

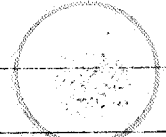
US EPA ARCHIVE DOCUMENT

Glyphosate / Tox

UNDATED

(10)

To: L. Dale, Ph. D.



RELEASABLE

Thru: chief, Toxicology Branch

Thru: ~~ISO~~ Pesticide Science Officer

From: K.L. Bailey, Toxicology Branch

Subject: Glyphosate (Roundup)

# 66/A

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## I Points of Note

A. There are accepted tolerances  
~~as for~~  
for glyphosate in or on  
~~grasses~~ grain crops, grasses  
and soybeans as per  
40 CFR 180.364.

①

B. The nitroso derivative  
of the active ingredient, N-nitrosoglyphosate,  
has been identified as being  
present at levels of .2-.4 ppm  
in the formulated product, Roundup.

(See M.L. Quaipe, Ph.D.

6-29-77 memo, PP6F1861)

C. The Chemistry Branch

has concluded, ~~in the 6-9-77~~

D. Duffy (review concerning

PP6F1861, for certain crops,

that the maximum hypothetical

residues of nitrosamine would

be less than .007 ppm.

~~in the 6-9-77~~ <sup>See</sup> D. Duffy 6-9-77

review concerning PP6F1861)

## II Metabolism

### A. Plant

The Chemistry Branch has in the June 3, 1974 D. Duffy memo concerning PP 461444 concluded that the major metabolic pathway involves the formation of the amino-  
-methylphosphonic acid and glyoxalate via C-N enzymatic bond cleavage. (See attachment for details)

(Note: For details consult attached review.)

B. Mammalian  
Toxicology  
The ~~Chemistry~~ Branch has

in the May 9, 1974 R. Landolt

Memo concerning ~~PP 461444~~

PP 461444 ~~is~~ concluded

the following in relation to

the rat:

1. ~~N-phosphonomethyl glycine rather than animal metabolites.~~ "N-phosphonomethyl-<sup>14</sup>C-glycine remains unchanged in the rat through three different types of treatment and is excreted in urine and feces as the parent compound."

2. ~~Conclusion:~~ "The ingested test material was excreted from the body by apparent first order processes so that the amount excreted was directly proportional to the intake. Upon withdrawal, excretion dropped sharply but plateaued temporarily after four days. This excretory plateau during the withdrawal period was due to the excretion of the mobilized tissue residues which were cleared by the kidney or secreted into the intestine with the bile. The cumulative effect was not localized in a single tissue or organ system and was clearly reversibly bound."

(Note: For ~~details~~ details  
consult attached review)

## II Inhalation Toxicity

### A. Pyrolysis Products.

No information is at hand concerning the ~~pyrolysis~~ inhalation toxicity of the ~~pyrolysis~~ products of this compound.

### B. Formulated Test Product

The acute rat inhalation  $LD_{50}$ , using a 41% formulation, is identified >12 mg/L in the attached R. Landolt review.

## IV Pharmacodynamics

### A. Toxicity

While there ~~are~~ ample toxicity studies at hand concerning this material, there is no information available concerning the mechanism whereby the ~~system~~ compound affects mammalian systems.

### B. Metabolism

See II ~~Metab~~ Metabolism above.



### c. Pharmacokinetics

~~While there is no pharmacokinetic~~

While there is no concrete  
numerical pharmacokinetic

data ~~at~~ at hand, the

attached R. Landolt ~~review~~

review suggests that mammalian

bioaccumulation is not a

problem with this compound.

4. <sup>associated</sup>  
other reviews

D. ~~Much~~ Many of the pertinent toxicity studies at hand were performed by IRT and have not, as yet, been validated.

E. For recent Toxicology Branch Reviews consult the following:

1. 10-4-77 M. Quafe re all petitions
2. 1-25-77 M. Quafe re PP 6G1758  
and 6H5126
3. 9-12-77 M. Quafe re PP 6G1757  
and 6H5132  
and 6H5125