Love endures, but Valentine's Day roses are another story

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Photo: Greg Grieco

Each Valentine's Day, sweethearts search for the perfect gift to represent their enduring affection. Shouldering the burden of embodying all this emotion is a delicate, finite bloom -- the rose. Ironically, this ages-old symbol of undying love has a limited lifespan. But Penn State researchers know how to help the rose cheat its inevitable demise -- at least for a few days.

Ensuring a Valentine darling has enough time to enjoy his or her roses in all their glory is a race against time. Although the cut-flower industry tries to expedite the process, by the time cut roses are presented as Valentine's Day tokens, they already have squandered some of the freshest days of their lives while in transit.

"Most cut roses sold in the United States are imported from places like

Columbia and Ecuador in South and Central America because of the low labor costs and moderate climate," said Robert Berghage, Penn State associate professor of horticulture.

Berghage, a cut-flower industry expert, said American florists can procure high-quality roses more cost-effectively by buying imports. In fact, very few of the 180 million roses produced for Valentine's Day in 2005 were grown domestically.

"United States' producers -- especially those in the Northeast with our short days, low light, high heating costs and high labor costs -- just cannot compete," said Berghage. "This trend is obvious if you look at the USDA statistics: Imports in 2005 accounted for 64 percent of fresh-cut flowers in the United States, up from 58 percent in 2002 and 40 percent in 1989. And the number-one import is roses."

As fresh as most roses might appear in the florist's refrigerated case, they likely have been severed from their mother bush for at least four to seven days by that point -- equal to about 20 to 60 percent of their total lifespan -- depending on place of origin. To sustain their beauty, time and hydration are of the essence.

"It's possible roses might have been cut even earlier than four to seven days previous, especially on Valentine's Day -- the number-one holiday for florists -- when there is such a big market all at once," said Kathleen Brown, Penn State professor of postharvest physiology. "So, it's good to get them back into water as soon as possible."

Brown said the curious little packet of plant food that comes with the bouquet can be the deciding factor in the roses' lifespan. The packet contains a life-enhancing cocktail of sorts: some kind of sugar, an acidifier such as citric acid and an antimicrobial agent.

"The sugar provides 'food' for energy and also helps the flower continue to take up water over the long term and delays the decline of the flower," said Brown. "The acidifier makes it easier for the solution to go up the stem and keeps the flowers hydrated. The antimicrobial reduces the growth of microorganisms in the vase solution."

Brown said microorganisms are a problem because they block up the stem and prevent the flower from getting enough water. She recommends the following steps to extend the life of your roses:

-- Prepare the vase solution with the packet of flower food and warm water. "The amount they give you is about enough for a quart of water. If your vase doesn't hold that much, use proportionately less of the packet," said Brown. "Also make sure your vase is clean to delay the growth of microorganisms. Let the flower preservative dissolve."

-- Re-cut the flower stems about one inch with a sharp knife. "This takes off the part of the stem where air bubbles may be trapped in the water-conducting vessels," she explained. "Also, remove any leaves that will be below the water line in the vase. As you cut each stem, put it in the vase quickly so no more air gets in the stem. Some people cut at an angle so the base of the stem does not seal to the bottom of the vase."

-- Keep the roses in a cool place. "Do not display them on top of a television or in the sun. Warmth should really be avoided."

-- Every few days, replace the water in the vase. "If you still have some flower preservative, you can add that, but otherwise water is fine at this stage," Brown continueed. "If the solution gets cloudy, that means microorganisms are growing in it, and you definitely need to change the water. If the flowers still look good, you can recut them again to take off the part with germs inside the stem."

At the very least, keep the water uptake going, said Brown.

"Usually, the limiting factor for roses is water," Brown explained. "If the rose is not getting enough water, it will let you know. Bent neck is the common sign that water uptake is not adequate, and the upper stem bends over because it is the weakest part."

Some people will try to dry the roses by hanging them upside down before they are too far gone or will preserve them by pressing them, but the sad fact is that every rose must eventually fade. It is the sentiment that remains.

Source: Penn State