

## **Hydrolysis - Are We Doing Something About It?**

Some time ago, an interiorscape contractor lost an important client because he did not know about hydrolysis and how to prevent it. It seems that the client's building had palms in the atrium which were infested with mites. The population got so out of control that the cobwebs were everywhere and, despite intensive spraying with everything in his arsenal, the contractor could not control the mites.

The culprit: **Hydrolysis**

**The solution:** the building's owner hired another interiorscape contractor that successfully controlled and eradicated the mite infestation.

**The means:** knowledge of hydrolysis, its effects on pesticides, and its prevention.

*Hydrolysis is the breakdown of the active ingredients in carbamate and organophosphate pesticides caused by high alkalinity.*

**\*\*\* In spray water, high alkalinity can be pH levels over 7.5\*\*\***

The breakdown progresses virtually geometrically as the pH levels go up. And, in the case of the palms in the atrium, the contractor was filling the sprayers in the bathrooms of the building using city water that had a pH of 8.5! What this means is, that by the time the applicator filled the sprayer, mixed in the miticide and finally got out to the atrium, the high pH in the water had broken down the active ingredient in the miticide and the spray on the palms had the same effect as: **Milk!**

It was a hard lesson to learn and maybe one we should review periodically, as we all tend to overlook bits of information that could be instrumental to the success of our operations, in this case, spraying pesticides for their true effect: **Killing Bugs!**

Controlling Hydrolysis is very simple. It just means knowing the pH level of the water you are using to fill your tanks and correcting it to a reasonable acid level, between 6.0 and 6.5. This is a safe range where most pesticides will work well and maintain their potency.

Adjust the pH level in your water by adding acid to lower the pH to the desired range. This can be phosphoric acid, sulfuric acid and/or some of the various "buffering" agents such as surfactants, emulsifiers, conditioners, spreaders, and stickers that are available through your friendly chemical supplier. A general rule of thumb is that 6 oz of 80% Phos Acid will lower the pH from 7.2 to 6.5 in 100 gallons of water. However, mineral compositions of water vary with location, so your best bet is to test it yourself using litmus paper, or a pH tester. If you still need more specific information on particular products, ask your extension agent or chemical salesperson.