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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

January 17, 1995

MEMORANDUM

SUBJECT: Fenamiphos: EFED Response Risk Mitigation Proposal

FROM: Janice Jensen, Chief *Janice Jensen*  
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Environmental Fate and Effects Division (7507C)

THRU: Evert K. Byington, Chief *Evert K Byington*  
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Environmental Fate and Effects Division (7507C)

TO: Barry O'Keefe, Chemical Review Manager  
Reregistration Branch  
Special Review and Reregistration Division (7508C)

The purpose of this memorandum is to provide the EFED response to the risk mitigation proposal for fenamiphos dated October 26, 1994, from John S. Thornton, Manager, Registrations, Miles Inc.

It is the opinion of the EFED Fenamiphos Team that the proposal submitted by Miles Inc, if fully implemented, is appropriate, directionally correct, and will reduce the environmental risks associated with the use of fenamiphos. However, the risks may not be reduced below our levels of concern.

**Ground Water.** Our greatest concern is the contamination of ground water with fenamiphos and its degradates. Because of its chemical and physical characteristics, and its affect on ground water in a monitoring study conducted in Florida, fenamiphos exceeds our levels of concern for ground-water quality and human health via drinking water. The lifetime Health Advisory for fenamiphos has been established at 2 ppb. Health Advisory levels have not been established for the degradates. Scientists from EFED and HED are working together to assess the risks for this chemical.



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Fenamiphos and its degradates were detected in ground water at extremely high levels in a monitoring study done for the State of Florida in 1990. The study showed concentrations of parent fenamiphos in ground water that ranged up to approximately 23 ppb, greatly exceeding the 2 ppb lifetime Health Advisory. High levels of two of the degradates, fenamiphos sulfoxide and fenamiphos sulfone, were detected at 204 ppb and 20 ppb, respectively. The highest level of total residues detected in ground water during one sampling event was 239 ppb, over 100 times the HAL.

Because of the properties of fenamiphos and its degradates, it is likely that the chemical will contaminate ground water in other vulnerable areas besides Florida. To better define the fate of fenamiphos in the environment, EFED requested that the registrant conduct several small-scale prospective ground-water monitoring studies. The State of Florida also requested a prospective study for this chemical because of its citrus use. The Florida study is anticipated to begin in 1995. Two other ground-water monitoring studies will also be conducted: one in a tobacco-growing area of the Southeast, and the other on either grapes or citrus in California.

After the studies have been completed, reviewed and analyzed, EFED will be in better position to propose next steps. However, in the meantime, the registrant should attempt to make every effort to stop the contamination of ground water by fenamiphos and its degradates. If contamination of ground water continues to occur from use in accordance with label directions or in accordance with commonly recognized practices, the registrant should consider voluntary cancellation of this chemical in the United States.

**Ecological Impacts.** Another area of concern is for the ecological impact of fenamiphos. The following mitigation measures were recommended by EFED in our fenamiphos RED chapter sent to SRRD on August 16, 1994 to reduce hazard to nontarget organisms: reduce application rates; reduce application frequency; use alternatives to fenamiphos from treatment to treatment or from season to season; and establish vegetative buffer zones around nearby aquatic environments.

EFED scientists most familiar with fenamiphos believe that Miles Inc has made a good faith effort to implement our recommendations for reducing ecological risks. Nonetheless, our scientists are uncertain if the proposed mitigation measures will reduce risks below our levels of concern. However, it is the opinion of EFED scientists that the risks may be at the lower end of the range of EFED risk calculations. This opinion is based on actual field incidence data collected over the twenty years that the chemical has been registered.

**Summary.** It is the opinion of the EFED Fenamiphos Team that the proposal submitted by Miles Inc, if fully implemented, is appropriate, directionally correct, and it will reduce the environmental risks associated with the use of fenamiphos. However, the risks may not be reduced below our levels of concern, especially for ground water. The

registrant should attempt to make every effort to stop the contamination of ground water by fenamiphos and its degradates.

Please feel free to contact me at (703) 305-7706 if you have any questions or comments regarding this memorandum. EFED scientists would welcome the opportunity to work with SRRD and Miles Inc to implement their risk mitigation measures for fenamiphos.

cc: Esther Saito  
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