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CASE GS0140 ALDICARB PH 9/29/82

CHEM 098301

BRANCH EEB DISC TOPIC Special Order

FORMULATION 04 Granular

FICHE/MASTER ID 00101961 CONTENT CAT 01

Haines, R. (1970) Field Evaluation of Potential Hazard of Temik 10G Aldicarb Pesticide to Valley Quail and Ring-necked Pheasants: Trial I. (Unpublished study received Aug 20, 1970 under OF1008; submitted by Union Carbide Corp., Washington, DC; CDL:091748-D)

SUBST. CLASS # 5.

OTHER SUBJECT DESCRIPTORS
PRIM:
SEC:

DIRECT RV# TIME # 4 Hrs. (MH) START DATE 1/12/78 END DATE 1/12/78

REVIEWED BY: Larry Turner
TITLE: Biologist
ORG: EEB
LOC/TEL:

SIGNATURE:

Richard E. Haines

DATE: 1/20/84

APPROVED BY:
TITLE:
ORG:
LOC/TEL:

SIGNATURE:

DATE:

273331

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-DD ¹								

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

Results: Valley quail and ring-necked pheasants were exposed to Aldicarb 10% granular in field studies. In three varieties of subsurface application, caged pheasants suffered no mortality, while 3 quail died—none, according to investigators, were due to pesticides. No birds exhibited any illness, symptoms. Weight loss ^{was noted} in most all birds, both controls and treated, and was attributed to confinement and handling.

Validation category: Supplemental

Category rationale: This report was classified only as supplemental for a variety of reasons. Primary among these was the conclusion of no hazard to these game-bird species when the test birds were given apparently unlimited food. While the objective was stated "to determine if any hazard exists", the nature of the report suggests the real objective was to demonstrate that no hazard exists. Deaths were unexplained. Movement of cages apparently presented insurmountable problems. See also R. W. Felthousen memo to J. Touhey (Felthousen review 4/9/77) regarding protocols in small pen field tests.

Category repairability: no

Abstract: A field study was conducted on Valley Quail and Ring-necked pheasants at the Soilserv Field Station in Greenfield, California from Dec. 27, 1969 (start of acclimation of birds) to Feb. 5, 1970 (termination of 7 day exposure). The objective of the test was to determine if any hazard exists to these bird species from soil treated with TEMIK 10G according to proposed rates for insect, mite, and nematode control used at planting time for cotton and sugar beets.

Pen reared, unmated adult quail and hen pheasants, about 20 weeks old were obtained from a local breeder and acclimated in 10 ft x 20 ft holding cages on the test site for 40 days. Test cages were of wood and 1/2 inch mesh screen, with dimensions of 4 ft x 8 ft x 4 ft for quail and 4 ft x 16 ft x 4 ft for pheasants. Although not stated, it appears these pens had open bottoms. Five quail and four pheasants were placed in each test cage.

Soil preparation prior to treatment was routine for sugar beets. Treatments and method of application were as follows:

1. TEMIK 10G, 20 pounds/acre
Placed 2 to 3 in. below each seed furrow at time of planting.
2. TEMIK 10G, 60 pounds/acre
Applied in a band 7 in. wide and 2 1/2 to 3 in. below soil surface and between the double row of beets.
3. TEMIK 10G, 60 pounds/acre
Applied in a narrow band, 3 in. to one side of each row on the bed and 3 to 4 in. deep.

Experimental formulations used were TEMIK 10GV (contains 10% aldicarb impregnated)

A total of 12 plots were tested: each of the three applications above was conducted with the 10GV and 10GC formulations, and without furrow irrigation at a rate of 1 1/2 acre inches of water.

Birds were banded and their wings were clipped. Acclimation began on December 27, 1969; birds were first weighed on Jan 22, 1970, and weighed again on February 5, 1970 when pesticide was applied, and weighed a third time on Feb. 12, 1970 at the termination of exposure. Birds were then transferred back to holding cages and observed for two weeks to assay for any debilitation. During the test period, birds were provided with water and unspecified amounts of Purina wild game bird chow (quail) or locally produced chicken scratch (pheasants).

Cages were evenly spaced across treated beds with four treated rows for quail and eight rows for pheasants. All cages were moved on Feb 7 and again on Feb 10. The moving procedure was sufficiently disruptive to the birds that they were not again moved.

Results and Conclusions

No pheasant mortality occurred. Two quail in one of the treatment areas (2 pounds a.i./acre, below seed furrow, 10GV formulation) and one in the untreated area died. All of the birds "appeared perky and none exhibited any illness symptoms," leading the investigators to conclude that deaths were not pesticide related. Weight loss occurred in most birds both before and after treatment, with little apparent difference between controls and treated. Investigators concluded that this was due to long confinement and handling. No detrimental effects were observed during the fourteen day post-treatment period.

Investigators concluded that proper treatment of sugar beets with TEMIK 10G at planting time will not result in any undue hazard to these species.

Reviewers Comments:

In retrospect, this study was less than well designed. The procedures reported were reasonable, with the exception of problems associated with moving pens. The report itself was vague and difficult to follow and contained numerous assumptions and obvious biases. For example:

1. In the introduction, citing other reports the author understates adverse conclusions, such as "some mortalities occurred" when in fact 23 out of 30 birds died, and again "no hazard" was used when two birds died apparently as a result of pesticide exposure.
2. "Previous experience ~~{sic}~~ indicated one week was sufficient to determine any effect from TEMIK 10G granules." No evidence was presented to indicate that chronic toxicity tests had even been considered for avian species.
3. Author considered the two formulations of TEMIK 10G as replicates without giving evidence that they have the same effect.

This reviewer would accept the conclusion that when birds had standard food available, they would be unlikely to receive toxic doses of pesticide under the tested conditions. Normally farmers do not spread bird food out at the time of application, and other tests show a distinct hazard (under different subsurface treatment conditions) to bobwhite quail when deprived of food for only one day.

Lastly, if pesticide application was completely as reported, no pesticide would have been less than two inches deep. This procedure would likely reduce possible hazard when compared to other applications, such as 1/2 inch deep in-furrow application and even soil incorporation to a depth of 4-6 inches.