June 6/24/70 NL

June 24, 1970

Subject: Pesticide Petition Number OF0975 requesting tolerances for naled (1,2-dibromo-2,2-dichloroethyl dimethyl phosphate submitted by Chevron Chemical Company, and filed May 5, 1970

To: Charles L. Smith, Petition Control Office

We have examined the residue data, analytical methods and other information in this petition for tolerances of 0.5 part per million (ppm) in or on beans and soybeans (each in dry form and forage), cottonseed grapes, peaches, sugar beets (roots and tops), sugarcane, walnuts and grass pasture and range; and 3.0 ppm in or on alfalfa, celery, collards and kale.

It is the opinion of this Department that the proposed tolerances in or on beans and soybeans (each in dry form and forage), cottonseed, grapes, peaches, sugar beets (roots and tops), sugarcane walnuts, alfalfa, celery, collards and kale reasonably reflects the amount of residue likely to result.

An unfavorable opinion is given on grass pasture and range in that the proposed tolerance is lower than the amount of residues likely to result. It should be noted that dairy cattle beef cattle, hogs, sheep and horses will be receiving a direct application from pasture and range uses in conjuction with feeding on treated grasses.

Mr. Smith: Send letter and news release. Follow with c-72.

Chemical Evaluation Staff

ARS:PR:RENey:RLCaswell:mbs 6/25/70

REHey:mbe
June 24, 1970

Neg

Evaluation of Pesticide Petition No. 0F0975 for naled (1,2-dibromo-2,2-dichloroethyl dimethyl phosphate) (Dibrom)
Submitted by Chevron Chemical Co.
Filed May 5, 1970

INTRODUCTION

Other petitions 7F0532.

The petitioner is proposing tolerances on the following:

PHI March 31, 1971

Crop	PPM
Alfalfa for seed Do not graze treated fields	3.0
Beans, soybeans (dry form)	0.5
Bean forage, soybean forage 7	0.5
Celery 1	3.0
Collards, Kale 1	3.0
Cottonseed 4	0.5 — Do not graze
Grapes 1	0.5
Peaches 30	0.5
Sugar beets and sugar beet top- 2	0.5 Do not feed to
Sugarcane withdrew	0.5
Walnuts 10	0.5 Do not graze
Grass pasture and ranges	(0.5) 10 ppm

Do not Feed vines

MSDA - Sum - Pg - III - N - 1.1,12,.3,.4,.5. All appeared to be registered in some form except sugarcane.

The name of the product is Dibrom 8 Emulsive (238-1281) 8 lbs tech/gal equivalent to 7.2 lbs A/gal.

Note - the main metabolite of Naled Is DDVP.

DIRECTIONS FOR USE

All repeat as necessary.

Alfalfa - 3/4 pt/A (0.675 to 0.9 lbs A) when crop is 12" high.

Alfalfa (seed).
Lygus 1 app. 1 1/2 pt/A (0.45 lbs A/A
Mites 2 app (7 day intervals), " "
Thrips 1 app " "
By air use in at least 10 gal H_2O. PHI 1 day.

Beans (Dry) and soybeans (dry) - 1 to 1 1/2 pts/A (0.9 to 1.35 lbs A/A) in water to cover. 100 gals/A is preferable. PHI 7 days for dry beans and dry soybeans only.

Collards and Kale - 1-2 pts/A (0.9 to 1.8 lbs A/A). PHI 1 day.

Celery - 1 pt (0.9 lbs A) in 50-75 gals H_2O/A on plants 3/4 grown and 1 1/2 pt (1.35 lbs A) in 100 to 150 gals H_2O/A.. PHI 1 day.

Cotton - 1/2 to 1 pt/A (0.45 - 0.9 lbs A/A) by ground (3-20 gal) or air (3-10 gal), 7 - 10 day intervals. PHI 4.

Walnuts - 1/2 to 1 pt (0.45 - 0.9 lbs A) to 100 gal H_2O. PHI 10 days.

Grapes - 1/2 - 2/3 pt (0.45 - 0.6 lbs A)/100 gal. H_2O. PHI 1 day.

Sugar beets - 1 pt/A (0.9 lbs A/A) by air or ground. Air 1- 5 ga. H_2O/A. PHI 2 days.

Sugarcane (Puerto Rico only) - 1/2 pt (0.45 lbs A) in 4 gal of spray/A by air. Repeat as necessary. PHI - 2 months. Do not pasture livestock in treated areas.

Peaches (Western States only) (cal only) 3/4 pt (0.675 lbs A) to 100 gal H_2O. PHI-30 days.

Livestock pastures and pastures including dairy cattle (Adult Mosquito, gnat and stablefly). Note Dairy cattle present during spraying. Note - This rate will kill shrip. Aireraft East - apply 0.8 to 4 fl. oz/A diluted with H_2O. Apply to 8 qts. of dilute spray/A.

West - Apply 1.6 - 4 fl. ozs/A diluted with H_2O. Apply 2-8 qt/A.

Mist or cold fog - Use 3 to 5 qt/100 gal H_2O to apply 0.1 to 0.25 lbs tech Naled/A.

Adjacent pasture, corrals, holdingpens. (Dairy and Beef cattle, hog, sheep, horses). (Houseflies and Mosquitoes).

Air Application - Use 1.6 to 4 fl oz/A. Dilute 1 - 2 1/2 pts in 10 gal H_2O. Use 1 gal/A. Note. Apply over areas with animals present.

Rangeland, Field Areas and Pastures including dairy pastures: (Grasshoppers) Range caterpillars on rangeland and pastures - 1/2 to 3/4 pt/A by air or ground. Young grasshoppers - 1/2 pt/A. Armyworms - 1 pt/A.

By Air App. - Use in 1 -5 gal H_2O/A. Repeat as necessary. Note: Animals may be present during treatment. Forage plants on pastures or fields areas should not be cut for hay to be sold or shipped interstate, within 4 days of application

ANALYTICAL METHODS

Cholinesterase (Naled + DDVP).

GC with cesium bromide TID. Separates naled from DDVP. Retention time about 2 minutes DDVP and 4 minutes Naled.

DISCUSSION OF DATA

Naled reacts rapidly with sulphydryl compounds in plants producing DDVP, bromides and disulfides and continues to breakdown. C^{14}, P^{32} and Br^{82} studies have been made.

Some of the residue data submitted are listed. (All residues as total Naled + DDVP).

Alfalfa (1lb A/A, PHI 1 day, 3.0 ppm). Do not graze treated fields

Lbs A/A	No. of App.	Gal/A	PHI	Green Hay
1	5	40	1	0.62
1	5	50	1	3.6
1	1	5	1	0.16
2	1	33	4	0

Data acceptable.

Beans and soybeans (1.35 lbs A/A, PHI 7 days, 0.5 ppm) (forage 0.5 ppm)

	Lbs A/A	No. of App.	Gal/A	PHI	Residues in PPM Pod + Vines	Dry Beans
Red kidney	1.5	1	6	7	0	0
Soybeans	1.5	1	3	7	0.16	0
	1.5	1	5	7	0.18	0

Data acceptable.

Celery (1.35 lbs A/A, PHI 1 day, 3 ppm)

Lbs A/A	No. of App.	Gal/A	PHI	Whole Stock
1.5	1	100	1	0.58
3.0	1	22	1	1.6
1.5	1	22	1	0.62

Data acceptable.

Collards and Kale (1.8 lbs A/A, PHI days 1, 3 ppm).

	Lbs A/A	No. of App.	Gal/A	PHI	Above Groud Parts
Collards	2	1	50	1	0.42
Kale	2	1	50	1	1.05
	2	1	50	1	0.49

Data acceptable.

Cotton (0.9 lbs A/A, PHI 4 days, 0.5 ppm seed).

Lbs A/A	No. of App.	Gal/A	PHI	Fuzzy Seed	Leaves
2	1		2 Hrs	____	45.5
			8 "	____	16.1
			1 day	____	1.1
			4 days	0	0
2 2	1		2 hrs	____	24.5
			8 "	____	12.7
			1 day	____	1.6
			4 days	0	0

The above application where made with 1 lb/A toxaphene. Data acceptable.

Grapes (0.6 lbs A/A, PHI 1 day, 0.5 ppm)

Lbs A/A	No. of App.	Gal/A	PHI	Fresh Fruit	Raisins
1	1	100	0	0.69	____
			1	0.88	____
			35	____	0
1	1	100	1	0.13	____
			35	____	0
1	5	100	1	0	____
4	2	40	1	0	____
4	2	40	1	0	____

Data acceptable.

Peaches (0.675 lbs A/A, PHI 30 days, 0.5 ppm)

Lbs A/A	No. of App	Gal/A	PHI	Fruit
5	1	500	0	10.3
			1	4.0
			2	1.33
			4	0.87
			30	0

Data acceptable.

Sugar beets (0.9 lbs A/A, PHI 2 days, 0.5 ppm beets and 0.5 ppm tops).

Lbs A/A	No. of App.	Gal/A	PHI	Top	Roots
1	1	10	2	0.16	0
1	1	5	2	0.05	0
1	1	33	2	0.04	0.04
1	1	2.27	2	0	0
2	1	4.55	2	0.08	0

Data acceptable.

Sugarcane (0.45 lbs A/A, PHI 2 months, 0.5 ppm). All data from Fla. Use for Puerto Rico only).

Lbs A/A	No. of App.	Gal/A	PHI	Whole Plant	Juice	Bagasse
0.5	2	2	62	0.09	0	0
0.5	2	2	52	0	0	0
2	2	4	52	0	0	0

Because of the rapid degradation we will accept data from Fla. and apply it to Puerto Rico.

Walnuts (0.9 lbs A/A, PHI 10 days, 0.5 ppm).

Lbs A/A	No. of App.	Gal/A	PHI	Nut	Meat
4	1	400	10	0	0

4 samples. Data acceptable.

Pasture grass and range (0.9 lbs A/A, No PHI, 0.5 ppm).
No tolerances proposed on clover. C-76 may be needed.

The only residue data submitted using Dibrom 8E is an alfalfa. See alfalfa data. Below is a list of data using Dibrom 14C as ULV application.

Lbs A/A	No. of App.	Oz/A	PHI	Raw Milk	Green Hay
0.656	1	6	0	0	3.8
			1	0	0
0.2	1	2	0	0	1.3
			1	0	0
0.6	1	___	0	0	2.4
			1	0	0
0.4	1	4	0	0.01	2.6
			2	0	0
0.6	1	6	0	0	10.3
			1	0	1.3
			2	0	0.21
0.2	1	2	0	0	2.2
			1	0	0

Residues would be higher than that of the proposed tolerance of 0.5 with no limitations. It appears that no PHI for grazing could be given as Dibrom is also a direct application to livestock. Residues would be absorbed as DDVP not Dibrom.

Spray Rats - stomach. Dibrom is degraded to DDVP and dichloracetaldehyde in the stomach.

Dog feeding studies - Dogs were given 1 sub-lethal dose of 30 mg/kg. No Dibrom, DDVP, Bromodichloroacetaldehydm (BDCA) or Dichloroacetaldehyde (DCA) were found in liver, muscle, kidney, subcutaneous fat or skin five (5) days after feeding. Some DCA may have been determined in urine and feces. Some Dibeom and DDVP may have been determined in feces.

CONCLUSIONS

No soil or related data. Send C-72 but note this Dibrom will probably degrade rapidly. Toxic to shrimp and fish.

Note: Livestock and diary cattle would be receiving a direct application as well as feeding on treated grass. Residueson skin would be adsorbed as DDVP not Dibeom. Feeding study of cow FF. No. 7F0522. Cow fed 1 and 10 ppm. No Dibrom found in tissue and milk.

The use on alfalfa must be limited to pure stand until a tolerance is given on clover. Send C-7# comment with registration.

RECOMMENDATION

A unfavorable opinion is given on pasture and range grass. See conclusion. A favorable opinion is given on the other crops.