[A] [N] [M]

(4)

EFFICACY REVIEW

DATA: IN ___ OUT ___ IN 6/27/75 OUT 7/24/75 IN ___ OUT ___

RESIDUE & RELEASE ENVIRONMENTAL EFFECTS TOXICITY

FILE OR REG. NO. 241-238

PETITION OR EXP. PERMIT NO. 5F1640

DATE REV. RECEIVED 6/10/75

DATE OF SUBMISSION 6/10/75

DATE SUBMISSION ACCEPTED

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

PRODUCT MGR. NO. 16

PRODUCT NAME(S) Counter 15-G

COMPANY NAME American Cyanimid

SUBMISSION PURPOSE Petition - SUGAR BEETS

CHEMICAL & FORMULATION Terbufos

(S-[[(1,1-dimethylethyl)thio]methyl]0,0-diethyl phosphorodithioate)

5 pages

1.0 Recommendations

1.1 Because of the possible hazard to rotational crops there must be a caution on the label such as "Do not rotate treated area for one year following application except with crops listed on the label. Cover crops may be planted in treated area if plowed under and not grazed.

1.2 The following data must be submitted to support future registrations and deletion of the one year crop rotation restriction.

ROTATIONAL AND/OR SUBSEQUENT CROP RESIDUE STUDIES

(Radiolabeled study)

1.2.1 For crops rotated immediately after harvest of a crop in the treated area, the pesticide is to be aged in a sandy loam soil under aerobic conditions for about 120 days, then the soil planted to a root crop, small grain, and a vegetable. The root crop is required; however, crops in two other crop groupings may be substituted for the small grain and vegetable.

1.2.2 For crops rotated the following year after treatment, the pesticide is to be aged in the soil for one year prior to planting. Crops should be as above.

1.2.3 If significant residues are found, then actual field studies using non-labeled pesticide will be required. Such data must be obtained under actual agricultural practice.

1.2.4 If residues are found in rotational and/or subsequent crops in the field, then a labeling restriction will be needed. This restriction will take the form of a time interval from application to planting of rotational crops such that illegal residues will not occur in the rotational crop. A restriction longer than 18 months is not acceptable.

1.2.5 Cover crops can be rotated if label restrictions are such that the cover crop is plowed under and not grazed.

1.2.6 If the agricultural practice is such that a treated crop area is rotated with another crop that will result in another treatment of the pesticide to the same area, residue data will be required on the second crop. The rotational crop is to be grown under actual use conditions.

Note: All radiolabeled studies should be supported with the following information:

a. Sample calculations;

b. Counting efficiency;

c. Counting time;

d. Background levels;

e. Probable error with scintillation techniques.

2.0 Introduction

2.1 Petition for a negligible tolerance of 0.05 ppm on sugar beet tops and roots.

2.2 CL-92,100 AC-92,100

3.0 Directions for use

0.66-1.35 oz a.i./1000 bt or 1-2 lb a.i./A
Applications at planting and post-emergence
Lighly incorporated - no deeper than two inches.

4.0 Discussion of Data

4.1 Analytical Method

M-395 for sugar beet tops and roots and soil.

Sample is extracted with 10% chloroform in methanol. Solvent is evaporated, residue is taken up in chloroform and oxidized to the Sulfone analog with metachlorobenzoic acid. Chloroform solution is evaporated and the residue is dissolved in acetone. Analysis is by GLC with a thermionic detector consisting of a flame ionization electrode with a Cesium Bromide tip.

4.2 Counter residues in field soil
(Section 0-3 reports #C-692, C-691 and C-699)

Counter 15 G was applied to sugar beet fields at planting (banded or in furrow) on one soil at planting and post-emergence. Soil samples were taken at intervals and analyzed by method M-395.

Application rate ranged from 1.7-13.2 lb a.i./A.

Some of the results are shown below

RESIDUES IN FIELD SOILS
PPM AS COUNTER

Location	lb a.i./A	Days	0-3"	3-6"
Michigan	3.4	40	1.96	0.20
		60	1.09	0.32
		90	0.41	0.20
		121	0.21	0.29
		166	0.06	0.32
Idaho	2.0	40	3.57	0.13
		68	1.97	NDR
		96	1.59	0.09
		172	0.07	NDR
North Dakota	2.2	31	0.52	0.07
		62	0.35	0.08
		94	0.14	0.14
	11.0	31	0.55	NDR
		62	0.92	0.15
		94	0.27	0.30
	*2.2+2.2	51	0.51	0.08
		83	0.35	0.13
	*2.2+11.0	51	0.85	0.30
		83	1.37	0.56

*Soils treated at planting and post-emergence

Conclusions:

1. Half life in field in 0-3" layer of field soil was 30-50 days. Teaching occured to 3-6" layer tested.

2. Application at rates up to 11.0 lb a.i./A resulted in residue levels of less than 1.0 ppm between 30 and 90 days after treatment.

3. Soil types and soil characteristics were not submitted.

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