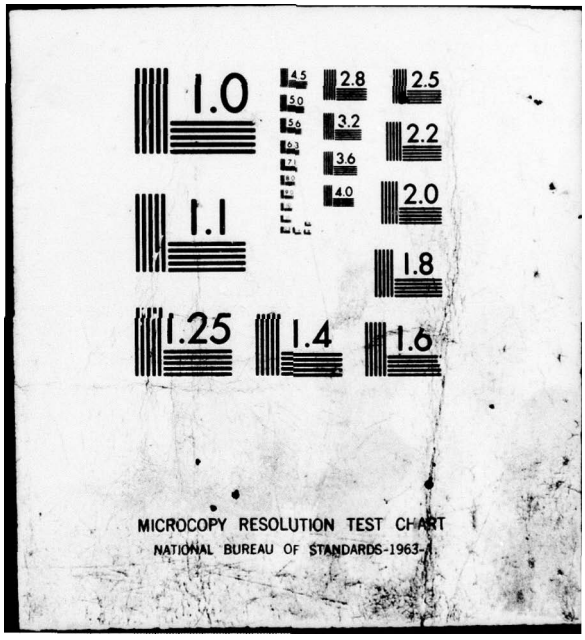
AD-A073 180 ARMY ENVIRONMENTAL HYGIENE AGENCY ABERDEEN PROVING GR--ETC F/G 6/20
TOPICAL HAZARD EVALUATION PROGRAM OF CANDIDATE INSECT REPELLENT--ETC(U)
AUG 79 A W SINGER

UNCLASSIFIED USAEHA-75-51-0097-79 NL

1 OF 1
AD A073180

END
DATE FILMED
9-79
DDC


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
5.0
5.6
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

12 B.S.

LEVEL II

UNITED STATES ARMY ENVIRONMENTAL HYGIENE AGENCY

ABERDEEN PROVING GROUND, MD 21010

(6) TOPICAL HAZARD EVALUATION PROGRAM
OF CANDIDATE INSECT REPELLENTS AI3-37410a AND AI3-37411a
US DEPARTMENT OF AGRICULTURE PROPRIETARY CHEMICALS,
~~STUDY NUMBERS 75-51-0097-79 AND 75-51-0098-79~~
MARCH 1978 - JUNE 1979,

(9) Final rept., (11) 17 Aug 79

(10) Allen W. Singer (12) 37 p.

(14) USAEHA-75-51-0097-79
USAEHA-75-51-0098-79

Approved for public release; distribution unlimited.

AEHA

038 150 LB

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER 75-51-0097-79 and 75-51-0098-79	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Topical Hazard Evaluation Program of Candidate Insect Repellents AI3-37410a and AI3-37411a, US Department of Agriculture Proprietary Chemicals, Study Nos. 75-51-0097-79 and 75-51-0098-79, March 1978 - June 1979		5. TYPE OF REPORT & PERIOD COVERED Final, Mar 78 - June 79 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) ALLEN W. SINGER, CPT, VC		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS US Army Environmental Hygiene Agency Aberdeen Proving Ground, MD 21010		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Commander US Army Health Services Command Fort Sam Houston, TX 78234		12. REPORT DATE Mar 78 - Jun 79 13. NUMBER OF PAGES 4
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Topical Hazard Evaluation
USDA Proprietary Chemicals
AI3-37410a
AI3-37411a
skin irritation
Candidate Repellent
Eye Irritation

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Hazard evaluations of candidate insect repellents AI3-37410a and AI3-37411a were performed by means of laboratory studies using New Zealand White rabbits. The technical grade compounds caused mild primary irritation to intact and abraded skin, in addition to severe corneal and conjunctival irritation.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

DEPARTMENT OF THE ARMY
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010

CPT Singer/jg/AUTOVON
584-3980

17 AUG 1979

HSE-LT-T/WP

SUBJECT: Topical Hazard Evaluation Program of Candidate Insect Repellents AI3-37410a and AI3-37411a, US Department of Agriculture Proprietary Chemicals, Study Nos. 75-51-0097-79 and 75-51-0098-79, March 1978 - June 1979

Executive Secretary
Armed Forces Pest Control Board
Forest Glen Section, WRAMC
Washington, DC 20012

A summary of the pertinent findings and recommendations of the inclosed report follows:

Hazard evaluations of candidate insect repellents AI3-37410a and AI3-37411a were performed by means of laboratory studies using New Zealand White rabbits. The technical grade compounds caused mild primary irritation to intact and abraded skin, in addition to severe corneal and conjunctival irritation. It was recommended that AI3-37410a and AI3-37411a not be approved for further testing as candidate insect repellents. If, however, these compounds present a significant improvement in pest repellent properties over existing compounds, it is recommended that they be resubmitted in their proposed use formulations and/or concentrations.

FOR THE COMMANDER:

BRENDAN E. JOYCE, Ph.D.
LTC(P), MSC
Director, Laboratory Services

1 Incl
as (5 cy)

CF:
HQDA (DASG-PSP)
Cdr, HSC (HSPA-P)
Dir, Advisory Ctr on TOX, NRC
Supt, AHS (HSA-IPM)
USDA, ARS-Southern Region
USDA, ARS (Dr. Terrence McGovern)

DEPARTMENT OF THE ARMY
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010

HSE-LT-T/WP

TOPICAL HAZARD EVALUATION PROGRAM OF CANDIDATE INSECT REPELLENTS AI3-37410a AND AI3-37411a US DEPARTMENT OF AGRICULTURE PROPRIETARY CHEMICALS STUDY NUMBERS 75-51-0097-79 AND 75-51-0098-79 MARCH 1978 - JUNE 1979

1. AUTHORITY.

a. Letter, US Department of Agriculture - Agricultural Research Service, Southern Region, Insects Affecting Man and Animal Research Laboratory, Gainesville, Florida, 23 March 1978.

b. Memorandum of Understanding between the Department of the Army, Office of The Surgeon General; the US Army Health Services Command; the US Army Environmental Hygiene Agency; the Armed Forces Pest Control Board, and the US Department of Agriculture, effective 1970 with Amendment No. 1 effective August 1974.

2. REFERENCE. Toxicology Division Procedural Guide, USAEHA, 1972, revised 1976.

3. PURPOSE. The purpose of this study is to provide guidance for further entomological testing of the candidate insect repellents AI3-37410a and AI3-37411a.

4. SUMMARY OF FINDINGS. Hazard evaluations of the candidate repellents AI3-37410a and AI3-37411a, USDA Proprietary Chemicals, were conducted by this Agency using New Zealand White rabbits for skin and eye studies. A tabular presentation of animal toxicity data developed in this Agency follows:*†

---

* In conducting the studies described in this report, the investigators adhered to the "Guide for the Care and Use of Laboratory Animals," US Department of Health, Education, and Welfare Publication No. (NIH) 74-23, revised in 1972, and in 1978.

† The experiments reported herein were performed in animal facilities, fully accredited by the American Association for the Accreditation of Laboratory Animal Care.

Topical Hazard Eval Study Nos. 75-51-0097-79 and 75-51-0098-79, Mar 78-Jun 79

TABULAR PRESENTATION OF DATA

Test	Results	Interpretation
SKIN IRRITATION STUDIES		
Rabbits		
Single 24-hour application to intact and abraded skin of New Zealand White rabbits. 0.5 ml technical grade compound applied to each of six rabbits.	Compounds AI3-37410a and and AI3-37411a produced mild primary irritation of the intact skin and skin surrounding an abrasion.	USAEHA Category II (ref Appendix)
EYE IRRITATION STUDIES		
Rabbits		
Single 24-hour application of 0.1 ml technical grade compound to one eye of each of six New Zealand White rabbits.	Compound AI3-37410a produced moderate irritation of the cornea and conjunctiva of all six rabbits. Irritation was still present 72 hours after instillation, although complete healing occurred by 7 days in all rabbits.	USAEHA Category E (ref Appendix)
	Compound AI3-37411a produced severe irritation of the cornea and conjunctiva of all six rabbits. Irritation was present 72 hours after instillation, and complete healing had occurred by 7 days.	USAEHA Category F (ref Appendix)

5. CONCLUSION. Technical grade compounds AI3-37410a and AI3-37411a caused mild primary irritation of the skin and severe corneal and conjunctival irritation in all rabbits tested. As such, they do not qualify as nonhazardous insect repellents.

6. RECOMMENDATION. Under the provisions of the Memorandum of Understanding (paragraph 1b), it is recommended that AI3-37410a and AI3-37411a, USDA Proprietary Chemicals, not be approved for further testing as candidate insect repellents. If these compounds show a significant improvement in pest repellent properties over existing compounds, it is suggested that they be resubmitted in their proposed use formulations and/or concentrations.

Allen W. Singer

ALLEN W. SINGER
CPT, VC
Laboratory Veterinary Officer
Toxicology Division

APPROVED:

Arthur H McCreesh

ARTHUR H. McCREESH, Ph.D.
Chief, Toxicology Division

TOPICAL HAZARD EVALUATION PROGRAM
DEFINITIONS OF CATEGORIES OF COMPOUNDS BEING CONSIDERED FOR ACUTE SKIN APPLICATION

CATEGORY I - Compounds producing no primary irritation of the intact skin or no greater than mild primary irritation of the skin surrounding an abrasion. (INTERPRETATION: No restriction for acute application to the human skin.)

CATEGORY II - Compounds producing mild primary irritation of the intact skin and the skin surrounding an abrasion. (INTERPRETATION: Should be used only on human skin found by examination to have no abrasions or may be used as a clothing impregnant.)

CATEGORY III - Compounds producing moderate primary irritation of the intact skin and the skin surrounding an abrasion. (INTERPRETATION: Should not be used directly on the skin without a prophetic patch test having been conducted on humans to determine irritation potential to human skin. May be used without patch testing, with extreme caution, as clothing impregnants. Compound should be resubmitted in the form and at the intended use concentration so that its irritation potential can be reexamined using other test techniques on animals.)

CATEGORY IV - Compounds producing moderate to severe primary irritation of the intact skin and of the skin surrounding an abrasion and, in addition, producing necrosis, vesiculation, and/or eschars. (INTERPRETATION: Should be resubmitted for testing in the form and at the intended use concentration. Upon resubmission, its irritation potential will be reexamined using other test techniques on animals, prior to possible prophetic patch testing in humans, at concentrations which have been shown not to produce primary irritation in animals.)

CATEGORY V - Compounds impossible to classify because of staining of the skin or other masking effects owing to physical properties of the compound. (INTERPRETATION: Not suitable for use on humans.)

EYE CATEGORIES:

A. Compounds noninjurious to the eye. INTERPRETATION: Irritation of human eyes is not expected if the compound should accidentally get into the eyes, provided it is washed out as soon as possible.

B. Compounds producing mild injury to the cornea. INTERPRETATION: Should be used with caution around the eyes.

C. Compounds producing mild injury to the cornea, and in addition some injury to the conjunctiva. INTERPRETATION: Should be used with caution around the eyes and mucosa.

D. Compounds producing moderate injury to the cornea. INTERPRETATION: Should be used with extreme caution around the eyes.

E. Compounds producing moderate injury to the cornea, and in addition producing some injury to the conjunctiva. INTERPRETATION: Should be used with extreme caution around the eyes and mucosa.

F. Compounds producing severe injury to the cornea and to the conjunctiva. INTERPRETATION: Should be used with extreme caution. It is recommended that use be restricted to areas other than the face.