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Care & Handling

Vol. 7(23): pg 12

*By James F. Bridenbaugh
Educational Programs Manager
Smithers-Oasis
Kent, OH*

Every cut flower handler should know two things about the water they are using for their cut flowers. What is the pH of the water? What are the total dissolved solids in the water?

In simple terms the pH of the water is a measure of acidity or alkalinity of a solution. On a scale of one to 14 pH, alkaline solutions are greater than seven. In acidic solutions the pH is less than seven.

Fresh flower life is greatly increased in low pH solutions. A pH range of 3.5 to 4.0 has proven to be the most effective in laboratory tests. Most commercial preservatives added in the correct measured amount, usually one tablespoon or 10 grams per quart of water, accomplish the task of adjusting water pH. Acid solutions move more readily through the vascular cells of a stem than neutral or alkaline solutions.

The answer to the question about total dissolved solids refers to a measure of total soluble elements in the water.

Chain of Life standards indicate that high quality water should have less than 250 parts per million total dissolved solids. Water containing levels higher than this can potentially reduce fresh flower longevity.

Salts which are found in water include calcium, magnesium, sodium chlorides, carbonates and sulfates. You will not know exactly which salts are present without a complete analysis of your water.

The two chemicals which effect water hardness are magnesium and/or calcium content. Water analysis is again necessary to determine their presence.

One more point must be mentioned when we speak of water quality—that's the buffering capacity of the water and the ability of the water to resist change. Water that is highly buffered resists change to its pH. The water will need a large amount of an acidifying agent or preservative to change it. Water that is partially buffered can be very easily changed. It takes a less acidifying agent or preservative to effectively adjust its pH.

The pH adjustment and knowing the total dissolved salts are essential for proper use of flower preservatives and increasing cut flower life.

Nursery Times

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