

US EPA ARCHIVE DOCUMENT

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CCs.RNo.  
EPNo.TITLEFormulationCITATIONSIMULATED FIELD STUDY ABSTRACTACCESSION NO.

f) Dyfonate did not move appreciably in agricultural loam soil and was not transported in soil percolation water.

g) Accumulation, distribution, and elimination of residues in bluegill.

REPRODUCTIVE STUDY ABSTRACT

1) Bluegill continuously exposed to 2.0017 mg/l for 35 days. Fish then transferred to uncontaminated water for 14 days.

2) No toxicological response.

3) Maximum concentration of accumulated <sup>14</sup>C-residue in edible portion was observed during days 21-35. (150X)

4) Concentration in non-edible = 7X edible. Mean concentration = 0.25 mg/kg wet weight in non-edible.

5) upon transfer to uncontaminated flowing water, residue levels appeared to decline rapidly to about 20% of original within 3 days.

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3F1379

Formulation

CITATION

SIMULATED FIELD STUDY ABSTRACT

ACCESSION NO.

1. Meat and milk residue study - Dyfonate fed to lactating dairy cattle at 0.1, 0.5, and 1.0 ppm for 28 days. Selected animals slaughtered and samples of fat, liver, kidney, and skeletal muscle analyzed. No detectable residues in any <sup>sample</sup>.
2. Dyfonate feeding study - quail tissue residues. Adult Pharaoh quail (*Coturnix*) fed tech at nominal dietary levels of 0, 5, 10, and 25 ppm for 14 and 28 days. No significant differences in gross appearance, behavior, body weights or egg production. No sign. residues were detected in liver, muscle, fat or eggs.

REPRODUCTIVE STUDY ABSTRACT

### 3. Environmental Studies

- a) Half life in soil = 30-40 days
- b) Volatilization important dissipation factor.
- c) Photolysis in water solution. It appears likely that Dyfonate is lost from solution by codistillation with water.
- d) Photolysis in soil-water slurry - appears that Dyfonate dissipated primarily through volatilization and not by hydrolysis or photolysis.
- e) Dyfonate is rapidly biotransformed to non-toxic metabolites and excreted in animals. Studies have established a similar metabolic pathway in plants and animals.

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041701

CHEM. NAME. Dyfonate

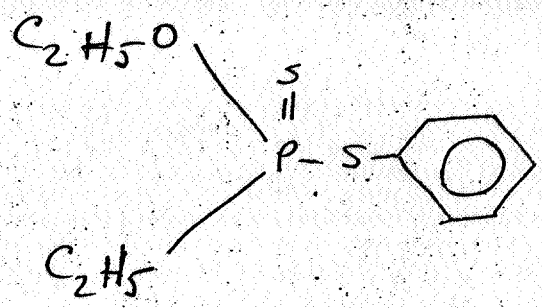
CITATION \_\_\_\_\_ Registration No. \_\_\_\_\_  
 Exp. Permit No. \_\_\_\_\_  
 Petition No. 3F13  
 Submission date April 4  
 Formulation \_\_\_\_\_

ORGANISM	LD <sub>50</sub> Mg/Kg	LC <sub>50</sub>			OTHER DATA TYPE	ANO. _____
		24 hr.	48 hr.	96 hr.		
1 <u>Bluegill</u>					<u>0.028 (0.015 - 0.053) ppm</u>	
2						
3						
4						
5						

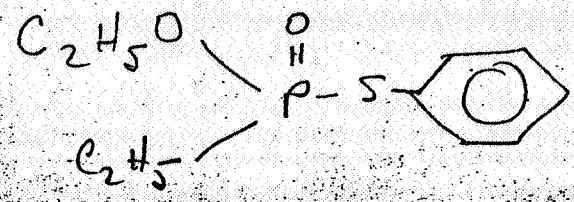
Remarks dealing with any of the above by number

0 dynamic testing (tech); No effect level 0.005 ppm

Dyfonate



Dyfonate oxygen analog (R-9578)





3F1379

DYFONATE

3/2/68 submission

# DYFONATE

## New uses

Dyfonate 4-E → lima beans, tomatoes

476-2056

Dyfonate 15G → Sorghum (m.b.)

476-2050

Dyfonate 10G →

476-1995

lima beans, tomatoes, sorghum

## Residue in tomatoes

0.1 ppm on fruit & vegetables

0.1 ppm on sorghum

0.1 ppm on fruit & vegetables

0.1 ppm on tomato residues

## Sorghum (m.b.)

proposed use: (Texas only) For control of corn

leaf aphid and sorghum mealybug

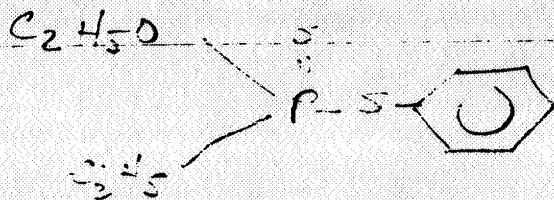
Apply to soil in corn field to control insects

efficacy - sorghum irrigated with water from 1944, Tex.  
Here and Texas; Mexico, 1944; 1948, 1949, 1950

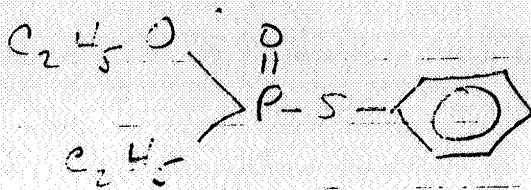
Dyfonate is corn systemic & normal rainfall or  
sprinkler irrigation and sunlight would assist  
in ~~the~~ dissipation of residues

Dyfonate is an organophosphate

O-ethyl-S-phenyl-ethylphosphorothioate



Dyfonate oxygen analog (R-7578) is a mal-oxide



Meat and milk Residue Study in Lactating Dairy Cattle

Dyfonate fed at 0.1, 0.5, and 1.0 ppm for 28 days.

Selected animals slaughtered at 1, 4, 7, 14, 21, and 28 days.

Residues analyzed in muscle, liver, and fat.

No detectable residues in any of these tissues.

Dyfonate feed study - Organ tissue residues

Adult female (1000 lbs) (2 to 4)

Normal diet plus 0.5, 1.0, and 2.0 ppm

14 and 28 days

No significant differences in gross appearance, behavior, body weights or egg production. No stain residues were detected in liver, muscle, fat or eggs.

## Accumulation, distribution, and elimination of 14C in fish

- 1) Bluegill continuously exposed to 0.0017 mg/l for 35 days. Fish then transferred to uncontaminated water for 10 days.
- 2) NO toxicological response
- 3) Maximum concentration of accumulated 14C-residues in edible portion was observed during days 24-35 = 150%
- 4) 7 times concentration in non-edible portions was observed. Mean residue in edible of 0.25 mg/kg and mean concentration of 1.8 mg/kg in non-edible.
- 5) Upon transfer to uncontaminated, flowing water, residue levels appeared to decline rapidly - about 20% of residual ~~in~~ within 3 days. (Note - Relative residue concentration accumulated in fish does not appear to be species. Rapid elimination would seem to preclude significant accumulation in natural populations).

Dyfed

- 1) Half life in soil 30-40 days.
- 2) Volatilization important <sup>dissipation</sup> factor.
- 3) Photolysis in water solution. It appears likely that Dyfedate is lost from solution by adsorption with water.
- 4) Photolysis in soil with *Incurva* appears that Dyfedate is lost primarily through volatilization and by photolysis & photolysis.
- 5) Dyfedate is rapidly transformed to non-toxic metabolites and excreted in animals. Studies have established a similar metabolism of Dyfedate in plants and animals.  
Dyfedate is not stored in plants.
- 6) Dyfedate did not move appreciably in agricultural loam soil and was not desorbed in soil permeation tests.

Each minute - each Dyfedate

96hr  
 Critical 0.028 (0.015 - 0.053) No effect level 0.005



Accepted -

4/24/74 p. 500 105/A sorghum 1000  
granules per acre (air or ground applied).

Sorghum

Need air or ground application in sorghum

application on sorghum.

There is not enough support to be sufficient  
data to conclude sorghum crop - accepted 1972(?)

Studies not needed per 5/29/74  
of 9/1/73 list

Suggest using either volatile grain/phosent

Use the 15G - more toxic

Sorghum crop low sensitive crop in Texas.

Need - statement to cover exposed granules  
a la Furadan! But wait for  
response on simulated field.

Furadan > 500 ppm } granules in soil  
mg/kg = 1 mg/kg