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How to give cut roses a longer vase life

STABY

The "Queen of Flowers" needs royal treatment to ensure a maximum lifespan after being cut from the rose plant. Here are some tips designed to make that task easier for florists and consumers.

by Jean Adamczak

When a rose is cut from the plant it is severed from its life support system. As soon as the cut is made, the rose is in trouble.

The components of a rose's life support system are nutrients, sugar, cool temperatures, anti-aging compounds, and water, according to Roses, Inc., Haslett, Mich. Since they are all carried into the rose by water, all of these ingredients depend on a continuous and ample supply of water, Roses, Inc., said.

"Research has shown that a molecule of water can move from the base of a 24-inch cut rose to the petals in 30 seconds or less," the organization reported. "The cells in the stem of a rose which carry the water are like a handful of soda straws. As long as the straws are in a glass of water, you can draw water up through the stem. Take them out of the water while sucking on the straw and you draw up air."

A rose functions in much the same way, except that the cells in the rose stem have end plates or small screens that allow water to pass, but block the passage of air. A small air bubble is formed and trapped at the end of the rose stem when it's cut from the plant. The result is decreased vase life for the rose.

Premature wilting

Air trapped in the rose stem is the primary cause of premature wilting in fresh cut roses, Roses, Inc., reported. Each time a rose is handled out of water from grower to wholesaler to retailer to consumer, the opportunity exists for trapping air in the stem.

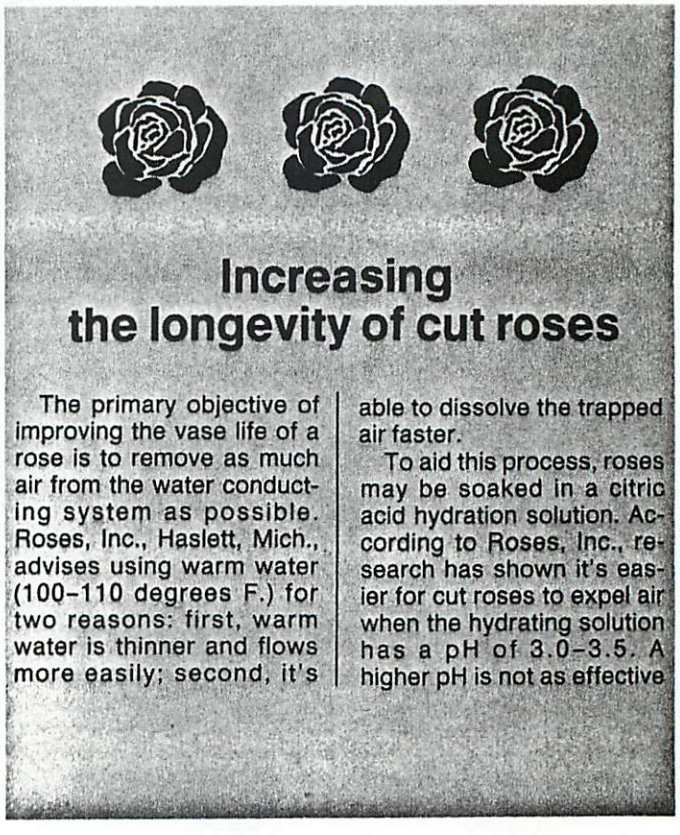
When the base of the stem is blocked by air, water cannot get up the stem, even if you return the stem to water, Roses, Inc., cautioned. "In short, the rose is very near its life support system, but cannot get to it."

A rose's vase life also decreases when sugars, which move from the leaves down to the roots, continue to flow after a rose has been cut from the mother plant. With no place else to go, these sugars move across the cut surface of the stem and are drawn up into the water-conducting cells where they crystallize and form blockages, according to Roses, Inc. This is particularly true if air has moved into these cells first.

In either case, the life-giving supply of water is cut off or seriously reduced and the rose may wilt and die, even if placed in water. Fortunately, both air and sugar blockage of the rose stem are restricted to the first one-half inch of the stem from the base cut. Simply recutting the base of the stem removes the blockage and gives the rose a chance to reconnect to its life support system.

To avoid letting the base of the rose stem gulp in another air bubble when the new cut is made, Roses, Inc., recommends the recutting procedure take place under water. Simply by holding the stem end under running water when the cut is made, or by making the fresh cut while the stem is under water, florists can ensure a water supply to the rose. Roses, Inc., reminds florists to always use a sharp cutting blade when trimming stems. Roses should be recut under water if they are received dry or are out of water for more than 15 minutes, Roses, Inc., advised.

Once the cut is made under water, a small droplet of water hangs on the cut end so the stem can be safely



Increasing the longevity of cut roses

The primary objective of improving the vase life of a rose is to remove as much air from the water conducting system as possible. Roses, Inc., Haslett, Mich., advises using warm water (100–110 degrees F.) for two reasons: first, warm water is thinner and flows more easily; second, it's able to dissolve the trapped air faster.

To aid this process, roses may be soaked in a citric acid hydration solution. According to Roses, Inc., research has shown it's easier for cut roses to expel air when the hydrating solution has a pH of 3.0–3.5. A higher pH is not as effective

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moved to a container filled with water and cut flower preservative. Care must be taken that the cut end of the stem doesn't dry off before it reaches the new water supply. Equipment is commercially available that will cut whole bunches of roses under water at the same time, according to Roses, Inc.

In addition to decreased vase life, florists also have to worry about a rose wilting. Occasionally, a rose will develop a weak stem just below the bud, causing the bloom to tip over or wilt. This wilting is not a sign that the rose is old, but indicates that air is trapped in the stem and the preservative solution cannot properly flow up the stem.

To remedy this, Roses, Inc., suggests removing the bent bloom from the others. While holding the stem under water, cut about one inch from the stem's base. Then submerge the entire flower in warm water (100–110 degrees F.) for about 20 minutes. Be sure to straighten out the angle of the bloom while it's under water or it will revive with a bent neck. For long-stemmed roses, a couple of inches of water in the bottom of a shallow pan or even in a bathtub will do the trick.□

and a lower pH solution is very acidic and can cause tissue damage. All prepared solutions should be a minimum of 10–12 inches deep to enhance air removal.

Mixing the solution

Preparing citric acid hydration solution for roses involves two steps.

Step 1: Convert dry citric acid granules to a liquid by adding one ounce of citric acid granules to 2.5 quarts of tap water.

Step 2: Add one ounce of the citric acid solution prepared in Step 1, to one gallon of tap water until the pH level of the water drops to a range between 3.0 and 3.5 (3.5 to 4.0 if deionized water is used). The pH level can be measured with litmus paper sensitive to this range. The number of ounces required may vary dramatically, depending on water conditions in your area of the country.

Once this determination is made, the recipe can be easily expanded. For example, if you want to make four gallon volumes and it takes eight ounces of citric acid solution per gallon of tap water to bring the pH down to 3.0, then simply add 32 ounces of solution (four gallons times eight ounces) to four gallons of water.

After the citric acid hydration solution is prepared and the roses have been properly cleaned and cut under water, soak the roses for one hour in at least 10–12 inches of solution at room temperature. Then transfer the roses to buckets containing rose preservative solution that has been carefully prepared in accordance with the instructions on the preservative's label. The roses should then be placed in a cooler with a temperature of 34 degrees F., and a relative humidity of 80 percent.

If the roses are particularly tight, soak them an extra half-hour in the hydration solution. If a rose has wilted, place it in the solution until turgid. Finally, if open roses are needed for funeral or wedding work, soak them longer and hold them at room temperature instead of in the cooler.

Change the hydration solution at least twice a week as it's inexpensive and tends to become dirty from stem debris. Roses in solution pull water up the stem so hard that any particles of debris in the water are apt to be drawn into the stem and ultimately block the water flow, thus defeating the whole purpose of the solution.

Equipment

The equipment required for preparation of citric acid hydration solution is simple.

- A postal scale for weighing the granulated citric acid.
- A graduated cup for measuring the liquid solution.
- Industrial grade citric acid, NOT U.S. pharmaceutical grade, which is more expensive.
- Litmus paper sensitive to 3.0 to 4.0 pH.
- Five-gallon plastic buckets. Plastic is preferred over metal buckets for use with flowers because they hold larger volumes of hydrating solution, are easier to clean and don't cause any reactions with the materials mixed in them.

(Note: FLORIST wishes to thank Roses, Inc., for supplying the above information.) —J.A.