Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (ARP)
Last Update on March 25, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

LOGOUT	Reviewer:	Section Head:	Date:

Common Name:ACETOCHLOR (ARP)
Smiles Code:
PC Code # :121601 CAS #:34256-82-1 Caswell #:

Chem. Name :2-CHLORO-N-(ETHOXYMETHYL)-N-(2-ETHYL-6-METHYL-PHENYL)-ACETAMIDE
Action Type:HERBICIDE

Trade Names:HARNESS, TOPHAND, SURPASS
(Formul'tn): 7 EC
Physical State: STRAW-COLORED LIQU9ID

Use :CORN-100 %
Patterns :
(% Usage) :
:

Empirical Form: $C_{14}H_{20}NO_2Cl$
Molecular Wgt.: 269.80 Vapor Pressure: 4.40E -5 Torr
Melting Point : °C Boiling Point: °C
Log Kow : 3.0 pKa: @ °C
Henry's : E Atm. M3/Mol (Measured) 7.00E -8 (calc'd)

Solubility in ...				Comments
Water	2.23E 2	ppm	@20.0 °C	
Acetone	E	ppm	@ °C	
Acetonitrile	E	ppm	@ °C	
Benzene	E	ppm	@ °C	
Chloroform	E	ppm	@ °C	
Ethanol	E	ppm	@ °C	
Methanol	E	ppm	@ °C	
Toluene	E	ppm	@ °C	
Xylene	E	ppm	@ °C	
	E	ppm	@ °C	
	E	ppm	@ °C	

Hydrolysis (161-1)
[V] pH 5.0:STABLE
[ ] pH 7.0:STABLE
[ ] pH 9.0:STABLE
[ ] pH :
[ ] pH :
[ ] pH :

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (ARP)
Last Update on March 25, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Photolysis (161-2, -3, -4)
[V] Water:STABLE
[ ] :
[ ] :
[ ] :

[V] Soil :STABLE
[ ] Air :

Aerobic Soil Metabolism (162-1)
[V] 14 DAYS IN SILTY CLAY LOAM (ICI)
[ ] 110 DAYS FOLLOWED BY 245 DAYS FOR SANDY LOAM (ICI)
[ ] 8-12 DAYS IN RAY, DRUMMER, AND SPINKS SOILS (MON)
[ ]
[ ]
[ ]
[ ]

Anaerobic Soil Metabolism (162-2)
[V] 230 DAYS IN SANDY LOAM SOIL. IDENTIFIED DEGRADATES WERE
[ ] OXANILIC ACID, SULFONIC ACID, AND N-(ETHOXYMETHYL)-N-(2-ETHYL-
[ ] 6-METHYLPHENYL)ACETAMIDE. (ICI)
[V] 17-21 DAYS IN SANDY LOAM, SILT LOAM, AND SILTY CLAY LOAM.
[ ]
[ ]
[ ]

Anaerobic Aquatic Metabolism (162-3)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Aerobic Aquatic Metabolism (162-4)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (ARP)
Last Update on March 25, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Soil Partition Coefficient (Kd) (163-1)

	TEXTURE	OM	pH	Kads	Koc	OX ACID	SULF ACID
[ ]	LILLY FIELD SD	0.77	5.4	1.9	428	0.55	0.30
[ ]	FRENSHAM LM SD	1.90	6.3	0.81	74	0.19	0.23
[ ]	EAST JUBILEE SD LM	2.6	6.5	5.9	389	1.20	6.40
[ ]	OLD PADDOCK	5.4	6.8	7.5	239	0.77	1.60
[ ]	FRENCH A (CRS SD)	1.5	5.7	1.9	216	0.27	0.27

Soil Rf Factors (163-1)

[ ]	FRENCH B (SD LM)	8.0	5.3	20	422	0.91	1.10

[V] MOBILITY INFORMATION FOR THIOACETIC ACID SULFOXIDE
[ ] FREUNDLICH Kads VALUES OF 0.1-0.4 FOR ABOVE SOILS.
[ ]
[ ]
[ ]

Laboratory Volatility (163-2)
[ ]
[ ]

Field Volatility (163-3)
[ ]
[ ]

Terrestrial Field Dissipation (164-1)
[V] 8-36 days at 5 sites in U.S. No leaching below 12 inches in
[ ] 4 of the sites. The degradates oxanilic acid and sulfonic acid
[ ] leached to 18 inches of depth in silt loam soil in Illinois.
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Aquatic Dissipation (164-2)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Forestry Dissipation (164-3)
[ ]
[ ]

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (ARP)
Last Update on March 25, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Long-Term Soil Dissipation (164-5)
[ ]
[ ]

Accumulation in Rotational Crops, Confined (165-1)
[V] CONCENTRATION IN CROPS WERE 0.09 PPM IN LETTUCE, 0.14-0.67 PPM
[ ] IN RADISH, 0.05-2.88 PPM IN WHEAT.

Accumulation in Rotational Crops, Field (165-2)
[V] TOTAL RESIDUES WERE <DETECTION LIMIT (0.03 PPM). CONCENTRATIONS
[ ] RANGED FROM 0.128 PPM TO 0.769 PPM IN SOYBEAN PARTS.

Accumulation in Irrigated Crops (165-3)
[ ]
[ ]

Bioaccumulation in Fish (165-4)
[V] 40X, 780X, AND 150X FOR EDIBLE, NON-EDIBLE, AND WHOLE FISH,
[ ] RESPECTIVELY. 66-98 % DEPURATION BY 28 DAYS.

Bioaccumulation in Non-Target Organisms (165-5)
[ ]
[ ]

Ground Water Monitoring, Prospective (166-1)
[ ] 8 PROSPECTIVE STUDIES WILL BE CONDUCTED
[ ] NO SITES SELECTED, NO PROTOCOLS SUBMITTED 3/21/94
[ ]
[ ]

Ground Water Monitoring, Small Scale Retrospective (166-2)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Large Scale Retrospective (166-3)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Miscellaneous Data (158.75)
[ ] STATES SPONSORED MONITORING REQUIRED IN 7 STATES,S
[ ] AT 175 TOTAL SITES
[ ]

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (ARP)
Last Update on March 25, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Field Runoff (167-1)
[ ]
[ ]
[ ]
[ ]

Surface Water Monitoring (167-2)
[ ]
[ ]
[ ]
[ ]

Spray Drift, Droplet Spectrum (201-1)
[ ]
[ ]
[ ]
[ ]

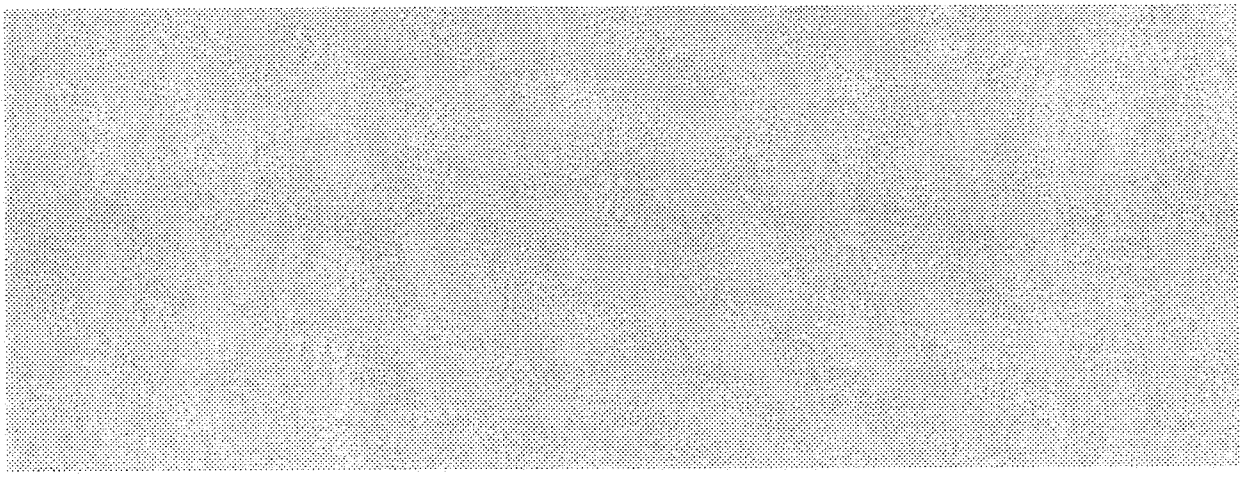
Spray Drift, Field Evaluation (202-1)
[ ]
[ ]
[ ]
[ ]

Degradation Products

OXANILIC ACID
SULFONIC ACID
THIOACETIC ACID SULFOXIDE
C02
OTHER MINOR PRODUCTS

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (ARP)
Last Update on March 25, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Comments



References: EFGWB REVIEWS
Writer : JAB

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (MON)
Last Update on January 31, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

LOGOUT	Reviewer:	Section Head:	Date:

Common Name:ACETOCHLOR (MON)
Smiles Code:
PC Code # :121601 CAS #:34256-82-1 Caswell #:

Chem. Name :2-CHLORO-N-(ETHOXYMETHYL)-N-(2-ETHYL-6-METHYL-PHENYL)-ACETAMIDE
Action Type:Herbicide

Trade Names: HARNESS; MON-097
(Formul'tn):EC
Physical State:

Use :POSTEMERGENCE BROADLEAVED WEED CONTROL
Patterns :
(% Usage) :
:

Empirical Form: $C_{14}H_{20}NO_2Cl$
Molecular Wgt.: 269.00 Vapor Pressure: E Torr
Melting Point : °C Boiling Point: °C
Log Kow : 2.6 pKa: @ °C
Henry's : E Atm. M3/Mol (Measured)

Solubility in ...					Comments
Water	2.23E	2	ppm	@20.0 °C	
Acetone	E		ppm	@ °C	
Acetonitrile	E		ppm	@ °C	
Benzene	E		ppm	@ °C	
Chloroform	E		ppm	@ °C	
Ethanol	E		ppm	@ °C	
Methanol	E		ppm	@ °C	
Toluene	E		ppm	@ °C	
Xylene	E		ppm	@ °C	
	E		ppm	@ °C	
	E		ppm	@ °C	

Hydrolysis (161-1)
[V] pH 5.0:STABLE
[V] pH 7.0:STABLE
[V] pH 9.0:STABLE
[ ] pH :
[ ] pH :
[ ] pH :

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (MON)
Last Update on January 31, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Photolysis (161-2, -3, -4)
[S] Water: "
[ ] :
[ ] :
[ ] :

[S] Soil :INSIGNIFICANT
[ ] Air :

Aerobic Soil Metabolism (162-1)
[V] RAY SOIL: 8 DAYS 22 C
[V] DRUMMER SOIL: 10 DAYS "
[V] SPINKS SOIL: 12 DAYS "
[ ]
[ ]
[ ]
[ ]

Anaerobic Soil Metabolism (162-2)
[ ] RAPID MICROBIAL DEGRADATION
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Anaerobic Aquatic Metabolism (162-3)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Aerobic Aquatic Metabolism (162-4)
[ ] 8-12 DA (SOIL?)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (MON)
Last Update on January 31, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Soil Partition Coefficient (Kd) (163-1)

[V]	SOIL	%OM	Kd
[ ]	LINTONIA	0.7	.4
[ ]	RAY	1.2	1.1
[ ]	SPINKS	2.4	1.6
[ ]	DRUMMER	3.4	2.7

[ ]

Soil Rf Factors (163-1)
[ ] DRUMMER SOIL RETAINED ABOUT
[ ] 57% OF APPL. ACETOCHLOR WHILE
[ ] LINTONIA RETAINED ONLY 4%.
[ ]
[ ]
[ ]

Laboratory Volatility (163-2)
[ ]
[ ]

Field Volatility (163-3)
[ ]
[ ]

Terrestrial Field Dissipation (164-1)
[ ] % ACETOCHL. AND EXTRACT. IN SOIL, AEROBIC CONDITIONS AT 22 C

	SOIL	DAYS	ACETOCHL.	ORG. SOL.	WAT. SOL.	CO2	SOIL BOUND
[ ]	RAY	0	91.1	97.1	0.8	0.0	1.5
[ ]	"	21	15.3	24.6	45.0	3.5	62.8
[ ]	DRUMMER	0	93.8	101.5	0.9	0.0	1.1
[ ]	"	21	19.8	33.8	37.5	3.2	41.4

[ ]
[ ]
[ ]
[ ]

Aquatic Dissipation (164-2)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Forestry Dissipation (164-3)
[ ]
[ ]

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (MON)
Last Update on January 31, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Long-Term Soil Dissipation (164-5)
[ ]
[ ]

Accumulation in Rotational Crops, Confined (165-1)
[ ] DO NOT ROTATE
[ ]

Accumulation in Rotational Crops, Field (165-2)
[ ]
[ ]

Accumulation in Irrigated Crops (165-3)
[ ]
[ ]

Bioaccumulation in Fish (165-4)
[V] BLUEGILL SUNFISH 35X EDIBLE, 150X VISCERA, 84X WHOLE FISH.
[ ] DEPURATION AT 14 DAYS =52%, 90%, 85% FOR EDIB., VISC., WHOLE

Bioaccumulation in Non-Target Organisms (165-5)
[ ]
[ ]

Ground Water Monitoring, Prospective (166-1)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Small Scale Retrospective (166-2)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Large Scale Retrospective (166-3)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Miscellaneous Data (158.75)
[ ]
[ ]
[ ]

10

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (MON)
Last Update on January 31, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Field Runoff (167-1)
[ ]
[ ]
[ ]
[ ]

Surface Water Monitoring (167-2)
[ ]
[ ]
[ ]
[ ]

Spray Drift, Droplet Spectrum (201-1)
[ ]
[ ]
[ ]
[ ]

Spray Drift, Field Evaluation (202-1)
[ ]
[ ]
[ ]
[ ]

Degradation Products

Multiple degradates. Of the three majors (derivatives of methyl oxanilic acid, sulfinylacetic acid, and sulfoacetanilide), none accounted for more than 18% of the Acetochlor applied.

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (MON)
Last Update on January 31, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Comments

References:
Writer : PJH

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (ICI)
Last Update on January 31, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

LOGOUT	Reviewer:	Section Head:	Date:

Common Name:ACETOCHLOR (ICI)
Smiles Code:
PC Code # :121601 CAS #:34256-82-1 Caswell #:

Chem. Name :2-CHLORO-N-(ETHOXYMETHYL)-N-(2-ETHYL-6-METHYL-PHENYL)-ACETAMIDE
Action Type:HERBICIDE

Trade Names:ICIA5676
(Formul'tn):
Physical State: STRAW COLOURED LIQUID

Use :POSTEMERGENCE BROADLEAVED WEED CONTROL
Patterns :
(% Usage) :
:

Empirical Form: $C_{14}H_{20}NO_2Cl$
Molecular Wgt.: 269.80 Vapor Pressure: 4.40E -5 Torr
Melting Point : °C Boiling Point: °C
Log Kow : 3.0 pKa: @ °C
Henry's : E Atm. M3/Mol (Measured) 7.00E -8 (calc'd)

Solubility in ...					Comments
Water	2.23E 2	ppm	@20.0	°C	
Acetone	E	ppm	@	°C	
Acetonitrile	E	ppm	@	°C	
Benzene	E	ppm	@	°C	
Chloroform	E	ppm	@	°C	
Ethanol	E	ppm	@	°C	
Methanol	E	ppm	@	°C	
Toluene	E	ppm	@	°C	
Xylene	E	ppm	@	°C	
	E	ppm	@	°C	
	E	ppm	@	°C	

Hydrolysis (161-1)
[V] pH 5.0:STABLE
[V] pH 7.0:STABLE
[V] pH 9.0:STABLE
[ ] pH :
[ ] pH :
[ ] pH :

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (ICI)
Last Update on January 31, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Photolysis (161-2, -3, -4)
[V] Water:INSIGNIFICANT
[ ] :
[ ] :
[ ] :

[V] Soil :INSIGNIFICANT
[ ] Air :

Aerobic Soil Metabolism (162-1)
[S] SILTY CLAY LOAM:13.5 DAYS (3.2X rate) 55 DAYS (29X rate)
[ ] SANDY LOAM: 110 then 245 DAYS (7.5X rate)
[ ] SANDY LOAM: 300 DAYS (APPLIED 36X rate)
[ ]
[ ]
[ ]
[ ]

Anaerobic Soil Metabolism (162-2)
[S] SANDY LOAM: RELATIVELY STABLE-230 DAYS
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Anaerobic Aquatic Metabolism (162-3)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Aerobic Aquatic Metabolism (162-4)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (ICI)
Last Update on January 31, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Soil Partition Coefficient (Kd) (163-1)

	SOIL	%OM	Kd
[V]	COARSE SAND	0.77	0.05 TO 0.026
[ ]	LOAMY SAND	1.9	0.53 TO 3.34
[ ]	SANDY LOAM	2.6	1.14 TO 3.02
[ ]	CLAY	5.4	3.77 TO 4.93
[ ]	SAND	1.5	0.93 TO 5.48

Soil Rf Factors (163-1)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Laboratory Volatility (163-2)
[ ]
[ ]

Field Volatility (163-3)
[ ]
[ ]

Terrestrial Field Dissipation (164-1)
[S] SILT LOAM SOIL: 36 DAYS FROM UPPER 3.5"
[S] CLAY LOAM SOIL: 26 DAYS FROM UPPER 3.5"
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Aquatic Dissipation (164-2)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Forestry Dissipation (164-3)
[ ]
[ ]

15

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (ICI)
Last Update on January 31, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Long-Term Soil Dissipation (164-5)
[ ]
[ ]

Accumulation in Rotational Crops, Confined (165-1)
[ ]
[ ]

Accumulation in Rotational Crops, Field (165-2)
[ ]
[ ]

Accumulation in Irrigated Crops (165-3)
[ ]
[ ]

Bioaccumulation in Fish (165-4)
[S] BIOCONCENTRATION FACTORS: 40 FOR EDIBLE; 780X FOR NONEDIBLE
[ ] 150X FOR WHOLE FISH - 2 TO 33% AT 28 DAY DEPURATION REMAINED

Bioaccumulation in Non-Target Organisms (165-5)
[ ]
[ ]

Ground Water Monitoring, Prospective (166-1)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Small Scale Retrospective (166-2)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Large Scale Retrospective (166-3)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Miscellaneous Data (158.75)
[ ]
[ ]
[ ]

16

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (ICI)
Last Update on January 31, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Field Runoff (167-1)
[ ]
[ ]
[ ]
[ ]

Surface Water Monitoring (167-2)
[ ]
[ ]
[ ]
[ ]

Spray Drift, Droplet Spectrum (201-1)
[ ]
[ ]
[ ]
[ ]

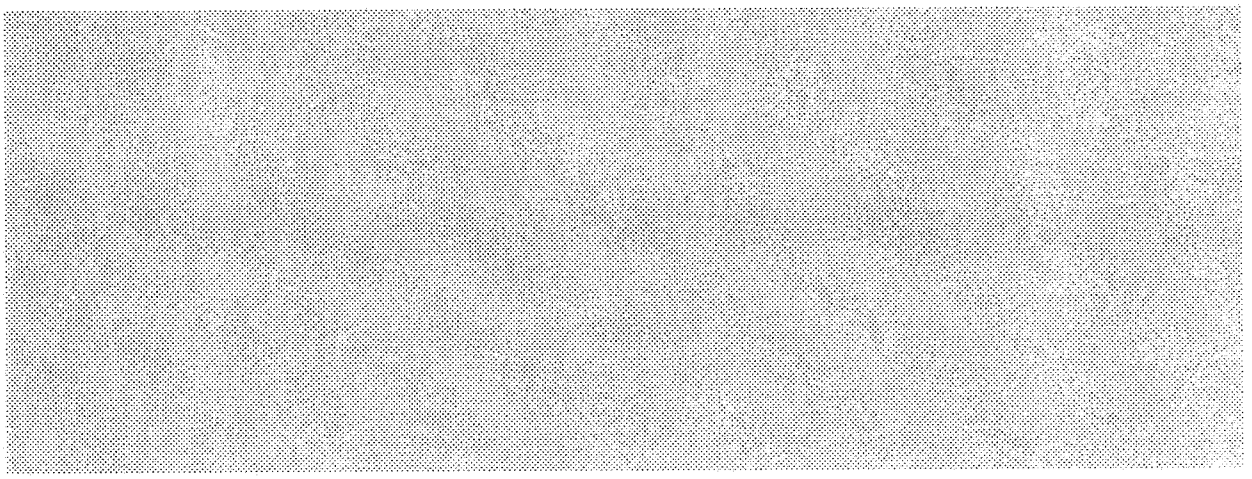
Spray Drift, Field Evaluation (202-1)
[ ]
[ ]
[ ]
[ ]

Degradation Products

MULTIPLE DEGRADATES. MAJOR DEGRADATES WERE METHYL OXANILIC ACID, SULFINYLACETIC ACID, AND SULFOACETANILIDE

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
ACETOCHLOR (ICI)
Last Update on January 31, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Comments



References: ENVIRONMENTAL FATE STUDIES; FARM CHEMICAL HANDBOOK
Writer : WGM