PESTICIDES DECOMPOSE IN ALKALINE WATER

Pesticides can be ineffective in controlling pests for several reasons, including incorrect application rate, improper timing, inappropriate chemical used for the insect involved and old chemicals that have outlived their effective shelf life. One seldom-considered factor is water quality. Most pesticides will lose some degree of their effectiveness in alkaline water (a pH value of seven is considered neutral, values above that are alkaline) through a decomposition process called alkaline hydrolysis. This process, which begins as soon as the chemical is mixed with water, continues after it has been sprayed onto the plants, and can greatly reduce the effectiveness of a pesticide. The rate at which this process occurs varies according to the chemical involved and the alkalinity of the water. Malathion, for example, loses its effectiveness very quickly in water that is just above neutral. Other pesticides affective by alkaline water include Parathion, Sevin, Orthene, Di-Syston and Lannate. Some fungicides also are pH sensitive and should not be combined with materials such as hydrated lime or mixed in alkaline water. These include Captan, Botran, Lesan and Carbamate fungicides.

Greenhouse Grower, February, 1983, recommends you take four precautions to reduce the effects of alkaline hydrolysis: 1) frequently check the pH of your water, 2) read pesticide labels to see if material is sensitive to alkaline water, 3) do not mix pesticides until you are ready to use them, especially if you are combining pesticides and 4) if your water is alkaline, and you are using a sensitive pesticide, add a product to neutralize the pH such as Spray-Aide, Buffer-X, Nutrex, Sorba spray or Tri-fol. These should be available from your local garden center or nursery, especially if alkalinity is a problem in your area. Adding commercial vinegar (acetic acid) to the water has been suggested as a home remedy, but, according to Dr. Christine Stephens, a professor of vegetable and ornamental diseases at Michigan State University, it "is not reported to give satisfactory results because of its instability and failure to remain on leaf surfaces."

American Horticulturist, May 1983

Dear Pete:

Thanks again for the honorary membership in the Midwest Association of Golf Course Superintendents. I am glad to know that you still think enough about this old Texan to include me in your honorary membership each year.

Regarding the last Illinois Turfgrass Conference, it was certainly a pleasure for me to have the opportunity to participate and to visit with so many friends. While I enjoy my present job very much, I miss the direct involvement in turfgrass research, especially when I have the opportunity to rub elbows with professional turf men such as yourself.

Just completed a 1.5 million dollar construction program here at the Dallas Center and am getting ready to initiate another one using funds generated by the sale of 42 acres of land worth several dollars per sq. ft. This is certainly a departure from the kinds of things I did when I was at the University of Illinois; however, its fun and it will have a tremendous enhancing effect on our future research capability.

Don't know when I will have the opportunity to visit the Chicago area again, but I hope it will be soon. Until them, take care and have a good season.

A. J. Turgeon, Professor &
Resident Director