

Rec'd 7/18/72

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7-18-72

Reevaluation No. 1 of Environmental Data
70-15 for Endothall
Pennwalt Corp.
Ltr. April 28, 1972

I. Introduction

1. See evaluation ~~dated~~ dated June 29, 1971
and ~~the~~ comment of July 19, 1971
2. See P.P. No. ~~OF 0972~~ OF 0972 and
Reg. No. 4581-EIU

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II. Discussion of data

A. Exhibit 37.

1. About 20-30% of ^{14}C is absorbed on soil and can ~~only~~ only be extracted with 2N-HCl in EtOH. More than 10% was evolved as $^{14}\text{CO}_2$ at 7 days and 15% at 14 days. Anaerobio?

2. Microorganism study ~~of~~ (^{14}C)
 Cloelia absorbed endothall from Hoagland + across nutrient and leveled off at 72 hours.
 Pondweed and milfoil at 24 hours.

Very small amounts were absorbed by ~~of~~ algae.

green
 Chlorella

blue-green
 Chlamydomonas
 Euglena
 Nostoc
 Anabaena

at 2 days 36% evolved as $^{14}\text{CO}_2$,
 40% in cells and 20% in

culture solution.

Algae: *Chlorella* growth was inhibited at 5 days by 4 ppm and not by 2 ppm. *Chlamydomonas*, *Noctua* and *Anabaena* were discolored with 4 ppm at 3 days.

Plants: No effect on *Elodea*, *Egeria* and *Hydrilla* with 3 ppm.

Ⓐ Browning was noted in pondweed and water milfoil at 24 hours with 0.5 ppm.

4. Page 3 of Exh. 37 states 90% was absorbed on one soil and 30% on another. What type soil?

3. Model ecosystem^{14C} (D-88)

Bioaccumulation of endothal did not appear to occur in snails that ate algae containing endothal nor in fish that ate *Daphnia* containing endothal. All had residues. This

study was interesting but
limited to only one time
period for sampling.
A fish study is needed.

4. ^{14}C study on Fish and Crayfish
8 l of H_2O was placed in 4 plastic vessels.
Aquatic plants added
1 inch of lake hydrosoil
~~and~~ aerated 24 hours.
15 Comet goldfish (2 g)
1 vessel contains H_2O (control)
1 " " " " weeds + soil (control)
the other vessels treated

cold study (2.5 ppm) ^{14}C study

Time	goldfish	Crayfish	H_2O	mud	Fish
1 hr	—	—	—	2.7	2.8
1	ND	ND	1.5	1.75	2.8
5	ND	ND	1.39	1.4	2.75
8	ND	ND	ND	.1	.26
12				.07	.2
14				.05	.1

This study was not carried

5.

out long enough. ~~So~~ Soil type ~~not given~~, pH of H_2O , ~~not~~ temperature and other parameters ~~not given~~.

Can endosulfan be absorbed on plastic vessels?

5. ~~Pond~~ Treated Pond Data

(~~Ex~~ Exhibits 38, 39, 40, 41, 42, & 43)

Data has been submitted ~~from~~ from ponds treated at different levels with different formulations.

Samples of H_2O , Fish, Soil and Weeds were analyzed. Samples ~~not~~ collected from treated area, edge of treated area and out of treated area.

The pond treated with Hydant pellets is the only ~~pond~~ use that resulted with residues in ~~fish~~ ^{bluegill} after 10 days and fish exposed to the treatment had 0.09 ~~ppm~~ residues at

34 days. The soil had the same amount of residues.

Note - fish held in cages and not allowed to receive free air all studies

III Conclusion

The following types 70-15 data are needed.

1. Photodegradation in water
2. Fresh residue study
3. Soil metabolism study under aerobic conditions
4. Rate of breakdown and extent of soil adsorption
5. ~~The~~ Some of the data (reports) as submitted by page numbers indicate that complete report was not submitted. If these reports are not complete, the complete report must be submitted.

6. Persistence of endothall pellets in aquatic environment

IV Recommendation

Send out letter with comment in conclusion.