



# Department of Pesticide Regulation

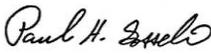


Mary-Ann Warmerdam  
Director

## MEMORANDUM

Arnold Schwarzenegger  
Governor

TO: Jerry Campbell  
Assistant Director

FROM:   
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Chief Deputy Director  
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DATE: May 15, 2006

SUBJECT: RISK MANAGEMENT DIRECTIVE FOR METHAMIDIPHOS

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This memorandum outlines the Department of Pesticide Regulation's (DPR's) risk management decision related to the development of use restrictions for methamidophos.

### Summary

In February 2006, DPR staff completed our risk characterization document (RCD) on methamidophos. The assessment addressed risks associated with (1) occupational exposures (e.g., applicators, mixers and loaders handling methamidophos, and fieldworkers performing tasks in treated fields); (2) ambient and off-site exposures to bystanders; and (3) dietary exposures from consuming methamidophos-treated food. We determined that the use of methamidophos results in unacceptable acute, seasonal, and chronic exposures to persons in the occupational setting.

### Background

Methamidophos use in California has declined greatly over the past decade, with registered uses remaining only for cotton, potatoes, and tomatoes. Methamidophos is both an active ingredient and an active breakdown product of acephate.

In 2002, the U.S. Environmental Protection Agency announced an interim reregistration eligibility decision (IREED) for methamidophos. Cotton uses were to be phased out over five years, discontinued by 2007. The decision also included a number of label amendments that are necessary in order for methamidophos products to be eligible for reregistration. Registrants had not agreed to these amendments at the time the IRED was published. These amendments are:

- All applications must be made using enclosed cab tractors or enclosed cockpits.
- Flaggers must be in enclosed vehicles or mechanical flaggers be used, or ground positioning system (GPS) equipment must be used.
- A maximum of two applications per season to cotton during the phase out period.
- Maximum of four or less applications per season to tomatoes (except for current SLN registrations with less than three applications would remain as written).



### Critical Endpoints

Inhibition of acetylcholinesterase is the critical endpoint for acute, subchronic, and annual exposure scenarios. A no observable effect level (NOEL) of 3.0 mg/kg/day was used to assess the margins of exposure (MOE) for acute occupational exposure. A NOEL of 0.75 mg/kg/day was used to assess MOEs for seasonal and annual occupational exposure. From these NOELs, estimates were made of occupational exposure for mixer/loader/applicators, flaggers, and post-application work tasks. A MOE of at least 100 is generally considered adequate to protect people from the toxic effects of a chemical when the toxicology endpoints are derived from animal studies. MOEs for mixers, loaders, and applicators ranged from 3-45 (acute), 3-44 (seasonal), and 8-130 (chronic). Flagger MOEs ranged from 1-14 for all durations of exposure. All fieldworker MOEs were greater than 100.

### Human Health Mitigation

Because methamidophos is both an active ingredient and an active breakdown product of acephate, aggregate exposure could be considered. However, I am directing staff to consider only methamidophos as an active ingredient at this time. The RCD for acephate is nearing completion. We will make a decision on acephate after reviewing the RCD. I recommend we take the following steps:

1. Review currently registered labels to determine if the U.S. Environmental Protection Agency-recommended label amendments have been implemented.
2. Prepare appropriate mitigation measures for mixers, loaders, and flaggers for situations not addressed by label amendments. The proposed mitigation measures should be developed with the intent of meeting a goal of raising the MOE for these occupational scenarios to 100.

If you have any questions, please contact me.

Jerry Campbell  
May 15, 2006  
Page 3

bcc: Chuck Andrews  
Linda O'Connell