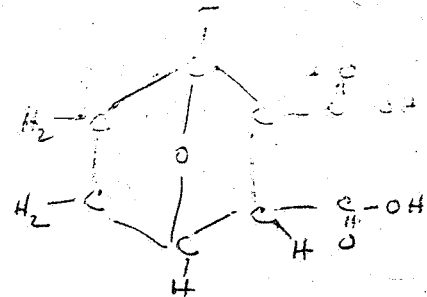


US EPA ARCHIVE DOCUMENT

Endothall Formulations



1. AQUATHOL

038903	active ingred	disodium salt	19.2%
	inert	[REDACTED]	80.8%

2. AQUATHOL K

038904	active	dipotassium salt	40.3%
	inert	[REDACTED]	59.7%

3. AQUATHOL Granular

038904	active	dipotassium salt	10.1%
	inert	[REDACTED]	70.7%
			19.2%

4. AQUATHOL Plus

038904	active	dipotassium salt	22.1%
		potassium salt <u>Silverex</u>	25.3%
	inert	[REDACTED]	52.6%

5. AQUATHOL Plus Granular

038904	active	dipotassium salt	5.1%
		potassium salt <u>Silverex</u>	5.6%
	inert	[REDACTED]	73.5%
			15.8%

6. HYDROTHOL 47

038907	active	di (N,N - dimethylalkylamines)	66.7%
		salt of endothall	
	inert	[REDACTED]	26.5%
			6.8%

[BEST AVAILABLE COPY

INERT INGREDIENT INFORMATION IS NOT INCLUDED

035754

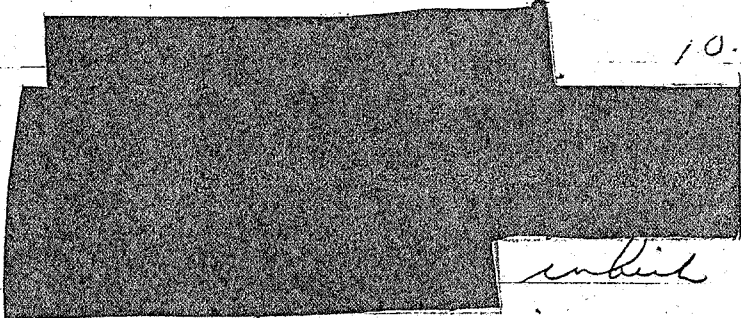
1. 2-ORAL

Active. Dipotassium salt of
endothall

20.0%

10.0%

inerts



which

will furnish inert
ingredients.

INERT INGREDIENT INFORMATION IS NOT INCLUDED

PRODUCT INGREDIENT SOURCE INFORMATION IS NOT INCLUDED

D-Dice

1. D-Dice is double strength Aquathol Granular plus copper sulfate for algae control.
2. Product is formulated as a $3/8$ " pellet.
3. Both components are presently registered separately.
4. Petition submitted to obtain a negligible tolerance for endosulfan in water.

ENDOTHALEN

1. Residues and Disappearance from "whole Body of Water" Treatments

- read as plant debris as micro-organisms significantly ~~increase~~ increase rate of disappearance.
- \approx 7-10 days for chemical to reach same concentration on bottom as on surface, as well as to be evenly distributed in all points of the lake.

~~3. The endothal (amine) products~~

2. Fate of Endothal in the Bio-environment

- Of the various mechanisms for inactivation or depletion, metabolism by micro-organisms predominate.
- Endothal rapidly metabolized by plants and fragments diverted into normal metabolic channels.
- Fish as accumulation of endothal

1. Goldfish and silver salmon fingerlings exposed to two different levels.

Goldfish 6.0 and 12.0 ppm

Silver salmon 2.5 and 5.0 ppm

exposure up to 5 1/2 days.

2. Results - C¹⁴ label from endothal widely distributed throughout both types of fish. (radioactivity apparently not in form of parent herbicide).

Resonance excluded from these studies. But endotoxin is rapidly degraded by fish. The solvent and ion exchange fractionation indicates that very little of the C^{14} label could be endotoxin.

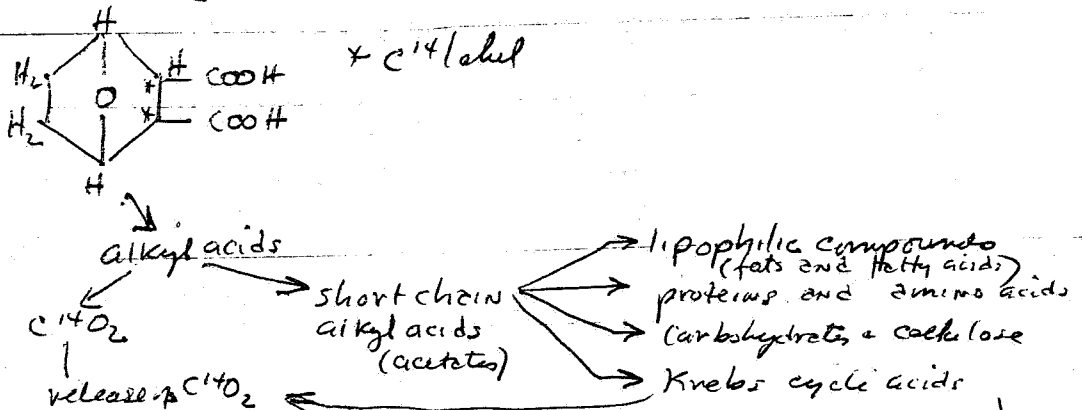
d. Factors affecting the soil behavior of endotoxin.

1. Large differences in amount of endotoxin which was adsorbed by different soil types.
2. Under conditions favorable for microbiological activity, endotoxin quite readily degrades.
3. Ring structure of endotoxin is completely disrupted.
4. Metabolites:

- a. studies; 5-10 days before metabolites began to appear in detectable amounts
- b. metabolic fragments resulting from metabolism are readily degraded by soil microorganisms.

5. Concluded that plants, fish and soil microorganisms are capable of completely metabolizing endotoxin.

~~Path of $C^{14}O_2$ from labeled~~ ^{Suggested} Degradation pathway of endotoxin



(3)

c. Test data show that endothall normally exists from 7-28 days up to not 40 days in soil. Factors influencing existence depend upon soil type, temperature, moisture, and microflora populations.

Animals

1. Reproductive studies

Rats for three generation reproduction study at 100 (Disodium endothall) or 300 ppm in diet.

results - parents and offspring generations exhibited normal reproduction and developmental processes.

2. Metabolic studies

a. C^{14} tagged disodium endothall (ip) for rats.

50% left body within 7 hours and over 99% in 48 hrs. chief route of excretion was in urine with some in feces.

b. C^{14} tagged disodium endothall (mixed with feed)

resulted in 7% recovery in urine, 87% in feces (determined as unchanged endothall). Endothall was eliminated completely from all tissues and organs within 72 hrs.

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3. C^{14} endosulfan (disodium salt) were fed at 0.1, 1 and 5 ppm to goats. No biologically significant amount of endosulfan in milk or muscle tissue.
4. Distribution of endosulfan in biological fluids and tissues of lactating goats (Goats fed 1 and 5 ppm endosulfan). Milk, urine and fecal samples analyzed. Material balance showed majority of ~~the~~^{14C} administered, $\approx 90\%$, appeared in feces with urine accounting for remainder.
5. White Leghorn Hens fed endosulfan (disodium salt) at level of 5 ppm up to 14 days. Highest residues in eggs or flesh are toxicologically insignificant (0.02 ppm or less).

Dissipation of Endosulfan - effects on Aquatic Weeds - Fish

R.L. Yoo Weeds Sci Vol 18 No 2 NOV 1970

1. No single water quality or physical factor appeared to influence dissipation rate of endosulfan.
2. Presence of thermocline increased conc. of endosulfan in water above thermocline.
3. Smallmouth bass, green sunfish and mosquitofish inhabited the reservoir / no dead or distressed fish.

Legend Hydranth 191

Weller as fish ex 18

Hydranth 191

50% fish kill ex 20

Hydr 47

goldfish killed.

Hydr 47

loss, cut fish 4-27

Hydr 47

untaken
fish killed

Hydr 47

Hydr pellets

no kill