

REney:mbs

September 23, 1969

Ney

Evaluation of Pesticide Petition No. 0F0869 for
O,O-dimethyl S-[4-oxo-1,2,3-benzotriazin-3 (4H)
-ylmethyl] phosphorodithioate (Guthion)
Submitted by Chemagro Corporation
Filed August 29, 1969

Introduction

Other petitions 115, 207, 249, 314, 336, 355, 367, 394, 5F0442,
7F0539, 7F0582 and 9F0762.

The petitioner is proposing the following tolerances.

Crop	PHI	PPM
Beans (Dry)	30	0.3
Blackeyed peas (So. peas, crowder peas)	7	0.3
Soybeans	45	0.2
Soybean Oil		1.0
Potatoes	7	0.3
Filberts	30	0.3
Pecans	Prior to husk split only	0.3
Walnuts	Prior to husk split only	0.3
Milk	for Guthion and/or its degradation products as a result of feeding fresh alfalfa and clover con- taining 2.0 ppm	0.1

0.0.2
9/11/70

See PP. No. 7F0539. These crops in that petition.

The names of the products are:

- | | |
|---|---------------------|
| 1. Guthion 25% WP | (Reg. No. 3125-25) |
| 2. Guthion Spray Concentrate
2 lbs A/gal | (Reg. No. 3125-123) |
| 3. Guthion Liquid Concentrate
2 lbs A/ gal | (Reg No. 3125-102) |

4. Guthion 50% WP
Guthion

(Reg. No. 3125-193)
50%

5. Guthion 2% Dust
6. Guthion 3% Dust

(Reg. No. 3125-137)
(Reg. No. 3125-63)

Directions for Use

Soybeans

Formulation

		Lbs A/A
50% WP	0.75 - 1.5 lbs/A	0.375 - 0.75
25% WP	1.5 - 3.0 "	" "
2% D	2.2 - 45 "	0.44 - 0.9
3% D	15 - 30 "	0.45 - 0.9
Spray Con.	1.5 - 3.0 pts/A	0.375 - 0.75
Liquid Con.	1.5 - 3.0 "	" "

Repeat as necessary. PHI - 45 days. Do not graze or feed treated vines.

Nuts (Filberts Pacific NW only)

Formulation

		Lbs A/A
50% WP	0.5 - 1.5 lb/A	0.25 - 0.75
25% WP	1.0 - 3.0 "	0.25 - 0.75
Spray Con	1 - 3 Pt./A	0.25 - 0.75
Liquid Con	1 - 3 Pt./A	0.25 - 0.75

In 100 - 1,000 gal of H₂O

Repeat as necessary. PHI 30 days. Do not graze livestock in treated groves for 21 days after treatment.

Pecans

Formulation

		Lbs A/A
50% WP	0.75 - 1.125 lbs/A	0.375 - 0.563
25% WP	1.5 - 2.25 "	0.375 - 0.563
Spray Con.	1.5 - 2.25 Pt/A	0.375 - 0.563
Liquid Con.	1.5 - 2.25 Pt/A	0.375 - 0.563

Repeat as necessary. Do not apply after husk split. Where more than 5.625 lbs A/A are applied in a single application do not graze livestock in treated groves. Where 5.625 lbs A/A or less are applied livestock may graze in treated groves after a 21 day post-treatment.

1800 gal/A

Walnuts

Formulation

		Lbs A/A
50% WP	0.75 - 1.875 Lbs/A	0.375 - 0.938
25% WP	1.5 - 3.75 "	0.375 - 0.938
2% D	60 - 75 "	0.12 - 0.15
3% D	40 - 50 "	0.12 - 0.15
Spray Con.	1.5 - 3.75 pt/A	0.375 - 0.938
Liquid Con.	1.5 - 3.75 "	0.375 - 0.938
Use in 100 - 1,100 gal H ₂ O		

Repeat as necessary. Do not apply after husk split. Do not graze livestock for 21 days after treatment.

Vegetables (Snap and Dried Beans)

Formulation

		Lbs A/A
50% Wp	0.75 - 1.0 Lbs/A	0.375 - 0.5
25% WP	1.0 - 2.0 "	0.25 - 0.5
2% D	22 - 30 lbs/A	0.44 - 0.6
3% D	15 - 20 "	0.45 - 0.6
Spray Con.	1.5 - 2 Pts/A	0.375 - 0.5
Liquid Con.	1.5 - 2 pts/A	0.375 - 0.5

Repeat as necessary. Snap beans 7 days PHI. Dry beans 30 days PHI. Do not exceed 4 applications on dry beans. Do not feed or ensile treated forage. 2% D has Antichokes on label at 90-105 lbs/A (1.8 - 2.1 lbs A/A) and a 30 day PHI.

Blackeyed peas (So. peas and Crowder peas)

Formulation

		Lbs A/A
50% WP	0.75 - 2 Lb/A	0.375 - 1.0
25% WP	1.5 - 4 "	0.375 - 1.0
2% D	22 - 50 "	0.44 - 1.0
3% D	15 - 33 "	0.45 - 1.0
Spray Con.	1.5 - 4 pt/A	0.375 - 1.0
Liquid Con.	1.5 - 4 "	0.375 - 1.0

Do not apply more than 4 applications per season. PHI 7 days. Do not use vines for feed or forage nor pasture treated areas.

Potatoes

Formulation

		Lbs A/A
50% WP	0.75 - 1.5 lb/A	0.375 - 0.75
25% WP	1.5 - 3.0 "	0.375 - 0.75
2% D	22 - 37 "	0.44 - 0.74
3% D	15 - 25 "	0.45 - 0.75
Spray Con.	1.5 - 3 Pts/A	0.375 - 0.75
Liquid Con.	1.5 - 3 pts/A	0.375 - 0.75

Repeat as necessary. PHI days.

2% D and 3% D formulation may be applied by air or ground equipment.

Analytical Method

Colorimetric method.

GC.

Discussion of Data

No Guthion or its oxygen analog where found in milk. There may be a possibility of benzaximide moiety present.

Feeding Study:

Report No.	Cows Fed	Residues in Milk
6924	3 and 6 ppm for 14 day	ND
7076	6, -12 and 24 ppm for 14 days	ND
7077	0.5, 1 and 2 ppm for 17 days	0.016, 0.015, 0.035.

and for 7077 (1 ppp feeding) none found in flank steak, round steak, brain heart, kidney, subcut. fat, omental fat, renal fat and 0.06 ppm in liver. It appears that there were small residues in the 7077 feeding. This is probably due to the analytical method.

Soil studies - The 1/2 life in soil is reported to be about 32 days for muck sand, 84 days silt loam and 90 - 100 days for clay. It should be noted that a large amount of rain fell between the interval of analyses for 1/w life time and the time of analyses before. What happened to the Guthion is undetermined (2 leached? Run off? Degraded?) we need answers.

Treatment of Ponds. An 0.5 acre 4 ft. deep pond was treated 3 times as follows. 3.0 + 1.5 + 4 oz/A (0.188 + 0.094 + 0.25 lbs A/A). Samples of mud, fish and water were taken.

	Days			
Mud	PHI 1	6	28	15
Leeward	ND	ND	ND	
Center	"	"	"	
Windward	"	"	"	
H ₂ O				
Leeward	0:009	0:003	0:002	
Center	0:002	0:006	0:004	
Windward	0:009	0:004	0:002	
Windward 3 in/ for surface	_____	_____	0.007	
Windward 1 qt. from bottom	_____	_____	0.003	
Bluegills	_____	_____		0.004
Catfish	0.055	_____		ND
Frog	_____	_____		ND
Unmarked?	0.187	_____	_____	_____

There appeared to be a build up of Guthion in fish and in water. This could be greater in ponds and in fish recuing contaminated runoff water from an area treated with many applications.

Some of the residue data submitted on crops are listed below. See PP. No. 7F0539 for data.

Bean (Dry)

Lbs A/A	No. of App.	No. of gal/A	PHI	Green Beans	Dry Beans	Vines
2	3	100	14	0.25	_____	11.41
			21	_____	_____	3.67
2	3	50	31	_____	0.16	_____
2	3	50	31	_____	0.16	0.49
2	3	_____	31	_____	0.16	_____
2	3	10	30	_____	0.06	_____
2	3	_____	30	_____	0.67	_____

Blackeyed Peas (So. peas, Crowder peas)

Lbs A/A	No. of App.	PHI	Green Beans	Dry Beans	Vine
1	4	7	_____	_____	0.2
1	4	7	_____	_____	24.9
		28	_____	ND	_____
1	4	7	_____	_____	ND
1	4	7	_____	_____	ND

Soybeans

Lbs A/A	No. of App.	No. of gal/A	PHI	Dry Bean	Vine	Green Plant	Green beans and pods
0.75	3	_____	48	0.05	0.72	_____	_____
0.75	3	_____	30	0.03	1.76	_____	_____
0.75	3	_____	28	0.01	0.05	0.14	_____
1	3	100	20	_____	_____	12.87	1.49
1	3	40	21	_____	_____	1.2	0.62
1	3	5	21	0.01	0.65	_____	_____
1	3	100	33	0.01	0.3	_____	_____
1	3	30	14	_____	_____	0.64	_____
			28	0.01	0.33	_____	_____

Commercial deodorization will not remove or destroy Guthion in manufacturing of soybeans to soybean oil. It is then assumed that residue could be near but below that of the 1 ppm proposed tolerance in soybean oil resulting from 0.2 ppm in or on soybeans.

Potatoes

Lbs A/A	No. of App.	No. of Gal/A	PHI	Potato
1.5	6	150	7	ND
1.5	6	150	7	"
1.5	6	100	7	"
1.5	6	—	7	"
1.5	6	—	7	"

Filberts

Lbs A/A	No. of App.	PHI	Shell & Meat
1	3	28	ND
1	3	28	ND

Pecans

Lbs A/A	No. of App.	PHI	Meat	Nut
0.5	2	31	ND	ND
0.5	3	65	ND	ND

Walnuts

Lbs A/A	No. of App.	PHI	Meat
0.75	2	102	ND
0.375	1	22	ND

Grass under treated Nut trees.

Lbs A/A	No. of App.	No. of gal/A	PHI	Grass	Green Forage	Dried Forage
2	1	—	7		1.2	2.07
			14		0.8	1.61
2	2	—	14		2.1	1.65
2	3	—	7		8.9	15.2
			14		10.3	2.26
0.563	3	250	7	5.07		
			14	6.06		
0.563	3	250	7	5.69		
			14	5.67		
0.563	3	—	7	2.76		
0.563	3	—	7	17.40		
		—	14	2.01		

Conclusion

The data submitted with this petition are to show the amount of residue remaining on treated vines and grass under treated trees. A favorable opinion was given to these crops in PP. No. 7F0539. FDA did not like grazing caution because there were no data showing the amount of residues on vines or on grass under treated trees. Feeding of vines or grazing in treated areas would not appear to result in residues in milk if restriction are met.

We need data to determine the possible impact of this chemical in the environment.

Recommendation

A favorable opinion is given.