

Shaughnessy No. 013803

Chemical MSMA (Monosodium Methanearsonate)

EEB File Reviewed for Supportive F & W Studies:

Test Material	Species	Test	IBT Test #	Test Status		Major IBT Gap
				Valid	Invalid	
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		Formulations				Emul. Conc.	
	Have	Major Data Gap	Powder Have	Powder Data Gap	Granular (5 %) Have	Granular (5 %) Data Gap	Emul. Conc. (60? %) Have	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.

DATA EVALUATION

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

2. FORMULATION:

Active ingredients: 28.60% Monosodium methanearsonate
13.8% Norea (3-(hexahydro-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 LC₅₀

7. REPORTED RESULTS: The 8-day dietary LC₅₀ 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 LC₅₀ from an upland gamebird.
With an 8-day dietary LC₅₀ 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

LC₅₀ > 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 LD₅₀ values, slope values, and toxicity categories.

Statistical Analysis

Analysis of the data was performed to enable the authors to determine LD₅₀ values of pesticides from either dosage-mortality curves or from LC₅₀ 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



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

BIOLOGICAL REPORT OF ANALYSIS

PA 26250

1. SAMPLE NO.

123436

2. DATE COLLECTED

N/A

3. REGION

N/A

SAMPLE IDENTIFICATION

4. LOT OR CODE NO(S).

PB 3981

5. EPA REGISTRATION NO.

9779-133

6. ESTABLISHMENT NO.

N/A

7. PRODUCT NAME

Riverside 912 Herbicide

8. PRODUCER NAME AND ADDRESS (Include ZIP code)

Riverside Chemical Company
Pine Bluff, Arkansas

9. DEALER NAME AND ADDRESS (Include ZIP code)

N/A

10. PHYSICAL FORM

EMULS. CONC.

WET. POWDER

PRESS. SPRAY

AEROSOL

DUST

BAIT

GRANULAR

X OTHER liquid

11. INGREDIENTS

Monosodium Acid Methanearsonate 48.0%

TEST

12. TYPE OF TEST

Static jar
Test #1049

13. TEST ORGANISM(S)

Bluegill (*Lepomis macrochirus*)

Average weight: 0.56 gm.

Source: Harrison Lake National Fish

14. METHOD NO.

TSD 1.206

15. DURATION

96 hr

16. CONCENTRATION

32-180 ppm

17. DILUENT

None

18. SUMMARY

Hatchery

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.

F.G.P.

21. SIGNATURE OF LAB SUPERVISOR

John A. McLaughlin

22. LABORATORY

Animal Biology

23. DATE

12/21/76