IBT DATA GAP EVALUATION FORM

23 FEB 1982

Shaughnessy No. 013803

Chemical MSMA (Monosodium Methanearsonate)

EEB File Reviewed for Supportive F & W Studies:

Test Material	Species	Test	IBT Test #	Test Status Valid	Test Status Invalid	Major IBT Gap
51.3 % Tech.	Bobwhite Quail	LC50	651-03392		I	*X
51 3 % Tech.	Mallard Duck	LC50	651-03393		I	*X

Uses: Preplant and postemergent herbicide in citrus, cotton, agricultural premises, ditchbanks, and forest site preparation.

Data Gaps: Missing valid studies for all six basic Fish and Wildlife tests.

Six Basic Studies on Technical Material	Technical Have	Technical Major Data Gap	Formulations Powder Have	Formulations Powder Data Gap	Formulations Granular (5 %) Have	Formulations Granular (5 %) Data Gap	Formulations Emul. Conc. (60? %) Have	Formulations Emul. Conc. (60? %) Data Gap
Avian Acute Oral LD50								
Avian Upland Game LC50		*X						
Avian Waterfowl LC50		*X						
Warm-water Fish LC50								
Cold-Water Fish LC50								
Aquatic Invert. EC50								
Additional Studies:								
Estuarine Fish LC50								
Estuarine Shrimp EC50								
Molluscan Larvae EC50								
Shell Deposition EC50								
Estuarine Algae EC50								
Fish Accumulation								
Avian Accumulation								
Avian Field Study								
Upland Game Species								
Waterfowl Species								
Avian Reproduction								
Upland Game Species								
Waterfowl Species								

Reviewer: William S. Rabert

William S. Rabert, Biologist
Ecological Effects Branch, HED

* Replacement study should be conducted on the technical grade.

013503
+
035803

DATA EVALUATION

1. CHEMICAL: Herban (Norea, Hercules AC-7531)

2. FORMULATION:

Active ingredients: 28.60% Monosodium methanearsonate
13.8% Norea (3-(hexahydra-4,7 methanoindan-5yl)-1,1-dimethylurea)

3. CITATION: Acute Oral Toxicity Study of Herban Bobwhite Quail; IBT study J-6354 for Boots Hercules, Inc. 8/8/68

REVIEWER'S NOTE: This was an 8-day dietary test, not an acute oral test.

4. REVIEWED BY: Thomas B. Johnston
Biologist, EEB/HED

5. REVIEW DATE: April 23, 1981

6. TEST TYPE: Avian 8-Day Subacute Dietary LC_{50}

7. REPORTED RESULTS: The 8-day dietary LC_{50} for 10-week-old bobwhite quail was estimated to be greater than 5620 ppm.

8. REVIEWER'S CONCLUSIONS: This study is scientifically sound, but does not fulfill the guideline requirements for a subacute dietary LC_{50} from an upland gamebird. With an 8-day dietary LC_{50} greater than 5620 ppm, Herban is practically non-toxic to 10-week-old bobwhite quail.

Materials/Methods

Protocol generally followed USEPA guideline requirements. Birds 10 weeks old were used instead of birds 10-17 days old. The test was run on the formulated product, rather than on the technical grade of the active ingredients.

Statistical Analysis

Lack of mortality prevented statistical analysis.

Discussion/Results

Concentrations (ppm)	No. Dead/No. Exposed
5620	0/10
3830	0/10
2610	0/10
1780	0/10
1210	0/10
826	0/10
Controls	0/30

LC_{50}>5620 ppm

Conclusions:

Validation Category: Supplemental

Category Rationale: The study is scientifically sound, but USEPA guidelines require that studies be run on the technical grade of the active ingredients. This test was run on a formulated product. This test was also run on birds 10 weeks old, rather than on birds 10-17 days old as recommended in the guidelines. These older birds would probably show less susceptibility to toxic substances. This study was run several years prior to the publication of the guidelines, which may account for these shortcomings.

Category Repairability: This study cannot be repaired to Core, because of the use of 10-week-old test birds.

Thomas B. Johnston
Biologist, EEB

April 23, 1981

Thomas B. Johnston

Norm Cook
Section Head, EEB

Norman Cook 4/23/81

Clayton Bushong
Branch Chief, EEB

Clayton Bushong 4/24/81

013803 MSMA
MULTIPLE

TDMS0030 DATA EVALUATION RECORD PAGE 1 OF 8

CASE GS0016 AMMONIUM SULFAMATE PM 210 09/10/80

CHEM 005501 Ammonium sulfamate

BRANCH EEB DISC 40 TOPIC 05050045

FORMULATION 90 - FORMULATION NOT IDENTIFIED

FICHE/MASTER ID 00018842 CONTENT CAT 02

Atkins, E.L., Jr.; Anderson, L.D.; Greywood, E.A. (1969) Effect of Pesticides on Apiculture: Project No. 1499; Research Report CF-7501. (Unpublished study received May 8, 1971 under 1F1174; prepared by Univ. of California--Riverside, Dept. of Entomology, submitted by Ciba Agrochemical Co., Summit, N.J.; CDL:090973-B)

SUBST. CLASS = S.

DIRECT RVW TIME = 2 Hrs. (MH) START-DATE 10/16/80 END DATE 10/16/80

REVIEWED BY: Allen W. Vaughan
TITLE: Entomologist
ORG: EEB/HED
LOC/TEL: Crystal Mall #2 557-0268

SIGNATURE: Allen W. Vaughan DATE: 2-4-81

APPROVED BY:
TITLE:
ORG:
LOC/TEL:

SIGNATURE: DATE:

CONCLUSIONS: This study is scientifically sound. See Table 1 for results.

METHODS AND MATERIALS:

Test Type: Toxicity to bees.

A. Test Species: Honey bees, (Apis mellifera)

Test Procedures: A bell-jar vacuum duster is used to apply the pesticide, mixed with a pyrolite dust diluent, to the test bees. Dosages of dust are weighed, bees are aspirated into dusting cages and treated, and bees are then transferred into holding cages. Observations are recorded at 12, 24, 48, 72, and 96 hours.

REPORTED RESULTS: Results are reported in Table 1. Pesticides are grouped according to their relative toxicity to honey bees. Ammonium sulfamate (AMS) is relatively non-toxic to honey bees.

Discussion/Results

See table for LD_{50} values, slope values, and toxicity categories.

Statistical Analysis

Analysis of the data was performed to enable the authors to determine LD_{50} values of pesticides from either dosage-mortality curves or from LC_{50} values. The slope value was also obtained from the dosage-mortality curve.

Table 1.--1969 Laboratory Comparative Toxicity Tests on Honey Bees (cont.)

Pesticide	ug/ bee	LD value	Slope value	Type of Activity 1/
Ethrel® (68-240)	12.09	7.0		GR
bromoxynil (Brominil®, Buctril®)	14.50	2.0		
Topcide (S-6173)	14.50	2.4		H
amiben (Amiben®, ammonium salt)	14.50	2.8		H
cypromid (Clobber®, S-6000)	14.50	2.9		H
2,4-DB (Butyrac® 118,4-(2,4-DB), 2,4-D-butyric, dimethylamine salt)	14.50	3.6		H
barban (Carbyne®)	14.50	5.6		H
benefin (Balan®)	14.50	7.1		H
picloram (Tordon® 22K)	14.50	7.4		H
2,4-D, low volatile oil sol. form (Dacamine®)	18.13	6.4		H
erbon (Baron®)	18.13	6.6		H
chloropropylate (Acaralate®)	24.17	1.6		A
bensulide (Prefar®, Betasan®, R-4461)	24.17	1.6		H
MCPA (Weedar®)	24.17	2.4		H
propanil (DPA, Stam® F-34, Rogue®)	24.17	3.7		H
Indopol® (Polybutenene H-300)	24.17	3.7		solvent
MSMA (Ansar® 170, Daconate®)	24.17	4.1		H
Pipron®	36.26	2.0		P

PA 26250

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

BIOLOGICAL REPORT OF ANALYSIS

1. SAMPLE NO.	2. DATE COLLECTED	3. REGION
123436	N/A	N/A

SAMPLE IDENTIFICATION

4. LOT OR CODE NO(S).	5. EPA REGISTRATION NO.	6. ESTABLISHMENT NO.
PB 3981	9779-133	N/A

7. PRODUCT NAME
Riverside 912 Herbicide

8. PRODUCER NAME AND ADDRESS *(Include ZIP code)*	9. DEALER NAME AND ADDRESS *(Include ZIP code)*
Riverside Chemical Company Pine Bluff, Arkansas	N/A

10. PHYSICAL FORM		EMULS. CONC.		PRESS. SPRAY		DUST		GRANULAR
		WET. POWDER		AEROSOL		BAIT	X	OTHER liquid

11. INGREDIENTS
Monosodium Acid Methanearsonate 48.0%

TEST

12. TYPE OF TEST	13. TEST ORGANISM(S)	14. METHOD NO.	TSD 1.206
Static jar Test #1049	Bluegill (Lepomis macrochirus) Average weight: 0.56 gm. Source: Harrison Lake National Fish Hatchery	15. DURATION	96 hr
		16. CONCENTRATION	32-180 ppm
		17. DILUENT	None

18. SUMMARY

All information in this report is based on total formulation.
There was no mortality at a concentration of 180 ppm within the 96 hour observation period.

19. RESULTS

This product was added to vessels, each containing 10 bluegill, to obtain concentrations ranging from 32 to 180 ppm. No mortality occurred in the highest concentration tested during the 96 hour observation period.

20. TESTER'S INITS.	21. SIGNATURE OF LAB SUPERVISOR	22. LABORATORY	23. DATE
F.G.P.	[signature]	Animal Biology	12/21/76

EPA Hq Form 8510-14 (10-76)

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8