

CASE GS0140 ALDICARB PM 9/29/82

CHEM 098301

BRANCH EEB DISC TOPIC Special Order

FORMULATION 04 Granular

FICHE/MASTER ID 00101962 CONTENT CAT 01

Haines, R. (1970) Field Evaluations of Potential Hazard of Temik
10G Aldicarb Pesticide to Valley Quail and Ring-necked Pheas-
ants: Trial II. (Unpublished study received Aug 20, 1970 under
OF1008; submitted by Union Carbide Corp., Washington, DC;
COL:091748-E)

SUBST. CLASS 5.

OTHER SUBJECT DESCRIPTORS

PRIM:

SEC:

DIRECT RVN TIME 4 Hrs. (MM) START-DATE 1/12/78 END DATE 1/12/78

REVIEWED BY: Larry Turner

TITLE: EEB

ORG: Biologist

LOC/TEL:

SIGNATURE:

DATE: 1/20/84

APPROVED BY:

TITLE:

ORG:

LOC/TEL:

SIGNATURE:

DATE:

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC #	CHEMICAL NAME	Validator:					Date:		
10%		Aldicarb	Larry Turner					1/12/78		
			Test Type:							
			Small pen field test Valley quail and ring-necked pheasant							
			Test ID.# ES-DD2							

CITATION: Haines, R.G. 1970. Field evaluation of potential hazard of TEMIK 10G Aldicarb pesticide to valley quail and ring-necked pheasants, Trial II. 7 p. Submitted by Union Carbide Corp. Reg # 1016-78; Acc# 230977; submitted 5/15/70, resubmitted 8/5/77.

Results: Bobwhite quail and ring-necked pheasants were confined in small pens and exposed to sugar beet seedlings and weeds that were grown in a field treated with Aldicarb 10% granular pesticide at rates of 2-6 pounds a.i./acre. All greenery within the pen was consumed. Sugar beet seedlings averaged 4.68 ppm aldicarb (weeds were not analyzed) and caused no mortality during or after 7 days of exposure. Two quail and one pheasant died, but these were not attributed to treatment. Weight loss occurred in most experimental and control quail; approximately 20% of the experimental pheasants lost weight, while 50% of the control and 25% of the experimental pheasants gained weight.

Validation
category: Supplemental

Category
rationale: This study was classed as only supplemental because exposure levels to pesticides were so low that toxic effects could unlikely have been achieved. Therefore, the study, although done well, has little meaning. In addition, for the current submission, this test is not required.

Category
repairability: No

Abstract: This is a continuation of previously validated study, ES-DD1 with the objectives to determine the extent of feeding and effect on birds when exposed to emerging seedlings of sugar beets. Details on location, pens, birds, and application of pesticide are given in the review of study ES-DD1 with the following differences:

1. In the first study 2 different 10% formulations were used; in this study only the TEMIK 10GV formulation was tested, and
2. birds in this study were the same individuals that had been previously exposed in the first study.

Sugar beets had been planted on Feb 5, 1970 and had attained a height of 1 to 2 inches by Mar. 9, the first day of exposure. Pens containing five quail or four hen pheasants were placed over the seedlings which had been treated either by in-furrow application at 2 pounds a.i./acre or by banded-in-row application at 6 pounds a.i./acre. Cages were not moved. Cracked grains and water were provided during the entire seven day exposure. Birds were weighed just before exposure and at the end of the test. They were returned to holding cages for a 10 day observation period.

Results and Conclusions:

Both quail and pheasants completely consumed all green matter within the cages after about 60 hours. This included both sugar beet seedlings and weeds. "Conservative estimates indicate each bird consumed several grams of green tissue." Gas chromatographic analysis of beet seedlings revealed an average aldicarb residue of 4.68 ppm. No birds were debilitated or lost due to treatment, although most treated and control quail lost weight. One control quail died. During the post-treatment observation period one quail and one crippled pheasant died; these were not attributed to treatment. Three wild quail flew into the test area, remained until the test quail were removed, ate some seedlings, and suffered no apparent effects.

Investigators concluded no harmful effects occurred when birds consumed seedlings containing nearly 5 ppm of aldicarb residues. Therefore, "it is concluded that if label directions as proposed are followed, no undue hazard to quail or pheasant will occur from use of TEMIK 10G on sugar beets"

Reviewer's Comments:

On the surface, this appears to be a well designed and adequately conducted test. However, if the results are analyzed it can be seen that "several grams" of greenery with almost 5 ppm residues would total about 25 micrograms (if several \approx 5 grams) of pesticide over a 60 hour period. Since all greenery was consumed and no more was available, a maximum of 100-125 micrograms aldicarb could have been ingested if only one bird ate all the greenery and the remainder in the pen ate only supplemental food. This amount would be less than 0.1% the LC_{50} for bobwhite quail in a study classed as supplemental. On this basis, the investigator's conclusions are not warranted to the extent that they were stated.

Are residues of 5 ppm the maximum likely to be found in other stages of growth? What happens if birds are given access to unlimited greens with 5 ppm residues? What is the effect of supplemental food? All of these questions should be answered before investigator's conclusions can be further considered. This reviewer feels that the following conclusion appears to be valid: Quail and pheasant ingesting small amounts of 1-2" sugar beet seedlings treated with aldicarb 10G/as per directions suffered no acute effects. Further conclusions are unwarranted from the data presented. However, although valid data is lacking, it would appear that these birds might have difficulty in ingesting toxic amounts through green matter.