaler.

Ethylene causes premature flower death in delphiniums and other sensitive species.

IMPACT TO THE INDUSTRY
Proper floral care takes time and dedication. However, in the end, well cared for flowers produce satisfied consumers.

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KEEP IT CLEAN AND COOL
Cleanliness and temperature are important aspects of floral care. Reduce stem blockage and microbial infection by keeping all buckets, tools, cutting tanks, and coolers clean. Also, always monitor cooler temperatures. All, but tropical flowers, should be stored between 33° and 35° F. High temperatures will decrease vase life and reduce quality. Storage time should be kept to a minimum.

CONCLUSIONS
Proper care will maximize fresh cut flower quality and longevity.

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