



UNITED STATES

OPTIONAL FORM 99 (7-90)

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MAR - 8 1995

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

MEMORANDUM

OFFICE OF PREVENTION, PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: PROTOCOL REVIEW, REENTRY EXPOSURE STUDY SUBMITTED BY THE COPPER SULFATE TASK FORCE

FROM: Jeff Evans, Biologist
Reregistration Section
Occupational and Residential Exposure Branch
Health Effects Division (7509C)

TO: Andy Ertman, Chemical Review Manager
Reregistration Branch
Special Review and Reregistration Division (7508W)

THRU: Laura Morris, Acting Section Head
Reregistration Section (7509C)
Larry C. Dorsey, Chief
Occupational and Residential Exposure Branch
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Please find the OREB review of

DP Barcode: D198899

Pesticide Chemical Code: 008101

EPA Reg. No.: 1109-13

EPA MRID No.: none assigned

Review Time: 2 days

PHED: No

Jeff gives it the go ahead in a 3/17/95 cc mail message.

I. INTRODUCTION:

The Copper Sulfate Task Force has submitted a reentry study protocol in response to the data call-in, on Copper Sulfate and Copper II Compounds, dated February 11, 1993. Copper sulfate meets both the Agency's toxicity and exposure criteria for the requirement of reentry exposure data. Copper sulfate is in Toxicity Category II for acute dermal toxicity, and is applied to crops where fieldworker exposure can be expected. The protocol submitted by the Task Force addresses reentry exposure following applications of copper sulfate to citrus. The protocol presents a discussion of the proposed study with respect to guidelines 132-1a (foliar dissipation) and postapplication dermal exposure (133-3).

These guideline reentry studies, as well as those addressing mixer/loader/applicator exposure, are reserved for Copper II compounds pending submission and review of the required acute toxicity data.

II. DETAILED CONSIDERATIONS:

Copper sulfate is a fungicide applied to fruit and nut crops. Applications to citrus for the control of melanose begin after petal fall, and are repeated 2-4 weeks later if needed. In the draft protocol, one application was proposed. However, in a recent meeting between the Agency and representatives of the Task Force, two sprays were proposed. Applications will begin 2 weeks prior and just prior to harvest using 25.5 pounds (active ingredient) per acre per application. The study will be conducted using representative orange groves, at three sites in California, a major citrus producing state.

III. CONCLUSIONS:

The proposed study is described in two separate documents; the first, "Determination of Dislodgeable Foliar Residues of Copper after Application of Tri-Basic® Copper Sulfate Fungicide to Oranges in California", and the second, "Monitoring Exposure of Workers During Reentry into Orange Groves Treated with Tennessee Brand® Tri-Basic® Copper Sulfate Fungicide". Ten workers will be monitored during citrus harvesting activities. Both documents are drafts and were submitted separately. OREB recommends that these documents be combined for consistency with respect to field size (six trees vs 4 hour replicate for the harvester) and resubmitted. Due to the high rate of application, inhalation monitoring may be warranted, however, there is currently no inhalation toxicology end-point of concern.

In the revised protocol please add the second application. In addition, clarify if it is the leaf samples or the dislodging solution that will be fortified. Because high FDR rates are

expected in this study, OREB suggests adding another fortification level.

cc: J. Evans, OREB
Correspondence File
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