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Extending the Freshness of Cut Flowers at Home

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For centuries, gardeners have brought cut flowers indoors where their natural beauty and pleasant aroma delight the senses. In recent times, people have relied less on homegrown cut flowers and turned increasingly to bouquets purchased from florists and other retail outlets. The variety of available flowers seems limitless, although some exotic blooms can be quite expensive. Here are some suggestions to help you maintain the freshness of your cut flowers, extend your enjoyment of the flowers, and stretch your flower-buying dollar a little farther.

The container. Whether you display your flowers in a cut crystal vase or a mayonnaise jar, the container you choose should be clean. Wash it with hot soapy water to remove debris and eliminate the bacteria and fungi that contribute to decomposition of flower stems. A bottle brush may be helpful for reaching into thin-necked bud vases. If there are some crevices that you cannot completely clean, you may wish to disinfect the container by soaking it briefly in a solution of one part household bleach in ten parts water. After bleaching, thoroughly rinse the container.

If you plan to use florist foam or another arranging aid such as Oasis, be sure to soak it first in water or in your vase solution (see below) until it sinks. When dry, these products tend to float up to the surface, disrupting the floral arrangement. Be sure to use a new, clean piece of foam to minimize the number of microorganisms in the container.

The vase solution. Softened water contains sodium, so you should avoid using it for cut flowers. If you live in an area with hard water, you may wish to use demineralized water, available at most supermarkets. Do not use aspirin, vinegar, or diet sodas in the vase solution. They will not contribute to the longevity of your floral arrangement and may, in fact, decrease it.

Many purchased bouquets come with a small packet of flower food and/or preservative. Be sure to follow the instructions on the packet for mixing and use. Each packet is usually sufficient to treat only one quart of water; you will need more vase solution if you are using a large vase. If your flowers are fresh from the garden or if no preservative accompanies them, you can use one of the following mixtures to supply food for the flowers and enough acidity to deter microbial activity.

1. *Lemon-lime soda mixture.* Mix 1 part regular lemon-lime soda (not diet soda) with 3 parts warm water. Add ¼ teaspoon of household bleach per quart of this solution.
2. *Lemon juice mixture.* Mix 2 tablespoons of lemon juice (fresh or bottled), 1 tablespoon of sugar, and ¼ teaspoon of bleach per quart of warm water.

Check the level of the vase solution in your container daily, and replenish it when necessary as it evaporates and the flowers use it up. Add an additional ¼ teaspoonful of bleach per quart to the container every three or four days. If the vase solution becomes cloudy or smells bad (signs of bacterial activity), replace it completely and then rinse and trim the flower stems before putting them back into the container.

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Selecting the flowers. If you use homegrown flowers, they should be cut early in the morning when they are least likely to be wilted. The best stage of development for harvesting flowers depends on the species, intended use, and season of the year. As a general rule, select buds that are just beginning to open or flowers with upward-curved petals and tight centers. Those with petals turned downward have passed their prime and will not last as long in your arrangement.

When exposed to air for even a short time, the cut ends of the stems will dry and seal off. This will prevent a continuous flow of water to the blossoms through the water-conducting tubes *(xylem)* in the stem, and will result in rapid wilting of the flowers. If you cut your own flowers, take a bucket of tepid water along with you into the garden and place the stems in it as you cut them. If you purchase flowers, you will need to trim the stems when you get them home in order to allow them to take up water again. Use a sharp knife or scissors to cut off at least ½ inch of the stems, under water, to expose a fresh surface at the base. You can do this by holding the stems either in a bowl of water or under running tapwater as you cut them.

Conditioning the flowers. When you condition fresh cut flowers before placing them in an arrangement, you significantly increase their vase life. The process fully hydrates the flowers and allows time for the vase solution to saturate the plant tissue. To condition flowers, place the freshly cut stems loosely in a deep bucket of warm water (90° to 100°F [32.2° to 37.8°C]), then put the bucket in a very cool location for several hours before you arrange the flowers. Ideally, flowers (with exceptions as noted below) should be conditioned at 32° to 35°F (0° to 1.7°C) and 90 to 95% relative humidity, although it may be difficult to provide this environment at home.

Before you arrange the flowers, remove any leaves, thorns, or excessive foliage from the portion of the stems that will be below the water line in the vase. If left in place, this submerged plant material may decay and shorten the life of the cut flowers. Fill your container with fresh water or vase solution, recut the flower stems under water, and quickly place them in your arrangement. Cut the stems at an angle, not straight across, to increase the water-absorbing surface area.

Do not crush or burn the stems, as this will damage the xylem tubes and interfere with their water-conducting ability. If the flower stems ooze a milky sap when cut (for example, poinsettias and poppies), immerse the bottom two inches of the stems in boiling water for about ten seconds to keep the xylem tubes from clogging.

The arrangement. Cut flowers will last longer if kept cool, and most will tolerate temperatures as low as 32°F (0°C). Notable exceptions are gladiolus, bird-of-paradise, protea, some orchids, and tropical species such as anthurium and ginger, which should be kept no cooler than 50°F (10°C). Avoid placing your arrangement in direct sunlight, near heater vents or the fireplace, or on top of a heat-generating appliance such as a television set. When not on display, you can put cut flowers in an unheated room or garage, or even in the refrigerator (not the freezer) overnight.

Fresh fruits and vegetables produce ethylene gas, a naturally occurring ripening agent. When fresh produce such as apples, bananas, or carrots are included in a floral arrangement, the ethylene gas they emit may drastically shorten the life of many of the cut flowers.

FOR MORE INFORMATION

You'll find detailed information on many aspects of home gardening in these titles and in other publications, slide sets, CD-ROMs, and videos from UC ANR:

Healthy Roses, publication 21589
California Master Gardener Handbook, publication 3382
Postharvest Care and Handling of Cut Flowers, slide set 84/115

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