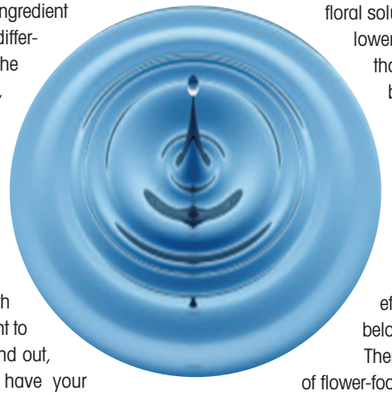
handle with care

By Bruce Wright

Is your water killing your flowers?



IF THERE IS any one ingredient that makes all the difference in prolonging the life of your cut flowers, it's water. Fortunately, most florists have access to a water supply that's perfectly adequate for their needs. On the other hand, if there's a problem with your water, you'd want to know that—and to find out, you really need to have your water tested.

"Your local water may be fine to drink or for washing and still not be good for your flowers," says floral industry consultant W. Kurt Schroeder AIFD, AAF, PFCI, of South Jersey Floral Company in Deptford, New Jersey. A single municipality can have several different sources for its water, and the source might switch from May to September, he notes; therefore, "it doesn't hurt to have your water checked more than once a year."

The main problem florists can have with water quality is that if water is very hard or alkaline, it becomes chemically resistant to one of the important effects of flower food: lowering the pH. (More in a minute on the relationship between water hardness and pH.) pH is a critical factor in the efficacy of flower-food solutions, according to the authoritative Chain of Life Network (**www.chainoflife.org**): it affects bacteria count, water uptake, and the solubility and availability of certain ions, such as iron, which can influence flower longevity.

Testing, testing

You can get a rough idea about the quality of your water by testing the pH *after* you have mixed it with flower food. The pH of flower-food solution should be relatively acidic—between 3.5 and 4.5, according to Bruce Ecker, a water quality expert at Floralife. (To be clear, not all floral solutions are designed to lower the pH to this level; those that are chlorine-based, like Chrysal Professional Gerbera, yield a neutral pH of 7 or so. But most hydration solutions, holding solutions and vase solutions are truly effective only at a pH below 5.)

There's a lot that a pH test of flower-food solution doesn't tell you. But as a quick indicator, the test has the merit of being very easy and inexpensive to do. Test strips are available from online sources, garden centers or swimming pool supply stores.

If a pH test tells you that your flower-food solution isn't doing its job, the next step is to get your water professionally tested. Fortunately, that part is easy too.

Here's all you have to do to get your water tested by Floralife, free of charge:

1. Rinse out a quart (liter) bottle several times with your tap water.

2. Fill it and send it, tightly sealed and wrapped, to:
Floralife, Inc., Attn.: Laboratory
751 Thunderbolt Drive,Walterboro, SC 29488

3. Make sure you include all necessary contact information such as your name, company name, mailing address, telephone, fax, and e-mail address, so that Floralife can provide you with the analysis results.

A hard problem

"At Floralife we have four things we test for: pH, total dissolved solids, hardness, and alkalinity," says Floralife's Bruce Ecker. Those four things are related—so much so that most nonscientists think pH and alkalinity, for example, are more or less the same thing. But in fact, a chemist can't get a complete picture of water quality without using all of these measures.

Without getting too technical, it's fair to say that hardness—which refers to the amount of calcium and magnesium ions in the water—"makes the water stubborn, resistant to change," says Bruce.

"With hard water, the calcium and magnesium levels make it more difficult to drop the pH," confirms Gay Smith, technical consulting manager for Chrysal Americas. "Usually hard water is in places that are arid or where there is a lot of limestone. Texas and some of the Southwestern states tend to have hard water."

Even worse than hard water, though, is artificially "softened" water, since the softening process is usually done with potassium chloride, a salt. Moderate levels of salts in the water can actually be good for cut flowers—but too much is deadly. When Floralife measures total dissolved solids, it's essentially salt content that is being tested.

"Once in a while we run into someone having problems with their solutions," says Gay. "They might be in a strip mall where the whole mall is on softened water. If you have high salt content, the salts migrate to the leaf margins and burn them up, so you get leaves that turn brown and crispy on the edges."

Water quality solutions

Bear in mind that most florists, especially those on municipal water systems, don't suffer from extremes of water quality. Ordinary flower food is formulated to work well within a range of water hardness, alkalinity, and total dissolved solids. But if you find out that your water isn't what it should be, what can you do about it?

Sometimes water quality can be corrected by adjusting the dosage of flower food. Some dosing units have variable settings, for just this reason. Florists should not, however, experiment or adjust dosing based on hardness without first getting expert advice, says Floralife's Bruce Ecker: "Then the florist is playing chemist."

Floralife also markets a flower food specifically formulated for hard water. "Having said that, Crystal Clear, which is the flagship food in our line, works in a wide variety of waters," says Bruce. The same is true of Chrysal Clear and other widely used, "one-size-fits-all" flower foods.

Beyond special formulas and adjusted dosing, there is a point water that is extremely hard or salty cannot be chemically treated to make it safe for cut flowers, says Bruce: "At that point we recommend florists use a reverse osmosis system." Reverse osmosis, or RO, systems strip *all* the minerals from the water they treat—which is not ideal. "Flowers need some minerals, just like we do," Bruce explains. Typically, therefore, florists and others with very hard, alkaline, or salty water will blend some of their tap water back into the water that is purified by reverse osmosis.

Hang it up

Here's one final thought from Gay Smith: once you're sure you have water coming through your tap that's healthy for cut flowers, don't mess it up. "In flower shops, I sometimes see hoses that are used to fill flower buckets thrown on the floor or into the bottom of the sink. That's begging for contamination. When you pick up that hose and turn on the tap, the first bucket fill is going to have bacteria or fungi in it."

The solution? First, clean your drains and the lower part of the sink regularly—at least as often as you do your bathroom sinks at home. Second, rig a way to hook the hose up when it's not in use. "It can be as easy as a nail in the wall and using a zip tie for a hanger," Gay suggests.

Also, if you use an injector or dosing unit to mix water and flower food, "it's a good idea to let it run 15 or 20 seconds before you start filling the first bucket," says Gay, "to make sure solution is running all the way through. Otherwise the first shot may not have flower food." And as we know, careful measurement of flower food is one of the keys to giving your flowers long life—and your customers good value.