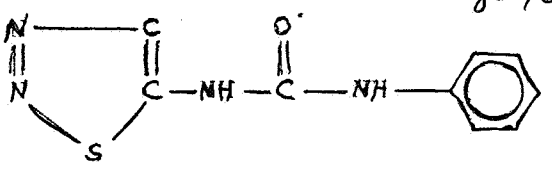
8-10-89



ENVIRONMENTAL FATE & GR
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY

Common Name: **THIDIAZURON**
Chem. Name : N-PHENYL-N'-1,2,3-THIADIAZOL-5-YL UREA
Date: 08/10/89

Shaugh. # : 120301
CAS Number: 51707-55-2
Type Pest. : PLANT GROWTH REGULATOR, DEFOLIANT
Formulation: WP 50%
Uses : FOR DEFOLIATION OF COTTON

Empir. Form: $C_9H_8N_4SO$
Mol. Weight: 220.25
Solub.(ppm): 20 @ C

VP (Torr): 3E-11
Log Kow :
Henry's :

Hydrolysis (161-1)
pH 5:[*] STABLE
pH 7:[*] STABLE
pH 9:[*] STABLE
pH :[ ]
pH :[ ]
pH :[ ]

Photolysis (161-2, -3, -4)
Air :[ ]
Soil :[*] 26 DAYS ON LmSd
Water:[*] 0.4 HOUR
:[ ]
:[ ]
:[ ]

MOBILITY STUDIES (163-1)

Soil Partition (Kd)
1.[#] NEUHOFEN Kd = 21.3 (3.3% OM)
2.[#] RIVER SAND Kd = 2.2
3.[ ]
4.[ ]
5.[ ]
6.[ ]

Rf Factors
1.[ ]
2.[ ]
3.[ ]
4.[ ]
5.[ ]
6.[ ]

METABOLISM STUDIES (162-1,2,3,4)

Aerobic Soil (162-1)
1.[#] 26 OR 144 DAYS
2.[ ]
3.[ ]
4.[ ]
5.[ ]
6.[ ]
7.[ ]

Anaerobic Soil (162-2)
1.[#] <30 DAYS IN NEUHOFEN 2.2
2.[ ]
3.[ ]
4.[ ]
5.[ ]
6.[ ]
7.[ ]

Aerobic Aquatic (162-4)
1.[ ]
2.[ ]
3.[ ]
4.[ ]

Anaerobic Aquatic (162-3)
1.[ ]
2.[ ]
3.[ ]
4.[ ]

[*] - Acceptable Study. [#] = Supplemental Study

Common Name: **THIDIAZURON** Date: 08/10/89

VOLATILITY STUDIES (163-2,3)

[ ] Laboratory.
[ ] Field:

DISSIPATION STUDIES (164-1,2,3,5)

Terrestrial Field (164-1)
1.[ ] OF THREE SOILS, ONLY THE COMMERCE SiLm SOIL IN MISSISSIPPI
2.[ ] SHOWED A MOVEMENT ABOVE OR AT THE DETECTION LIMIT BELOW 6".
3.[ ]
4.[ ]
5.[ ]
6.[ ]

Aquatic (164-2)
1.[ ]
2.[ ]
3.[ ]
4.[ ]
5.[ ]
6.[ ]

Forestry (164-3)
1.[ ]
2.[ ]

Other (164-5)
1.[ ]
2.[ ]

ACCUMULATION STUDIES (165-1,2,3,4,5)

Confined Rotational Crops (165-1)
1.[ ] 2 WKS AFTER APPL. FOR SMALL GRAINS, CORN, ROOT
2.[ ] CROPS, 2 MOS AFTER APPL FOR LEGUMES, LEAFY VEGS.

Field Rotational Crops (165-2)
1.[#] RESTRICTIONS ON PLANTING UNTIL 2 WKS AFTER APPL.
2.[ ] FOR SMALL GRAINS; 2 MOS FOR LEGUMES, LEAFY VEGS.

Irrigated Crops (165-3)
1.[ ]
2.[ ]

Fish (165-4)
1.[#] BCF FOR BLUEGILL FILLET REACHED 54 X FOR LABEL ATTACHED TO
2.[ ] C ADJACENT TO UREA N; FOR CATFISH FILLET, BCF WAS 1 X

Non-Target Organisms (165-5)
1.[ ]
2.[ ]

Common Name: **THIDIAZURON** Date: 08/10/89

GROUND WATER STUDIES (158.75)

1.[ ]
2.[ ]
3.[ ]

DEGRADATION PRODUCTS

1. 1,2,3-THIADIAZOL-5-YL UREA (=21% AFTER A YEAR IN LOAMY SAND)
2. UNDER LIGHT, PARENT COMPD. PARTIALLY ISOMERIZES IN AQUEOUS
3. SOLUTIONS OR ON SOIL TO GIVE PRODUCT #2 WHICH RESISTS PHOTO-
4. DEGRADATION AND HAS WATER SOLUBILITY OF 41-46 PPM.
5. AT LEAST 9 METABOLITES RESULT FROM MICROBIAL ACTION ON THE
6. PARENT COMPOUND.
7.
8.
9.
10.

COMMENTS

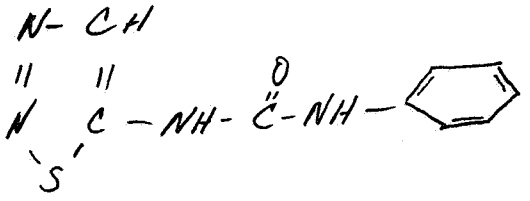
IN LEACHING STUDIES, >80% OF RADIOACT. REMAINED IN THE TOP 4 TO 6 CM OF SOIL. VERY LITTLE LEACHING OCCURRED EVEN UNDER WORST CASE CONDITIONS. PHOTOPRODUCT ALSO DOES NOT LEACH.

T1/2 FOR DEGRADATION IN AEROBIC SOIL IS 4-20 WEEKS DEPENDING ON WHERE THE RADIOACTIVE LABEL IS.

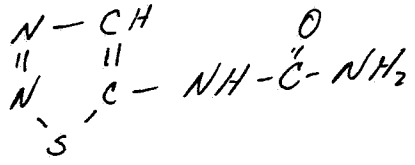
CURRENT STATUS OF CROP ROTATION MAY VARY FROM THAT SHOWN IN THIS SUMMARY.

SOIL Koc = 100 (ESTIMATE).

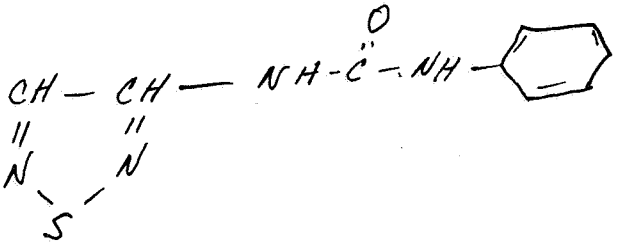
References:
Writer : J. HANNAN



THIDIAZURON



1,2,3-THIADIAZOL-5-YL UREA



PRODUCT #2