

US EPA ARCHIVE DOCUMENT

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Init. EM

To: Ms. Geraldine Werdig, PM-50 and
Mr. Larry Schnaubelt, PM-12
Registration Division (TS-767)

From: Carolyn K. Offutt *Carolyn K. Offutt*
Chief, Environmental Processes and Guidelines Section
Exposure Assessment Branch, HED (TS-769)

Attached please find the review of:

Reg./File No.: _____

Chemical: Azinphos Methyl

Type Product: Insecticide

Product name: Guthion

Company name: Mobay

Submission Purposes:

Special Data Call-In for Reentry on Guthion, (Dyrene, Disyston, and Metasystox-R) (See Mobay's letter of 7/30/86)

ZBB Code: _____ Action Code 400

Date In: 8/8/86 EAB #: 6788

In Part, previously submitted 7/24/86 with EAB# 6751.

Date Completed: 9/30/86 Days

4.0

Deferrals To:

Ecological Effects Branch

Residue Chemistry Branch

Toxicology Branch

Monitoring study requested by EAB:

Monitoring study voluntarily conducted by registrant:

Review of Proposed Protocol for Guthion Worker Reentry
Study (Cucumber Harvesting Study)

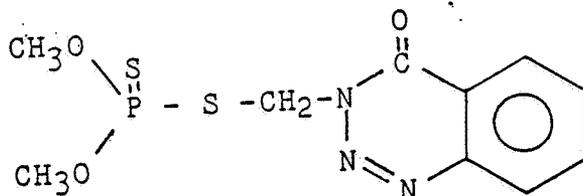
1. CHEMICAL:

Chemical name: O,O-Dimethyl S-(3,4-dihydro-4-oxobenzo[d][1,2,3]-
triazin-3-ylmethyl) phosphorodithioate

Common name: Azinphos Methyl

Product name: Guthion

Structure:



2. TEST MATERIAL:

Not applicable

3. STUDY/ACTION TYPE:

Review of Proposed Special Data Call-In for Reentry on Guthion, (also Dyrene, Disyston, and Metasystox-R) (See Mobay's letter of 7/30/86).

4. STUDY IDENTIFICATION:

Title: 7/30/86 Letter

Author: G. E. Brussell

Draft Protocol No: Not Indicated

Submitted by: Mobay Chemical Corporation with letter to Ms. Geraldine Werdig.

Issue Dates: 7/8/86 (Date Received at EPA)

Accession No: None

5. REVIEWED BY:

Linda L. Kutney, Chemist

Environmental Processes and Guidelines Section/EAB/HED

Linda L. Kutney Date 9/30/86

6. APPROVED BY:

Carolyn K. Offutt, Chief

Environmental Processes and Guidelines Section/EAB/HED

Carolyn K. Offutt Date 9/30/86

7. CONCLUSIONS:

We concur with Mobay's request to waive an exposure evaluation in the case of the granular soil treatment for application and transplant of ornamentals (Group A), provided they add a precautionary statement, "requiring the use of chemical resistant gloves (latex or natural rubber) during granular application and hand incorporation."

We concur with Mobay's conclusion that the worst case exposure on citrus harvesters (Pependorf's) may be used to represent crops within the Revised Group B. If worst case reentry intervals are too long, based on dislodgeable residue data, then specific worker exposure studies would be conducted for these activities.

We concur with Mobay's proposal to do a guthion cucumber harvesting study to represent crops within the revised Group C, including the activities of hand harvesting cranberries, weeding and harvesting strawberries, ^{if} tying cauliflower heads, hand thinning and sacking broccoli/Brussell sprouts/cabbage, hand thinning and harvesting lettuce, hand harvesting artichokes/green onions, thinning sugar beets, hand harvesting eggplant/peppers/tomatoes/celery, hand weeding and hand harvesting cantaloupe/watermelon/honeydew melons/cucumbers, and maintaining and scouting potatoes. The protocol is not acceptable for simulating the activities of hand-harvesting blueberries and digging/harvesting potatoes.

EAB concurs with the proposal to simulate exposure in Group D orchard crops by using published conversion factors listed by Zweig, et al, and Davis, et al, as surrogates for exposure studies. Mobay's revised Group D, includes activities associated with pruning non-bearing orchard crops such as apples, crabapple, apricots, peaches, nectarines, cherries, citrus, peaches, pears, plums/prunes, as well as hand harvesting apples, apricots, cherries, citrus, nectarines, peaches pears, plums/prunes, or quinces.

Mobay also included, as Enclosure 2 of their DCI package, a residue program for collecting dislodgeable residue on various crops treated with guthion (or dyrene, disyston, or metasystox-R). The DCI letter from Mobay states that this program will be used to collect dust samples in situations involving "low crops (i.e. potatoes and canteloupe)." Potatoes are not specifically mentioned in Enclosure 2, however. They should be mentioned if this was Mobay's intent.

Mobay's "Standard Operating Procedure, #F-1" for the dislodgeable and soil surface residue study appears to be

satisfactory. We would like to stress the need for good laboratory practices and observation of good quality control techniques.

Mobay's extension of the completion deadline for guthion reentry studies from April 1986 to December 1987 is acceptable.

8. RECOMMENDATIONS:

Mobay should be granted a waiver an exposure evaluation in the case of the granular soil treatment for application and transplant of ornamentals (Group A), provided they add the following precautionary statement, "requiring the use of chemical resistant gloves (latex or natural rubber) during granular application and hand incorporation."

Mobay may use the worst case exposure on citrus harvesters (Popendorf's) to represent crops within the revised Group B. If worst case reentry intervals are too long, based on dislodgeable residue data, then specific worker exposure studies will be allowed.

Mobay's proposal should be accepted to conduct a guthion cucumber harvesting study to represent crops within the revised Group C, excluding blueberries and digging and harvesting potatoes.

Mobay's proposal to simulate exposure found while pruning and hand-harvesting Group D orchard crops by using published conversion factors listed by Zweig, et al, and Davis, et al should be ~~ac~~cepted.

The DCI letter from Mobay states that this program will be used to collect dust samples in situations involving "low crops (i.e. potatoes and canteloupe)." Potatoes are not specifically mentioned in Enclosure 2, however. They should be mentioned if this was Mobay's intent.

Mobay's should use good laboratory practices and observation of good quality control techniques.

Mobay's request for an extension of the completion deadline for guthion reentry studies from April 1986 to December 1987 should be granted.

9. BACKGROUND:

Mobay has responded again (See the 7/30/86 letter to Ms. Geraldine Werdig, PM-50, received at EPA on 7/8/86) to the Special Data Call-In on Guthion.

10. DISCUSSION:

In enclosure 1, Mobay resubmitted their "Proposed Worker Reentry Exposure Studies" dated 3/20/86. This material expands the information sent to the EPA on 7/22/86. This enclosure proposes only four reentry activity groupings, rather than six as originally proposed on June 25, 1985.

We concur with Mobay's request to waive an exposure evaluation in the case of the granular soil treatment for application and transplant of ornamentals, included in Group A. This waiver is permitted partly due to Mobay's proposal to add a precautionary statement "requiring the use of chemical resistant gloves (latex or natural rubber) during granular application and hand incorporation."

We concur with Mobay's conclusion that the worst case exposure on citrus harvestors (Popendorf's) may be used to represent crops within the revised Group B, which includes activities of de-tasseling corn, hand-bagging sorghum, hand weeding sorghum, harvesting sweet corn/blackberries, hand-harvesting raspberries/boysenberries/loganberries, hand-harvesting/suckering/topping of tobacco, and scouting of cotton. The petitioner also included the provision that if worst case reentry intervals are too long, based on dislodgeable residue data, then specific worker exposure studies would be conducted for these activities.

Mobay also proposed to do a Guthion cucumber harvesting study to represent crops within the revised Group C, including the activities of hand harvesting cranberries, weeding and harvesting strawberries, tying cauliflower heads, hand thinning and sacking broccoli/brussell sprouts/cabbage, hand thinning and harvesting lettuce, hand harvesting artichokes/green onions, thinning sugar beets, hand harvesting eggplant/peppers/tomatoes/celery, hand weeding and hand harvesting cantaloupe/watermelon/honeydew melons/cucumbers, and maintaining and scouting potatoes, as well as harvesting blueberries and digging and harvesting potatoes.

The protocol is not acceptable for hand-harvesting blueberries and digging/harvesting potatoes. Blueberries would be more appropriately grouped with Group B crops, because of their height, and corresponding higher potential exposure. Potato digging and harvest should be considered separately because the primary exposure due to this operation is from hand contact with the soil. Soil degradation of Guthion and the exposure to workers hands is likely to be much different from that encountered when the primary degradation and exposure is foliar.

Mobay's revised Group D, includes activities associated with pruning non-bearing orchard crops such as apples, crabapple, apricots, peaches, nectarines, cherries, citrus,

peaches, pears, plums/prunes, as well as hand harvesting apples, apricots, cherries, citrus, nectarines, peaches pears, plums/prunes, or quinces. Mobay proposes to use conversion factors listed in J. Agr. Food Chem, Vol. 32, #6, 1984 by Zweig, et al, and Davis, et al, in the Bulletin Env. Contamination Toxicology, #27, 592-8, 1982 as surrogates for exposure studies for pruning and harvesting of these Group D orchard crops. EAB concurs with this proposal.

Mobay also included, as Enclosure 2 of their DCI package, a residue program for collecting dislodgeable residue on various crops treated with guthion (or dyrene, disyston, or metasystox-R). The DCI letter from Mobay states that this program will be used to collect dust samples in situations involving "low crops (i.e. potatoes and canteloupe)." Potatoes are not specifically mentioned in Enclosure 2, however. This enclosure gives the application, formulation, rate (ai), number of treatments, and sample interval/size/type, and test plot location to be used. A prohibition against the use of overhead irrigation on the test plot is included in each case.

We reiterate our concern that the maximum number of treatments, as stated on the label to be supported, should be used to calculate the proper reentry period. This would be in accordance with the Guidelines §130-2(4). In the case of many of the crops listed in Mobay's 1986 Residue Program, the petitioner is proposing to conduct dislodgeable residues at rates below the maximum permitted application rates specified on the current guthion label. Although the petitioner may wish to submit such data in support of revised labels, the data may do little to help support the current label, or do little to help support/establish reentry intervals or exposure scenarios expected for the current label. The petitioner may be well advised to reconsider the restrictions included within §132-2 of the Pesticide Assessment Guidelines, Subdivision K.

Mobay also included their "Standard Operating Procedure #F-1" for the dislodgeable and soil surface residue study. The method appears to be satisfactory. We would like to suggest that it is advisable for known quantities of the compounds and separate quantities of important metabolites to be incorporated into untreated samples, stored as the treated samples are stored, and analyzed along with the samples. In this way, data concerning the storage stability, the recovery %, and general quality control of the technician and accuracy of the analytical methods may be obtained. Other pertinent information concerning the precision of the analytical technique may be obtained by performing and comparing the results of duplicate analyses.

Mobay re-submitted, as enclosure 3 of the DCI submission, their field exposure study for the hand-harvesting of cucumbers. This study was submitted in a previous petition received by EPA on 7/23/86. Prior to 7/23/86, Mobay had proposed that this study be conducted using exposure caused by cauliflowering of guthion-treated crops, instead on that caused by harvesting treated cucumbers. This protocol is acceptable for the members of Mobay's crop Group C, with the exception of the activities involved with harvesting blueberries, and digging/harvesting potatoes, for the reasons mentioned in an earlier review (EAB# 6751, September 30, 1986).

Mobay also requested, in their DCI letter of 7/30/86, an extension of the completion deadline for guthion reentry studies from April 1986 to December 1987. They stated that the additional time was necessary in order to grow the crops, and that the later date for submitting reentry data on disyston and dyrene had already been accepted. We approve of the December, 1987 date for the guthion reentry studies.

11. ONE LINER:

Not applicable

12. CONFIDENTIAL BUSINESS INFORMATION:

None