5 EIS F. Yes

10/16/92

MRID No. 416041-01

DATA EVALUATION RECORD

1. **CHEMICAL:** Iprodione
   Shaughnessey Number: 109801

2. **TEST MATERIAL:** Iprodione; 96.2% purity; EPA Est No. 264-NC-01; Reference #8906201; Wildlife International Ltd. Identification No. WIL-1478; off-white granular solid.

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

4. **CITATION:** Culotta, J., K.A. Hoxter, G.J. Smith, M. Jaber. 1990. Iprodione: An Acute Oral Toxicity Study with the Northern Bobwhite. Study performed by Wildlife International Ltd., Easton, Maryland. Laboratory project #171-120. Submitted by Rhone-Poulenc Ag Company, Research Triangle Park, NC. EPA MRID No. 416041-01.

5. **REVIEWED BY:**

   Marise H. Robbins, M.S.E.S., M.A. — Signature: Marise H. Robbins
   Associate Scientist
   KBN Engineering and — Date: 4/12/91
   Applied Sciences, Inc.

6. **APPROVED BY:**

   James R. Newman, Ph.D. — Signature: James R. Newman
   Project Manager/
   Principal Scientist — Date: 4/16/91
   KBN Engineering and
   Applied Sciences, Inc.

   Henry T. Craven, M.S. — Signature: Henry T. Craven 10/16/92
   Supervisor, EEB/HED
   USEPA — Date:

   Dennis J. McFee 10-5-92

7. **CONCLUSIONS:** Based upon nominal concentrations, the LD_{50} was greater than 2000 mg a.i./kg. This classifies the test material as practically non-toxic to bobwhite quail. The no-observed-effect-level could not be determined. The study is scientifically sound and fulfills the requirements of an avian single oral dose LD_{50} test.

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 23-week-old bobwhite quail (Colinus virginianus) obtained from Fritts' Quail Farm, Phillipsburg, New Jersey. Bobwhite ranged in weight from 170 grams to 232 grams at test initiation. All birds were from the same hatch, pen-reared and phenotypically indistinguishable from wild birds. All test birds were acclimated to the caging and facilities for 6 weeks prior to the initiation of the study. During acclimation all birds were observed daily. Birds exhibiting abnormal behavior or physical injury were not used.

B. **Test System:** All birds were housed indoors in pens with external walls, ceilings and floors constructed of galvanized wire while side walls were constructed of galvanized sheeting. Each pen's floor space measured approximately 78 cm X 51 cm. Floors were sloped so that ceiling height ranged from approximately 20 to 25 cm. The photoperiod was eight hours of light per day during acclimation and throughout the study. The light source was Chroma 50 fluorescent lights which closely approximate noon-day sunlight. The birds received approximately 130 lux of illumination. The birds were maintained at ambient room temperature. Average temperature for this study was 17°C ± 2°C (SD) with an average relative humidity of 32% ± 14% (SD).

C. **Dosage:** 14-day single dose oral LD_{50} test. The dosages were established based on "known toxicity data". The concentration of the test substance in the diluent was adjusted to provide a constant volume to body weight dosage for all treatment birds. All dosages were adjusted to 100% active ingredient. Therefore, all dosages and the LD_{50} value are reported as mg a.i. per kilogram of body weight. Nominal dosages used in this study were 125, 250, 500, 1000 and 2000 milligrams active ingredient (a.i.) of Iprodione per kilogram of body weight.

D. **Design:** Groups of ten northern bobwhite, five males and five females, were assigned to each of the five treatment groups and the control group by random draw. Throughout acclimation and testing all birds were fed a game bird ration formulated to Wildlife International Ltd.'s specifications. Water, from the town of Easton's public water supply, and feed were supplied ad libitum during acclimation and the test except when the birds were fasted for a minimum of 15 hours prior to dosing. The birds received no form of antibiotic medication during the study.

The test substance was dispersed in corn oil. At initiation of the test, a single dose of the test substance in diluent was orally intubated directly into the crop or proventriculus of each bird using a stainless steel catheter. 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 corn oil only. All birds received a constant dosage volume of 6 milliliters per kilogram of body weight.

The birds were individually weighed at initiation of the test and by groups on Days 3, 7, and 14 of the test. Average estimated feed consumption was determined for each dosage group and the control for Days 0-3, 4-7, and 8-14. Feed consumption was determined by measuring the change in the weight of the feed presented to the birds over a given period of time. However, feed consumption is presented as an estimate due to the unavoidable wastage by the birds.

All birds were observed at least twice daily during the test. A record was maintained of all mortality, signs of toxicity, or abnormal behavior.

E. **Statistics:** The pattern of mortality in this study did not facilitate the calculation of an LD_{50} value. Therefore, an estimation of the LD_{50} value was made by a visual inspection of the mortality data.

12. **REPORTED RESULTS:** "There were no mortalities in the control group. All birds were normal in appearance and behavior throughout the test period (Table 1, attached)".

"There were no mortalities at any of the dosages tested (Table 1, attached). The only clinical signs noted during

the study were lethargy and a ruffled appearance. Signs were apparent at all dosages, but the incidence of the signs appeared dose dependent. Clinical signs at the 125, 250 and 500 mg/kg dosages were first noted on Days 7, 5 and 6, respectively. Signs at those three dosages persisted from 1/2 day to 4 1/2 days after which birds were normal in appearance and behavior. At the 1000 and 2000 mg/kg dosages, clinical signs were first noted on Day 2. By Day 10, all birds at those dosages had recovered and were normal in appearance and behavior throughout the remainder of the study".

"When compared to the controls, from Day 0 to Day 3, there was a reduction in body weight gain in males at the 250 mg a.i./kg dosage, and no weight gain in males at the 1000 mg a.i./kg dosage. There was a loss in body weight in females at the 1000 mg a.i./kg dosage, and in all birds at the 500 and 2000 mg a.i./kg dosages. From Day 4 to Day 7 there was a loss in body weight in females at the 1000 mg a.i./kg dosage, and in all birds at the 2000 mg a.i./kg dosage. There was a corresponding reduction in feed consumption in females at the 500 mg a.i./kg dosage and in all birds at the 1000 and 2000 mg a.i./kg dosages from Day 0 to Day 3. There was also a reduction in feed consumption in females at the 1000 mg a.i./kg dosage and in all birds at the 2000 mg a.i./kg dosage from Day 4 to Day 7 (Table 2, attached). Between Days 8 and 14 feed consumption in the treated birds was comparable to the controls".

13. **STUDY AUTHOR'S CONCLUSIONS/QUALITY ASSURANCE MEASURES:**
"In conclusion, the acute oral LD_{50} value for northern bobwhite exposed to Iprodione, as a single oral dosage, was greater than 2000 mg a.i./kg, the highest dosage tested. The no mortality level was 2000 mg a.i./kg. The no-observed-effect-level was less than 125 mg a.i./kg, the lowest dosage tested".

The report stated that the study was conducted in conformance with Good Laboratory Practice regulations. Quality assurance audits were conducted and the final report was signed by the Quality Assurance Officer of Wildlife International Ltd.

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

A. **Test Procedure:** The test procedures were in accordance with Subdivision E - Hazard Evaluation: Wildlife and

Aquatic Organisms, and SEP guidelines except for the following deviations:

Both the average ambient temperature 17°C ± 2°C (SD) and the average relative humidity (32% ± 14%) were somewhat low during the test.

The photoperiod was 8 hours of light per day; the guidelines recommend 10 hours of light per day.

According to the guidelines, all birds should be individually weighed at the beginning of the test and on Day 14. In this test, individual measurements were taken only on Day 0, with group measurements for the remainder of the test.

B. **Statistical Analysis:** Since no birds died in the test, the LD_{50} cannot be calculated and is assumed by the reviewer to be greater than 2000 mg a.i./kg, the highest concentration tested.

C. **Discussion/Results:** No mortality occurred in the controls or from dosage with Iprodione. The reviewer agrees with the authors that the incidence of clinical signs (lethargy and ruffled appearance), reduced average body weight gain, and decreased feed consumption appears to be dose dependent. The greatest, most rapid decrease in average body weight and feed consumption occurred at the higher dosages. All birds were normal in appearance and behavior after Day 10.

The male bobwhite quail showed a reduced body weight gain (in comparison to the controls) at a lower dosage than female birds. At 250 mg a.i./kg, during Days 0-3, males showed only a 1.6% body weight gain, whereas the male controls gained 3.5%. Female birds did not show a reduced body weight gain until 500 mg a.i./kg. These results suggest that male bobwhite quail may be more sensitive than female bobwhite quail to treatment with Iprodione.

The registrant should ensure that environmental conditions (e.g. room temperature and relative humidity) are properly controlled. Also, all birds should be individually weighed, not weighed by group.

The LD_{50} was greater than 2000 mg a.i./kg. This value classifies the test material as practically non-toxic to bobwhite quail. The no-observed-effect-level could not be determined due to behavioral signs of toxicity (lethargy and ruffled appearance). These effects should be considered in any risk assessment of this chemical. Altered growth or development of birds caused by exposure to these concentrations in the wild might result in reduced survival rates.

With minor deviations, the study followed recommended guidelines. The study is scientifically sound and meets the requirements for an avian single-dose oral LD_{50} study.

D. **Adequacy of the Study:**

(1) Classification: Core.

(2) Rationale: N/A.

(3) Repairability: N/A.

15. **COMPLETION OF ONE-LINER:** Yes; April 12, 1991.

IPRODIONE

Page_____ is not included in this copy.

Pages 7 through 8 are not included.

The material not included contains the following type of information:

____ Identity of product inert ingredients.

____ Identity of product impurities.

____ Description of the product manufacturing process.

____ Description of quality control procedures.

____ Identity of the source of product ingredients.

____ Sales or other commercial/financial information.

____ A draft product label.

____ The product confidential statement of formula.

____ Information about a pending registration action.

X FIFRA registration data.

____ The document is a duplicate of page(s) _____.

____ The document is not responsive to the request.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

Shaughnessy No. 109801 Chemical Name Iprodione Chemical Class I Page 1 of 1

Study/Species/Lab/Accession	Chemical % a.i.	Results	Reviewer/Date	Validation Status
14-Day Single Dose Oral LD_{50}		LD50 = mg/kg (95% C.L.) Contr. Mort.(%)=		
Species		Slope= # Animals/Level= Age(Days)= Sex =		
Lab		14-Day Dose Level mg/kg/(% Mortality) ( ), ( ), ( ), ( ), ( )		
Acc.		Comments:		
14-Day Single Dose Oral LD_{50}		LD50 > 2000 mg/kg. (95% C.L. —) Contr. Mort.(%)= 0%	M. Lobbins 4/12/91	Core
Species Bobwhite Quail (Colinus virginianus)	96.2%	Slope= NA # Animals/Level= 10 Age(Days)= 161 Sex = M/F		
Lab Wildlife International		14-Day Dose Level mg/kg/(% Mortality) 125 (0), 250 (0), 500 (0), 1000 (0), 2000 (0)		
Acc. 416041-01		Comments: Behavioral signs of toxicity at all dosages		
8-Day Dietary LC_{50}		LC50 = ppm (95% C.L.) Contr. Mort.(%)=		
Species		Slope= # Animals/Level= Age(Days)= Sex =		
Lab		8-Day Dose Level ppm/(%Mortality) ( ), ( ), ( ), ( ), ( )		
Acc.		Comments:		
8-Day Dietary LC_{50}		LC50 = ppm (95% C.L.) Contr. Mort.(%)=		
Species		Slope= # Animals/Level= Age(Days)= Sex =		
Lab		8-Day Dose Level ppm/(%Mortality) ( ), ( ), ( ), ( ), ( )		
Acc.		Comments:		
48-Hour LC_{50}		LC50 = pp__ (95% C.L.) Contr. Mort.(%)= Sol. Contr. Mort.(%)=		
Species		Slope= # Animals/Level= Temperature =		
Lab		48-Hour Dose Level pp /(%Mortality) ( ), ( ), ( ), ( ), ( )		
Acc.		Comments:		
96-Hour LC_{50}		LC50 = pp__ (95% C.L.) Con. Mor(%)= Sol. Con. Mor.(%)=		
Species		Slope= # Animals/Level= Temp.=		
Lab		96-Hour Dose Level pp /(%Mortality) ( ), ( ), ( ), ( ), ( )		
Acc.		Comments:		
96-Hour LC_{50}		LC50 = pp__ (95% C.L.) Con. Mort.(%)= Sol. Con. Mort.(%)=		
Species		Slope= # Animals/Level= Temp.=		
Lab		96-Hour Dose Level pp /(%Mortality) ( ), ( ), ( ), ( ), ( )		
Acc.		Comments:		