

Glyphosate / Tox

UNDATED

(10)

To: L. Dale, Ph. D.



Thru: chief, Toxicology Branch

Thru: ~~ISO~~ Pesticide Science Officer

From: K.L. Bailey, Toxicology Branch

Subject: Glyphosate (Roundup) # 66/A

BEST AVAILABLE COPY

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~~ ^{See} 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 ~~to~~ concluded
the following in relation to
the rat:

1. ~~N-phosphonomethyl glycine rather than animal metabolites.~~ "N-phosphonomethyl-¹⁴C-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. ^{associated}
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