

US EPA ARCHIVE DOCUMENT

6-5-78

EEE BRANCH REVIEW

|       |                 |           |                         |                   |          |           |
|-------|-----------------|-----------|-------------------------|-------------------|----------|-----------|
| DATE: | IN _____        | OUT _____ | IN <u>5/9/78</u>        | OUT <u>6/5/78</u> | 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<sup>1</sup>-1,2,3-thiadiazol-5-ylurea  
[SN 49577, Thidiazuron]

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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) |      |      |
|----------------------|----------------|-------|-------|---------------------|-------|-------|-----------------------|------|------|
|                      | 6              | 12    | 26    | 6                   | 12    | 26    | 6                     | 12   | 26   |
| <b>Soybeans</b>      |                |       |       |                     |       |       |                       |      |      |
| 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 |
| <b>Beets</b>         |                |       |       |                     |       |       |                       |      |      |
| 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 | -    |
| <b>Sorghum</b>       |                |       |       |                     |       |       |                       |      |      |
| 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 | -    |
| <b>Aging 26-40cs</b> |                |       |       |                     |       |       |                       |      |      |
| <b>Soybeans</b>      |                |       |       |                     |       |       |                       |      |      |
| P*                   | <0.01          | <0.01 | <0.01 | -                   | <0.01 | 0.05  | -                     | ***  | -    |
| T*                   | 0.01           | 0.01  | 0.04  | -                   | <0.01 | 0.07  | -                     | -    | -    |
| <b>Beets</b>         |                |       |       |                     |       |       |                       |      |      |
| 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 | -                     | -    | -    |
| <b>Sorghum</b>       |                |       |       |                     |       |       |                       |      |      |
| 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 thiazolol (T) ring; CA 8.8.10<sup>6</sup> 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 chemistry 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).

*Albert Rey 6/22/78*

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Ronald E. Ney, Jr. 6/5/78  
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Environmental Chemistry Section  
EEE Branch

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

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

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