8.26-92

MRID No. 417778-01

DATA EVALUATION RECORD

1. **CHEMICAL:** Oxytetracycline.
Shaughnessey No. 006304.

2. **TEST MATERIAL:** Calcium oxytetracycline; 60.4% purity; a tan powder.

3. **STUDY TYPE:** Avian Single Dose Oral LD_{50} Test.
Species Tested: Bobwhite quail (*Colinus virginianus*).

4. **CITATION:** Campbell, S., K.A. Hoxter, and G.J. Smith. 1991. Oxytetracycline Calcium Complex: An Acute Oral Toxicity Study with the Northern Bobwhite. Project No. 260-103A. Performed by Wildlife International Ltd., Easton, MD. Submitted by Pfizer Incorporated, New York, NY. EPA MRID No. 417778-01.

5. **REVIEWED BY:**

Mark A. Mossler, M.S.
Associate Scientist
KBN Engineering and
Applied Sciences, Inc.

Signature: Mark Mossler
Date: 4/27/92

6. **APPROVED BY:**

Michael Whitten, M.S.
Wildlife Toxicologist
KBN Engineering and
Applied Sciences, Inc.

Signature: Michael L. Whitten
Date: 4/27/92

Henry T. Craven, M.S.
Supervisor, EEB/EFED
USEPA

Signature: Anne Stavola
Date: 8/26/92

7. **CONCLUSIONS:** This study is scientifically sound and meets the requirements for an acute oral toxicity test using bobwhite quail. The LD_{50} value of >2000 mg ai/kg classifies oxytetracycline calcium complex as practically non-toxic to bobwhite quail. The NOEL was 250 mg ai/kg.

8. **RECOMMENDATIONS:** N/A.

9. **BACKGROUND:**

10. **DISCUSSION OF INDIVIDUAL TESTS:** N/A.

11. MATERIALS AND METHODS:

A. Test Animals: The birds used in the study were 18-week-old bobwhite quail (*Colinus virginianus*) obtained from a supplier in Phillipsburg, NJ. The birds were from the same hatch, pen-reared and phenotypically indistinguishable from wild birds. They were acclimated to the laboratory for 7 weeks prior to testing and ranged in weight from 170 to 206 g at test initiation. Except for a 15-hour fasting period immediately prior to dosing, water and a game bird ration were offered *ad libitum* during acclimation and testing. No antibiotics were administered during the test.

Fritts Quail Farm

B. Test System: All birds were housed indoors in pens constructed of galvanized wire and galvanized sheeting (side walls). The floors (78 x 51 cm) of the pens were sloped giving a ceiling height which ranged from 20 to 25 cm. Fluorescent lights provided 8 hours of 130 lux illumination per day. The average temperature was 25 ±1°C and the average relative humidity was 28 ±2%.

C. Dosage: Fourteen-day single dose oral LD_{50} test. Five nominal dosages [125, 250, 500, 1000, and 2000 mg active ingredient (ai)/kg of body weight] and a diluent (water) control were used in the test.

D. Design: Groups of ten birds (five males and five females) were assigned to each treatment and control group by random draw. Each dosage group was assigned two pens in which the birds were segregated by sex.

The test substance was dispersed in water and intubated directly into the crop or proventriculus of each bird using a stainless steel cannula. Each bird was individually weighed and dosed on the basis of milligrams of test substance per kilogram of body weight. The control birds received a corresponding volume of water only. Each bird received a constant dosage volume of 6 ml per kilogram of body weight.

All birds were observed once a day during acclimation and at least twice daily during testing for mortality, signs of toxicity, and abnormal behavior. The birds were individually weighed at test initiation and by group on days 3, 7, and 14. Group food consumption was determined for days 0-3, 4-7, and 8-14 by measuring the change in feed presented to the birds over a period of

time. However, this is an estimate due to wastage by the birds.

Samples of each dosing solution were taken to determine the homogeneity and concentration of the test material. The samples were sent to Hazleton Laboratories America, Inc., for analysis by microbial zone inhibition.

E. **Statistics:** The LD_{50} was estimated by visual inspection due to the pattern of mortality in this study.

12. **REPORTED RESULTS:** There were no mortalities in the control or treatment groups. All birds in these groups were normal in appearance and behavior.

There were no reductions in body weight gain or feed consumption in the treatment groups in comparison to the controls (Table 2, attached).

13. **STUDY AUTHOR'S CONCLUSIONS/QUALITY ASSURANCE MEASURES:** The acute oral LD_{50} value for bobwhite quail exposed to oxytetracycline calcium complex was determined to be greater than 2000 mg ai/kg. The no mortality dosage and no-observed-effect dosage was ~~2000~~ 50 mg ai/kg.

Quality Assurance and Good Laboratory Practice statements were included in the biological and analytical reports which indicated compliance with the regulations set forth in 40 CFR Part 160.

14. **REVIEWER'S DISCUSSION AND INTERPRETATION OF STUDY RESULTS:**

A. **Test Procedure:** The test procedures were in accordance with Subdivision E, ASTM, and SEP guidelines with the following exceptions:

Necropsies were not performed. These are recommended, but not required by the guidelines.

Group body weights, rather than individual body weights, were taken at the end of the test.

B. **Statistical Analysis:** Upon review of the mortality data, the reviewer concurs that the LD_{50} was greater than 2000 mg ai/kg.

C. **Discussion/Results:** A review of the analytical portion of the report (included separately) indicated that the

concentrations of test material were at or above the nominal concentrations.

Upon review of the body weight gain data, it appears that there was a treatment related reduction during the test period for the three highest treatment levels (500, 1000, and 2000 mg ai/kg). The no-observed-effect level (NOEL) was therefore determined to be 250 mg ai/kg.

This study is scientifically sound and meets the requirements for an acute oral toxicity test using bobwhite quail. The LD_{50} value of >2000 mg ai/kg classifies oxytetracycline calcium complex as practically non-toxic to bobwhite quail. The NOEL was determined to be 250 mg ai/kg based on a reduction in body weight gain in the three highest treatment groups.

D. Adequacy of the Study:

(1) **Classification:** Core.

(2) **Rationale:** N/A.

(3) **Repairability:** N/A.

15. COMPLETION OF ONE-LINER: Yes, 4-14-92.

Page 5 is not included in this copy.

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Shaughnessey # 006304 Chemical Name Oxytetracycline calcium complex Chemical Class _____ Page 1 of 1

Study/Species/Lab/ MRID #	Chemical % a.i.	Results	Reviewer/ Date	Validation Status

14-Day Single Oral LD_{50}	60.4	LD_{50} = >2000 mg/kg (* 95% C.L. N/A) Control Mortality (%) = 0
		Slope = N/A # Animals/Level = 10 Age (Days) = 126
		Sex = 5 ♀ 5 ♂
		14-Day Dose Level mg/kg/(% Mortality) *
		125 (0), 250 (0), 500 (0), 1000 (0), 2000 (0)
		Comments: based on active ingredient. NOEL = 250 mg ai/kg
			M. Hosseini 4/14/92	Core

Species: Colinus virginianus				
Lab: Wildlife International				
MRID #: 417778-01				
8-Day Dietary LC_{50}	_____	LC_{50} = pp (95% C.L.) Control Mortality (%) = Slope = # Animals/Level = Age (Days) = Sex = 8-Day Dose Level pp /(% Mortality) ( ), ( ), ( ), ( ), ( ) Comments:	_____	_____
Species				
Lab				
MRID #				