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OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

March 30, 1998

MEMORANDUM

SUBJECT: Review of Parathion Incident Reports
DP Barcode D242998, Chemical #057501, Reregistration
Case #0155

FROM: Jerome Blondell, Ph.D., Health Statistician
Chemistry and Exposure Branch 2 *Jerome Blondell*
Health Effects Division (7509C)

THRU: Susan V. Hummel, Senior Scientist *Susan V. Hummel*
Chemistry and Exposure Branch 2
Health Effects Division (7509C)

TO: Jonathan Becker, Environmental Health Specialist
Reregistration Branch 2
Health Effects Division (7509C)

BACKGROUND

Late in 1991 EPA reached a settlement agreement on parathion that severely limited its use. Use was limited to nine field crops including alfalfa, barley, corn, canola, cotton, sorghum, soybeans, sunflower, and wheat. Application could only be applied aerially and closed mixing/loading systems were required. No hand labor was permitted in fields to which parathion had been applied. This review of incidents only covers the time period since the settlement agreement went into effect.

The following data bases have been consulted for the poisoning incident data on the active ingredient parathion (PC Code: 057501):

- 1) OPP Incident Data System (IDS) - reports of incidents from various sources, including registrants, other federal and state

health and environmental agencies and individual consumers, submitted to OPP since 1992. Reports submitted to the Incident Data System represent anecdotal reports or allegations only, unless otherwise stated. Typically no conclusions can be drawn implicating the pesticide as a cause of any of the reported health effects. Nevertheless, sometimes with enough cases and/or enough documentation risk mitigation measures may be suggested.

2) Poison Control Centers - as the result of Data-Call-Ins issued in 1993, OPP received Poison Control Center data covering the years 1985 through 1992 for 28 organophosphate and carbamate chemicals. Most of the national Poison Control Centers (PCCs) participate in a national data collection system, the Toxic Exposure Surveillance System which obtains data from about 70 centers at hospitals and universities. PCCs provide telephone consultation for individuals and health care providers on suspected poisonings, involving drugs, household products, pesticides, etc.

3) California Department of Food and Agriculture (replaced by the Department of Pesticide Regulation in 1991) - California has collected uniform data on suspected pesticide poisonings since 1982. Physicians are required, by statute, to report to their local health officer all occurrences of illness suspected of being related to exposure to pesticides. The majority of the incidents involve workers. Information on exposure (worker activity), type of illness (systemic, eye, skin, eye/skin and respiratory), likelihood of a causal relationship, and number of days off work and in the hospital are provided.

PARATHION REVIEW

I. Incident Data System

Only cases involving exposure occurring since 1991 are reported below.

Incident#3599-1

The Minnesota Department of Agriculture reported on a survey of enforcement agencies in 32 States of the over 1600 complaints of spray drift investigated for 1993-1995. Only one was reported to be due to parathion. It is not known if this case resulted in human exposure or symptoms.

Incident #3965-1

The South Dakota Department of Agriculture reported one potential human exposure result from drift from an application to a sunflower field. Health effects, if any, were not reported.

II. Poison Control Center Data

Parathion was not one of 28 chemicals for which Poison Control Center (PCC) data were requested. Also the data collected cover 1985 through 1992 and only data from 1992, since the settlement agreement, would be of interest for the current analysis.

III. California Data

California reported on six incidents involving parathion in 1992. No incidents have been reported for 1993 through 1996.

Three of the incidents involved drift from a plum orchard where two other pesticides (copper hydroxide and petroleum oil) were also involved. The pesticide responsible for the health effects was not determined, but the applicator was fined for misuse.

Two other incidents involved applicators working on or in a contaminated spray tank containing parathion and copper hydroxide. The pesticide responsible for the health effects was not determined.

In one incident worker was standing about 20 feet away from a spray rig that was being steam cleaned. Some of the parathion landed on the worker's face and he immediately felt ill. Specific symptoms were not reported. He was treated by a physician with atropine and 2-Pam and was off work for eight days.

IV. Conclusions

A very small number of parathion cases have been reported since the settlement agreement in 1991. In most cases the existence of health effects, if any, is not documented. For the incidents that are reported either spray drift or equipment maintenance are the principle sources of exposure.

V. Recommendations

No specific measures to reduce risk to handlers of parathion are recommended based on the small number of reported cases. Surveillance for new cases, especially involving spray drift and equipment maintenance should continue.

cc: Correspondence
Parathion file (chemical no. 057501)
SRRD - William Sproat (7508W)

RDI: BRSrSci:SHummel: