



Why is Water Quality Important for Fresh Cut Flowers?

4 Parameters are Taken Into Consideration When Evaluating a Water's Effect on Fresh Cut Flowers

- pH
- TDS (total dissolved solids)
- Alkalinity
- Hardness

pH

The pH is simply a measure of how acidic or basic your water is on a scale of 0 to 14. A pH of less than 7 is acidic; 7 is neutral; and greater than 7 is basic. The pH alone doesn't reveal much about water quality, but how easily the pH changes (buffering capacity) is important. Typically, water alone will have a pH range of 5 to 8. Combined with flower food, the usual pH will be between 3 and 5, or slightly acidic. A slightly acidic solution increases water uptake and prevents bent neck.

What does the pH value tell you? A change in 1 pH unit is a tenfold change in the acidity. For example, a pH of 6 is 10 times more acidic than a pH of 7 and is 100 times more acidic than pH of 8.

TDS (total dissolved solids)

The TDS is a measure of all the dissolved solids in the water (measured in parts per million or ppm). The level of TDS is important: high levels of certain salts can potentially reduce flower life. The mixture of dissolved salts is also important. A mixture of moderate levels of calcium, magnesium, potassium, and sulfates can be beneficial, while a mixture of high levels of iron, fluoride, and sodium can be harmful. To explore the TDS further, alkalinity and hardness are analyzed. These properties can be considered a part of the TDS.

Alkalinity

The alkalinity level of your water describes its buffering capacity (ability to resist pH changes). A higher alkalinity means that the water contains a possible combination of higher amounts of carbonates, bicarbonates, and hydroxides, which resist the lowering of the pH (and potentially reducing the effectiveness of flower food). When recommending water specific flower foods, water with alkalinity less than 60 ppm is considered pure (recommending Special Blend Pure); from 60 ppm to 180ppm is considered medium (recommending Original Floralife); and greater than 180 is considered hard (recommending Special Blend Hard). Alkalinity is the most important factor when considering how cut flowers will react to your water.

Occasionally, water will have such high alkalinity that no flower food is able to bring the pH down into the acceptable range. In these extreme cases (usually with alkalinity much greater than 300 ppm), a deionizing or reverse osmosis system may be recommended. These systems remove all of the ions from the water; beneficial ions are added back to the water by using flower food.

Hardness

The level of hardness refers to the amount of calcium and magnesium in your water (measured in ppm). Typically, these levels are not a good indicator of how cut flowers will react in your water. In general, most highly alkaline waters also have high hardness levels. If you use a water softener, a potassium salt is recommended for use in the softener. (Sodium chloride salt is not recommended.) A softener replaces calcium and magnesium ions with sodium ions, which tend to be harmful for flowers at high levels.



Together, **pH, TDS, alkalinity, and hardness** can tell you how your flowers will react to your specific water type.

Floralife labs will test your water free of charge. Just send the labs at Floralife a sample of your water (at least one pint) with your contact information.