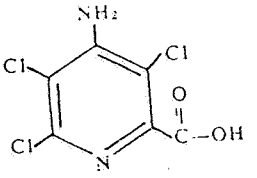

ENVIRONMENTAL FATE & GROUND WATER BRANCH
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY

Common Name: **PICLORAM** Date: 08/09/89
Chem. Name . 4-AMINO-3,5,6-TRICHLOROPICOLINIC ACID
: [ISOOCTYL ESTER, K SALT, TEA SALT, TIPA SALT]
Shaugh. # : 5101 CAS Number: 1918-02-1
Type Pest. . Herbicide
Formulation: VARIOUS
Uses : WHEAT, OATS, BARLEY, NONCROP LANDS
:
:

Empir. Form: $C_6H_3Cl_3N_2O_2$
Mol. Weight: 241.5
Solub.(ppm): 430 @ 20 C

VP (Torr): 6.16E-7
Log Kow : 0.25
Henry's :

Hydrolysis (161-1)
pH 5:[*] ISOOCTYL ESTER STABLE
pH 7:[*] ISOOCTYL ESTER STABLE
pH 9:[*] ISOOCTYL ESTER, 18.4 HRS
pH :[ ]
pH :[ ]
pH :[ ]

Photolysis (161-2, -3, -4)
Air :[ ]
Soil :[#] >384 HRS, ART LT, SiClLm
Water:[ ]
:[ ]
:[ ]
:[ ]

MOBILITY STUDIES (163-1)

Soil Partition (Kd)
1.[*] 0.98 SANDY LOAM 4.2%OM
2.[*] 0.31 CLAY 2.4%OM
3.[*] 0.07 SANDY LOAM 0.94%OM
4.[ ] 0.4 SAND (SURFACE)
5.[ ] 0.1 SAND (BELOW SURFACE)
6.[ ]

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

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

Aerobic Soil (162-1)
1.[*] 100-200 DA IN HOLDREDGE LOAM
2.[*] 200-300 DA IN SiLm
3.[*] >300 DA INLmSd, COMMERCE LOAM
4.[*] AVG T1/2 FOR 7 SOILS WAS 324
5.[ ] DAYS PLUS OR MINUS 142 DAYS
6.[#] ISOOCTYL ESTER: <2 DA IN ClLm,
7.[ ] 2-4 DA SiLm, 4-7 DA SdLm

Anaerobic Soil (162-2)
1.[*] STABLE
2.[ ]
3.[ ]
4.[ ]
5.[ ]
6.[ ]
7.[ ]

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

Anaerobic Aquatic (162-3)
1.[*] NO APPARENT DEGRADATION OF 1
2.[ ] PPM PICLORAM IN 300 DAYS, 25 C
3.[ ]
4.[ ]

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

Common Name: **PICLORAM** Date: 08/09/89

VOLATILITY STUDIES (163-2,3)

[ ] Laboratory.
[ ] Field.

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

Terrestrial Field (164-1)
1.[#] RESIDUES IN TOP 6" SdLm WERE .23 PPM IMMED. AFTER TREATMENT
2.[ ] WITH .5 LB AIA AND DECREASED TO .01 AT 475 DAYS. PICLORAM
3.[ ] WAS 90.8% OF THE RESIDUE AT 357 DAYS POSTTREATMENT.
4.[#] AT A RATE EQUIV TO 1.5 LB/ACRE, PICLOR. IN DIST. WATER WHEN
5.[ ] EXPOSED TO DIRECT SUN DEGRADED AT A RATE OF 0.4 LB/ACRE/DAY.
6.[#] CANADIAN STUDY IN ARID REGIONS SHOWS T1/2 MAY EXCEED 4 YEARS

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

Forestry (164-3)
1.[#] 2 MOS AFTER APPL OF .5-1.0 LB/ACRE, IN OREGON AND WASH.,
2.[ ] PICLORAM UNDETECTED IN RUNOFF: T1/2= <28 DA UPPER 7 CM SOIL

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

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

Confined Rotational Crops (165-1)
1.[#] SdLm, 30 DA AFTER APPL .5 LB AIA, RESIDUE IN MUST-
2.[ ] ARD CORN, AND WHEAT = .04-.76 PPM

Field Rotational Crops (165-2)
1.[ ]
2.[ ]

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

Fish (165-4)
1.[*] BLUE. SUNFISH: WHOLE FISH = <.54 AND <.17, TREATED AT
2.[ ] .01 AND .10 PPM RESPECTIVELYw

Non-Target Organisms (165-5)
1.[*] MOST BROADLEAF CROPS (EXCEPT CRUCIFEROUS) ARE
2.[ ] SENSITIVE TO PICLORAM.

Common Name: **PICLORAM** Date: 08/09/89

GROUND WATER STUDIES (158.75)

1.[ ] PICLORAM HAS BEEN DETECTED IN GW IN 30 SITES IN 8 STATES.
2.[ ]
3.[ ]

DEGRADATION PRODUCTS

1. MAJOR DEGRADATE OF PICLORAM IS CO2.
2. 4-AMINO-3,5-DICHLORO-2-PYRIDINOL
3. 4-AMINO-2,3,5-TRICHLORO PYRIDINE
4. (THE AROMATIC RING IS FIRST OXIDIZED TO AN UNSTABLE INTERMEDI-
5. ATE, FOLLOWED BY RING CLEAVAGE)
6.
7.
8.
9.
10.

COMMENTS

TRANSLOCATES FROM ROOTS AND LEAVES OF PLANTS; ACCUM. IN NEW GROWTH, SORPTION CONTROLLED PRIMARILY BY SOIL ORG CARB CONT BUT ALSO INCREASES WITH DECREASING pH AND INCREASED HYDRATED Fe AND Al OXIDES. FOLLOWING 1 WK EXPOS. TO TEXAS SUNLIGHT, 15% OF THAT APPLIED TO SOIL SAMPLE ON PETRI DISH WAS DEGRADED.

PICLORAM WAS NOT DETECTED BELOW 60 CM, AT ANY CONC, IN Sd OR LmSd 112 DAYS AFTER TREATMENT WITH 1.12 KG/HA.

IN SURFACE 15 CM OF PASTURE, CONC WAS 609-348 PPB IMMED AFTER APPL 2.3 KG/HA,DECREASED TO 64 PPM IN 10 MOS AND 1 PPB AT 29 MOS.

ISOOCTYL ESTER DEGRADES MUCH FASTER THAN PARENT COMPOUND

References: EPA REVIEWS
Writer : J. HANNAN