

US EPA ARCHIVE DOCUMENT

CASE GS0103 PHORATE PM 300 08/27/82

CHEM 057201 Phorate (O,O-diethyl S-((ethylthio)met

BRANCH EEB DISC 40 TOPIC 05103542 GUIDELINE 40 CFR 163.71-5

FORMULATION 04 - GRANULAR

FICHE/MASTER ID 00092832 CONTENT CAT 01

American Cyanamid Company (1968) Effects of Pesticides on wildlife; Project No. W-116-R-1. (Unpublished study, including letters dated Nov 20, 1970 from W.W. Roberts to A.J. Tafuro and from G.L. Zorb to Anthony Tafuro, received Dec 7, 1970 under 241-53; CUL:001743-A)

SUBST. CLASS = S.

OTHER SUBJECT DESCRIPTORS

SEC: TOX -40-10050042

DIRECT RVW TIME = 5 (MH) START-DATE 5/18/83 END DATE 5/19/83

REVIEWED BY: Ann Stovola  
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DATA EVALUATION RECORD

CHEMICAL: Phorate, Phosphamidon, Diazinon

FORMULATION: Phorate 10G; Others not indicated

CITATION: MRID 00092832. American Cyanamid Co. (1968) Effects of Pesticides on Wildlife: Project No. W-116-R-1. (Unpublished study, including letters dated Nov. 20, 1970 from W.W. Roberts to A.J. Tafuro, and from G. Y. Zorb to Anthony Tafuro, received Dec. 7, 1970 under 241-53; CDL: 001743-A).

REVIEWED BY: Ann Stavola  
Aquatic Biologist  
HED/EEB

DATE REVIEWED: May 19, 1983

TEST TYPE: Large pen - avian field test-Ring-neck Pheasants.

REPORTED RESULTS: Phorate had little effect on caged ring-necked pheasants, but phosphamidon and diazinon affected the birds.

REVIEWER'S CONCLUSIONS:

The phorate study is scientifically sound and meets our guideline requirements for a large pen avian test. The phosphamidon and diazinon studies are not scientifically sound and do not meet our guideline requirements.

Materials and Methods  
Test Procedures

Simulated field applications of phorate (10G) and phosphamidon were made on ring-necked pheasants in 12' x 150' pens. Both pesticides were applied at the rates of 1/2 and 3 pounds per acre. Phorate was applied twice, 23 days apart. Phosphamidon was applied twice, 29 days apart, at the 1/2-pound rate and once at the 3-pound rate.

There were 5 pens, each with 1M and 5F birds for each treatment, plus 5 pens of control birds. Phorate was spread on and around their food supply and over the entire area of the pen. Phosphamidon was sprayed on the cages, and some birds received the direct spray.

In order to clarify how birds received pesticides under spray conditions 11 pens were used with different application methods. Using diazinon at a rate of 5 lb/a, only the food in 3 pens was sprayed; only the birds in 3 pens were sprayed; only 3 pens without the food, water and birds were sprayed; and 2 pens were sprayed in the normal manner.

Results and Discussion

Phorate had little effect on penned pheasants. One bird died 4 days after the first application of 3 lb/a. The remainder of the birds appeared normal at all times.

<u>Treatment</u>	<u>No. Pens</u>	<u>Birds</u>	<u>Dead</u>	<u>Sick</u>	<u># Appl.</u>
Phorate - 1/2 lb.	5	30	0	0	2
Phorate - 3 lb.	5	30	1	0	2

Phosphamidon applied at 1/2 lb/a had no serious effects on pheasants, but at 3 lb/a 90% of the birds were either killed or became immobilized to such an extent they probably would have died under natural conditions. No birds died and 3 became sick after the first application of 1/2 lb/a. After the second application an additional bird died.

<u>Treatment</u>	<u>No. Pens</u>	<u>Birds</u>	<u>Dead</u>	<u>Sick</u>	<u># Appl.</u>
Phos. -1/2 lb	5	30	0	4	2
Phos. - 3 lb	5	30	9	18	1

<u>Diazinon</u> <u>Treatment</u>	<u>Birds Exposed</u>	<u>Sick/Dead</u>
Food only	18	2/15
Birds only	18	0/17
Pen only	18	0/0
Complete Spray	12	0/12

The diazinon results show that contact with a newly sprayed environment did not affect the birds.

The survivors from the phorate and phosphamidon studies were placed in separate pens according to the original treatment and held over the winter. They were returned to their original pens in the spring, and eggs were collected for reproduction trials.

### Hatching Results

There were no differences between control and experimental birds regarding reproduction.

<u>Treatment</u>	<u>Eggs/Hen</u>	<u>% Hatch</u>	<u>% 2 wk chicks</u>
Phorate 1/2	11.0	88.8	75
Phorate 3	11.9	86.3	67
Phos. 1/2	11.0	86.3	70
Phos. 3	11.9	89.3	76
Control	6.5	89.3	68

### Reviewer's Evaluation Materials and Methods

The percents active ingredient of phosphamidon and diazinon are not given.

### Results and Discussion

The results for the phosphamidon and diazinon studies cannot be used in a risk assessment since the percent active ingredient for each pesticide is not given. The results indicate that under the test conditions, phorate when spread around the pens, was not toxic to the pheasants; however the other 2 pesticides which were sprayed onto the birds and their food were toxic. The hatching study implies that there are no residual effects on the survivors regarding ability to produce healthy offspring.

### Conclusions

Category: Invalid for phosphamidon and diazinon since the percents active ingredient were not given. Core for phorate.

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