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2/19/69

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Evaluation of Pesticide Petition No. 9F0798
2-methyl-2-(methylthio) propionaldehyde o-
(methylcarbamoyl) oxime and its cholinesterase
inhibiting metabolites submitted by Union Carbide Corporation
Filed January 30, 1969

INTRODUCTION

See PP No. 8F0637, also on cottonseed. (Temik)

Aldicarb common name K62. 77-1968

The petitioner is proposing a tolerance for aldicarb, and/or its cholinesterase - inhibiting metabolites, aldicarb sulfoxide, 2-methyl-2-(methylsulfinyl) propionaldehyde O-(methylcarbamoyl) oxime, aldicarb sulfone, 2-methyl-2-(methylsulfonyl) propionaldehyde O-(methylcarbamoyl) oxime of 0.1 ppm in or on cottonseed.

Formulation - Temik 10G Aldicarb Pesticide

DIRECTIONS FOR USE

Cotton - 3-50 lbs./A (0.3 to 5.0 lbs.A/A) Apply before planting or at time of planting and at pin-head squaring as a side-dressing. Do not apply more than 2 applications per crop.

Do not apply within 90 days before harvest.

Note - pin-head square is about 110 day before harvest.

ANALYTICAL METHODS

GC equipped with a flame photometric detector incorporating a 394 mμ filter specific for sulfur. Method is specific for aldicarb and its metabolites.

Sensitivity is about 0.02 ppm.

Colorimetric Method at 530 mμ. - Total residues in terms of sulfoxide.
Sensitivity is about 0.04 ppm.

TLC.

DISCUSSION OF DATA

Soil dissipation.

✓ Biologically degraded by microorganism Temik does not inhibit the growth of microorganisms and does not alter soil content.

✓ Diluted by uptake in vegetation.

✓ Volatilization.

✓ Chemically altered through catalytic action of clays and other inorganic soil contents.

✓ Does not move laterally from treated soil to untreated soil.

✓ Does not leach into soil.

✓ Appears to disappear from soil with high H₂O content than those of low H₂O content.

✓ Rain or irrigation appears to speed up the disappearance of temik. The reason for this is uncertain. Could be a physical evaporation with H₂O.

✓ Does not drain off to a nearby pond.

✓ Ponds treated with 3 ppm Aldicarb.

✓ 1/2 life in ponds is about 10 days (center of pond).

✓ Does not get into bottom mud. Must vaporize off.

✓ Excretion in cows

94-97% excreted in urine

2.98 - 3.6% excreted in feces

0.96 - 1.34% " in milk.

Chicken feeding study

0.1 ppm feeding no residues found in droppings, eggs, blood, kidney, and liver. No check values to compare with.

1.0 ppm feeding residues found in droppings, eggs, and tissues (12 hrs. last treatment for tissues). 7 days after last application negligible residues in tissues.

20 ppm feeding; residues in droppings, egg and tissues. Residues in tissues. Residues in tissues after a 7 day withdrawal period.

Cow feeding study

0.1 ppm feeding; no residues in blood, milk, tissues or by-products,

feces and slightly in urine.

0.6 ppm feeding, no residues in blood, tissue or by-products, slight residues appear to be in milk and residues are in urine and feces.

1.2 ppm feeding, residues in blood, milk, urine, feces, and in some tissues.

Cotton

Some of the data submitted on cotton are listed

Samples	lbs. A/A	When applied	PHI	PPM Found Seed
1	1 + 8	At planting + 6 wk. sidedress	107	0.02
2	2 + 2 + 4	5 + 6 + 7 wk. sidedress	82	0.06
3	4	9 wk. "	91	0.02
4	5	10 wk. "	93	0.03
5	6	11 wk. "	59	0.03
6	8	7 wk. "	99	0.04

Samples	PPM Found Ginned cottonseed	Meal screwpress	Crude oil screwpress	Refined oil screwpress	hulls	Meal Sol. Ext.	Crude oil Sol.	Ref. oil sol.
1	0.02	0.003	0.003	0.003	0.03	0.003	0.003	0.003
2.	0.06	0.006	0.004	0.003	0.17	0.003	0.004	"
3	0.05	0.003	0.003	0.003	0.11	0.016	0.003	0.003

CONCLUSIONS

Residues could result in meat, meat by-products and milk of livestock feeding above 0.1 ppm/day.

RECOMMENDATION

A favorable opinion is given.