

IS YOUR WATER KILLING YOUR FLOWERS?

> Have you checked the acidity or alkalinity (pH) and salt content (EC) of your water lately? If not, it could be affecting how long your flowers last. The dogma for years was that bucket and vase water had to have a low pH and a low EC for long-lasting flowers. The first part appears to be correct for most flowers, but we may have had the second part wrong for many cuts.

We tested water with a broad range of salt levels and pHs on callas, carnations, chrysanthemums, hydrangeas, roses, snapdragons, sunflowers and zinnias. Commercial flower foods were included in the salt experiments.

Identifying the Culprits

Vase life went down when the water pH went up for roses, chrysanthemums, hydrangeas and sunflowers. Callas, carnations, snapdragons and zinnias were not affected by water pH.

Vase life for roses, carnations, chrysanthemums, hydrangeas, snapdragons, sunflowers and zinnias was higher with the use of a commercial flower food, which also moderated the effects of having EC levels that are too high or low. Callas were not affected by flower food.

So what should the pH and EC of your water be? A low pH caused four of the eight species — roses, chrysanthemums, hydrangeas and sunflowers — to last longer. While four species were not improved by water pH, they were not



SEEING IS BELIEVING Chrysanthemums like their pH on the low side, between 3 and 4. After 12 days in an acidic (low pH) vase solution, the chrysanthemums look as great as they did on day one of the study.

hurt either. Considering all eight species tested, it is obvious that the water pH should be low, around 3 to 4.

It is harder to make a general statement about the appropriate salt level of water, because optimum levels vary from one species to the next. Roses, hydrangea and snapdragons lasted longer with salt levels higher than previously recommended, so tap water (which, for most businesses, will naturally have some salt in it) is best for these. Use low salt water (see next section) for carnations and zinnia, whose vase life had an inverse

relationship with salt levels in water. Callas, chrysanthemums and sunflowers were not affected by salt levels in the water.

Finally, if you're a regular reader of this column, you already know the importance of using flower foods. This study confirmed that flower foods make flowers last longer and help overcome the negative effects of having either too much or too little salt in the water.

(Water) Treatment Options

The first step is to get your water tested. The floral preservative companies will do so for free. Your local cooperative extension agent can also help. It is unlikely that your water will have a low enough pH; however, it might have sufficient salt for those species that need it. The use of commercial floral preservatives can overcome many of the problems associated with tap water that has a high pH or the wrong EC. Water that is too high in pH or EC for flower foods to fix can be treated with a process known as reverse osmosis (RO). Large greenhouses use RO systems to treat poor quality water, but smaller systems are available for treating water at wholesalers and retailers. Distilled water can be used but, unless it's used for a low volume of flowers, it's not as cost effective in the long run as using an RO system. 🌿

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DEATH SENTENCE When placed in a solution without a pH control, the same flowers as above died after just five days.