



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
HEALTH EFFECTS RESEARCH LABORATORY  
RESEARCH TRIANGLE PARK  
NORTH CAROLINA 27711

March 4, 1982

Dr. Mahfouz Zaki  
Director of Public Health, Suffolk County  
225 Rabro Drive, East  
Hauppauge, New York 11788

Dear Dr. Zaki:

This letter will serve to confirm our telephone conversation of yesterday, March 1, 1982, regarding the toxic hazard of aldicarb in water.

Aldicarb is a highly toxic compound, but whether or not poisoning will occur depends, as with all chemicals, on the dosage or amount ingested or otherwise absorbed.

With regard to my memorandum of August 26, 1979 on the human health hazard of aldicarb in drinking water, I think it is important to emphasize that this recommendation was written 2 1/2 years ago. Also, it was written over the week-end that this problem was first brought to our attention as a temporary guide to immediate action required to safeguard human health until further information could be obtained. It was never intended as a long-term guideline.

Considerable data on the toxicology of aldicarb has become available since my original memorandum was written, including the following:

- o Our Laboratory has carried out studies on the possibility of potentiation between aldicarb and the related carbamate pesticide carbofuran which co-occur as a residue in some water samples. Our results indicate an additive effect, but no incidence of potentiation between these two compounds.
- o Little or no unchanged aldicarb occurs in these water samples. The residue is characteristically a 1:1 mixture of two aldicarb metabolites - aldicarb sulfoxide and aldicarb sulfone.
- o I understand that a short-term study conducted by the Union Carbide Corp. to define the effects of aldicarb residue in drinking water has recently been completed. In this test, rats were given aldicarb (as the 1:1 sulfoxide/sulfone

mixture) in their drinking water over a 28 day period. At the highest dose level tested (19,200 ppb), acute clinical signs of poisoning and cholinesterase depression were observed but no mortality occurred. At the next dosage level, (4,800 ppb) no clinical signs of poisoning occurred and enzyme activity was normal.

As you know, the current guideline level recommended by our Agency for aldicarb residue in potable water is 10 ppb. I believe that, in the light of our current knowledge, this level represents an adequate safety margin. As a practical matter, the levels which are being found in these water samples should not present a hazard for bathing purposes.

Sincerely,

A handwritten signature in cursive script that reads "William F. Durham". The signature is written in dark ink and is positioned above the typed name.

William F. Durham, Ph.D.  
Senior Research Advisor  
Research Coordination Office/MD-70

Enclosure