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

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

September 22, 2000

MEMORANDUM

SUBJECT: Review of MSMA/DSMA Poisoning Incident Data
Chemical: # 013803/013802
DP Barcode: D 269180

FROM: Ruth H. Allen, Ph.D.,M.P.H., Environmental Epidemiologist
Chemistry and Exposure Branch
Health Effects Division (7509C)

THROUGH: Francis B. Suhre, Senior Scientist
Chemistry and Exposure Branch 1
Health Effects Division (7509C)

TO: Diana Locke, Risk Assessor
Reregistration Branch 2
Health Effects Division (7509C)

BACKGROUND

In response to the request that Health Effects Division Epidemiology Group review the incident data on MSMA/DSMA, the following data bases were reviewed for the poisoning incident data on the active ingredient cacodylic acid.

1) OPP Incident Data System (IDS) - reports of incidents from various sources, including required Federal Insecticide Fungicide and Rodenticide Act (FIFRA) Section 6 (a) (2)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) American Association of Poison Control Centers (AAPCC) - 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.

4) **National Pesticide Telecommunications Network (NPTN)** - NPTN is a toll-free information service supported by OPP. A ranking of the top 200 active ingredients for which telephone calls were received during calendar years 1984-1991, inclusive has been prepared. The total number of calls was tabulated for the categories human incidents, animal incidents, calls for information, and others.

MSMA/DSMA REVIEW

I. Incident Data System(IDS)

There are six incidents reported in IDS for MSMA and one for DSMA. The MSMA reports include, one fish kill, one fish and bird kill at a golf course, 34 human reports without symptom details, and one lady who developed an allergy after occupational exposure. In the DSMA incident, 4 adults sprayed in an aerial application experienced dizziness, sinusitis, rhinitis, memory loss, numbness, tingling, rash, fever, and mental pain.

II. American Association of Poison Control Centers (AAPCC)

For the reporting period 1993-1996,there were reports of 20 pesticide poisoning incident cases involving DSMA and 31 for MSMA.

For DSMA,-there were 12 non-occupational cases, including 7 adults and 5 children. One adult experienced symptoms. One child and one adult was seen as outpatients, and two adults and one child were seen in health care facilities. Also, there were 8 cases in occupationally exposed adults. One each had symptoms, or were classified as moderate or major incidents. One was seen as an outpatient, one was classified exposed and one each was treated in health care facilities, hospitalized and treated in the ICU.

For MSMA there were 31 incidents, 24 non-occupational incidents, including 17 in children, and 7 occupational incidents. One child and one occupational adults had symptoms, and one child case and one occupational case were each ranked moderate. Six children were seen as outpatients and 6 were classified as exposed. Three children were seen in health care facilities, as were one non-occupationally exposed adult and 2 occupationally exposed adults.

III. California Pesticide Illness Surveillance Program

Case reports are described, following investigation by the Worker Health and Safety Branch or the Department of Pesticide Regulations of the California Environmental protection Agency. Incidents were classified as definitely, probably or possibly related to exposure to MSMA/DSMA, alone or in combination.

Summary: A total of 14 incidents were reported from 1982-1996, resulting in 19 days off from work and one day in hospital. Three cases were evaluated as definite, 3 were probable, and 8 were possible. Six cases involved non-ag uses, and 8 were ag uses. Symptoms were: four cases with systemic allergic symptoms, two with nausea and dizziness, and three with eye irritation symptoms.

IV. National Pesticide Telecommunication Network (NPTN)

In the 1984-1991 inclusive NPTN ranking of the top 200 active ingredients, MSMA and DSMA are not included in the NPTN.

CONCLUSIONS

There are only scattered reports for MSMA/DSMA among the four data systems used by the epidemiology group to evaluate human poisoning incidents. Sparsity of data could be due to low usage, and/ or poor reporting to surveillance programs. From the limited information available, systemic allergic reactions and eye irritation are possible targets for preventive intervention.

cc: Correspondence
MSMA/DSMA file (chemical: 013803/013802)
Jerome Blondell- CEB 7509-C (epidemiology group team leader)
Ruth Allen-CEB 7509-C