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7539 / LINURON



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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MEMORANDUM

SUBJECT: Review of linuron "medical records"; Record # 181860; Caswell 528; EPA I.D. # 035506; Project 2281

TO: Michael McDavit, Review Manager
Special Review Branch (TS-767C)
and
Robert Taylor, PM #25
Registration Division (TS-767C)

FROM: James N. Rowe, Ph.D.
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Hazard Evaluation Division/HED (TS-769C)

James N. Rowe
11/7/86
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11/12/86

THRU: Laurence D. Chitlik, D.A.B.T.
Section Head, Section V
Toxicology Branch/HED (TS-769C)
and
Theodore M. Farber, Ph.D.
Chief, Toxicology Branch/HED (TS-769C)

ACTION: Review of "medical records" from duPont linuron production area in LaPorte plant; Record # 181860; Caswell 528; EPA I.D. # 035506

RECOMMENDATIONS:

Based on the reported cases of chloracne and methemoglobinemia (one case for each health effect), it is recommended that detailed exposure data, which might clarify the health findings and allow comparison of exposure in factory workers to pesticide applicators, be requested. This request should be performed after consultation with Curt Lunchik of EAB.

If it is determined that the exposure levels occurring in the plant, and which resulted in these two reports of human toxicity, are similar to those experienced by pesticide applicators, then consideration should be given to reducing applicator exposures to linuron. It is likely that the exposure levels for DCA, TCAB or TCAOB (as contaminants in linuron) in the field are significantly below those experienced during linuron production.

cc C. Lunchick
K. Barbehenn

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EVALUATION OF SUBMITTED ANALYSIS:

A summary of an analysis of the medical records of 118 employees (present, former employees) performed by G.M. Allison, M.D. of the Medical Department of the LaPorte linuron production plant was submitted.

Based on Dr. Allison's examination, two employees had medical problems apparently associated with the dichloroaniline (DCA) utilized in the production process for linuron.

One case of chloracne was noted and was related to impurities in the DCA. It was further stated that no other cases appeared after DCA quality was upgraded. As noted in an analysis of contaminants of linuron, chloracne has been associated with occupational exposure to 3,3',4,4'-tetrachloroazobenzene (TCAB) and 3,3',4,4'-tetrachloroazoxybenzene (TCAOB) (memo re: review of DCI notice for linuron, 9/24/85; from J. Rowe to I. Sunzenauer).

Another case of methemoglobinemia (apparently distinct from the chloracne case) was reported. This case was related to cleaning up of DCA and was stated to be an acute, one-time exposure which cleared spontaneously. Acute methemoglobinemia is characteristic of anilines and DCA has been identified as the causative agent for methemoglobinemia in one industrial exposure incident during the manufacture of propanil (see memo cited above).

Comments:

1. It is not possible to substantiate the reported cases of chloracne or methemoglobinemia since only a summary of the medical record analysis was submitted. However, there is no reason to discount these reported health effects.
2. In a Toxicology Branch memo of 3/14/86 it was recommended that if the records indicate any unusual medical problems related to linuron exposure, then detailed exposure data, which might clarify the findings and allow comparison of exposure in factory workers to pesticide applicators, should be requested (memo re: DCI notice on linuron for product chemistry, residue chemistry and toxicology; 1/11/86; I.D. 035506, from J. Rowe to I. Sunzenauer). It was further stated that while Toxicology Branch recognizes that the workplace is under the purview of OSHA, OGC has indicated that precedents for such requests for workplace data have occurred.