6-5-78

EEB BRANCH REVIEW

DATE: IN ____ OUT ____ IN 5/9/78 OUT 6/5/78 IN ____ OUT ____

FISH & WILDLIFE ENVIRONMENTAL CHEMISTRY EFFICACY

FILE OR REG. NO. 2139-EUP-23

PETITION OR EXP. PERMIT NO. ____

DATE DIV. RECEIVED ____

DATE OF SUBMISSION ____

DATE SUBMISSION ACCEPTED ____

TYPE PRODUCT(S): I, D, (H) F, N, R, S Defoliant

PRODUCT MGR. NO. L. Zink (SRS)

PRODUCT NAME(S) Dropp - Cotton Defoliant

COMPANY NAME Nor-Am

SUBMISSION PURPOSE Use on cotton

CHEMICAL & FORMULATION N-phenyl-N^{1}-1,2,3-thiadiazol-5-ylurea
[SN 49577, Thidiazuron]

1.0 Introduction

See our previous reviews for this permit. (2139-EUP-23).

2.0 Directions for Use

The experimental program and use directions are included in our recent review (4/17/78).

3.0 Discussion of Data

"Rotational Plant Uptake Study with Radioactive SN 49 537"; with Reports of Progress I, II, and III.

Oxamyl Residues (ppm)

Aging 14-days	Leaves & Stems			Bean, beet, grain**			Soil (Spiked 0.2 ppm)		
Growth (Wks)	6	12	26	6	12	26	6	12	26
Soybeans									
P*	0.03	0.04	0.01	0.04	<0.01	0.03	0.18	0.18	0.15
T*	0.04	0.06	0.04	0.16	<0.01	0.02	0.16	0.16	0.15
Beets									
P*	0.02	<0.01	<0.01	0.0>	0.03	<0.01	0.18	0.16	***
T*	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	0.16	0.16	-
Sorghum									
P*	<0.01	<0.01	<0.01	-	-	0.01	0.19	0.18	-
T*	<0.01	<0.01	<0.01	-	-	0.01	0.15	0.15	-
Aging 26-Wks									
Soybeans									
P*	<0.01	<0.01	<0.01	-	<0.01	0.05		***	
T*	0.01	0.01	0.04	-	<0.01	0.07	-	-	-
Beets									
P*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-
T*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-
Sorghum									
P*	<0.01	<0.01	<0.01	-	0.01	0.13	-	-	-
T*	0.01	0.01	0.03	-	0.01	0.09	-	-	-

* The 14C-label was either in the phenyl(P) or thiadiazol (T) ring; CA $8.8.10^6$ DPM/mg.

** Root residues in soybeans and sorghum averaged <0.02 ppm

*** The soil analysis is not yet complete.

4.0 Conclusion

This study has not been validated for registration. Crop residues were highest in the mature fruit and were increased by soil aging of Dropp. Data indicating the extent to which the rings (P and T) were separated during the soil aging has not been submitted. If separation occurred readily, then the Dropp residues will be given by the sum of the individual ring residues.

(A) Following 2-wks of aging, residues in soybeans were 0.03 ppm(P), 0.02 ppm(T), and 0.05 ppm (P&T); in sorghum, 0.01 ppm(P), 0.01 ppm(T), 0.02 (P&T). Residues in beet were <0.01 ppm.

(B) Following 26-wks of aging, residues in soybeans were 0.05 ppm(P), 0.07 ppm(T), and 0.12 ppm (P&T); in sorghum, 0.09 ppm(T), 0.13(P), and 0.22(T&P). Residues in beet were <0.01 ppm.

Soil Analysis; work is in progress. The reported residues at 26-wks (CA 0.13 ppm) approximate 70% of the applied, about 52% was bound. The extractables were not characterized.

5.0 Recommendation

5.1 For the purpose of these small scale uses, a rotational crop restriction will not be needed.

5.3 All environmental chymistry data as required by Section 3 of the Regulations must be either submitted or referenced prior to registration. Data has not been reviewed (validated to support registration).

6/12/78

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Table 1 - Summary of environmental chemistry data requirements by intended use pattern

Data Requirements / Use Patterns	Terrestrial Uses: Domestic Outdoor	Terrestrial Uses: Greenhouse	Terrestrial Uses: Non-crop	Terrestrial Uses: Tree Fruit-Nut Crop	Terrestrial Uses: Field-Veg Crop	Aquatic Uses: Aquatic Food Crop	Aquatic Uses: Aquatic Non-Crop	Terrestrial/Aquatic Uses: Forest	Aquatic Impact Uses: Direct Discharge	Aquatic Impact Uses: Indirect Discharge	Aquatic Impact Uses: Wastewater Treatment	To Support Registration of: Manufacturing Use Product	To Support Registration of: Formulated Product
PHYSICO-CHEMICAL DEGRADATION													
Hydrolysis	X	X	X	X	X	X	X	X	X	X	X	X	X
Photodegradation			X	X	X	X	X	X	X				X
METABOLISM													
Aerobic soil	X	X	X	X	X			X					X
Anaerobic soil					X								X
Anaerobic aquatic						X	X	X	X				X
Aerobic aquatic						X	X		X				X
Effects of microbes on pesticides			X	X	X	X	X	X	X				X
Effects of pesticides on microbes			X	X	X	X	X	X[a]	X				X
Activated sludge										X	X	X	X
MOBILITY													
Leaching			X	X	X			X[b]					X
Volatility		X											X
Adsorption						X	X	X	X				X
Water dispersal						X	X		X				X
FIELD DISSIPATION													
Soil	X		X	X	X	X		X					X
Water						X	X	X[c]	X				X
Ecosystem (X^d combined study with X^a; X^b; X^c)								X[d]					
ACCUMULATION													
Rotational crop					X	X							X
Irrigated crop						X	X						X
Fish			X	X	X	X	X	X	X				X
Special fish study							X						