





















TABLE IV: DISTRIBUTION AND BALANCE OF RADIOACTIVITY EQUIVALENT TO  $\phi-1^{14}C$ -CGA-48988 IN FIELD SOIL

Interval (Weeks) *	0 (12)	5 (17)	3-6	6-9	0-3	3-6	6-9	0-3	3-6	6-9	0-3	3-6	6-9	
Depth (Inches)			0-3	3-6	6-9	0-3	3-6	6-9	0-3	3-6	6-9	0-3	3-6	6-9
Total ppm			0.74	0.47	0.14	0.75	0.33	0.22	0.32	0.33	0.25	0.33	0.33	0.25
Balance			Organic	72.4					33.1	16.6	<*7.9			
			Polar	<*5.7										
			Nonext.	30.4										
			Total	102.8					98.7	99.9	99.8			

The document is not the property of the Ctgb and only the rights of third parties. Further, any publication, distribution, reproduction and use of this document may be subject to intellectual requirements and may be prohibited and violate the right of its owner.

Voorts kan dit document eigendom vallen. Publicatie, verspreiding, en gebruik van dit document, of de inbreuk op de rechthoudende van dit document, kan derhalve niet toegestaan worden.

This document is not the property of the Ctgb and only the rights of third parties. Further, any publication, distribution, reproduction and use of this document may be subject to intellectual requirements and may be prohibited and violate the right of its owner.

Voorts kan dit document eigendom vallen. Publicatie, verspreiding, en gebruik van dit document, of de inbreuk op de rechthoudende van dit document, kan derhalve niet toegestaan worden.

\*Numbers in parentheses indicate the elapsed time since the first treatment with  $\phi-1^{14}C$ -CGA-48988 (7/1/77).

\*\*A < indicates that the level of radioactivity is below the level of detection. A < \* indicates that the level of radioactivity is detectable but below the level of quantitation (6).

ABR-78077

Page 11 of 12

October 10, 1978

TABLE V: CHARACTERISTICS OF FIELD PLOT SOIL

Location: CIBA-GEIGY New York Research Farm,  
Livingston, New York

Texture Silt Loam

pH

5.5

% Organic Matter

1.8

% Sand

44.4

% Silt

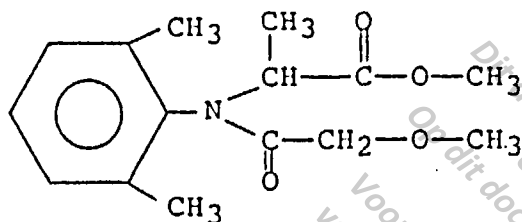
44.0

% Clay

11.6

Op grond van een wettelijke verplichting van het Ctgb en wordt beschikbaar gemaakt  
 de documenten kunnen rechten van derden rusten, waaronder intellectuele  
 vallen. Publicatie, verspreiding, vermenigvuldiging, commerciële exploitatie  
 en gebruik van dit document, of de inhoud hiervan zonder de toestemming  
 van de rechthebbende van dit document, kan derhalve verboden zijn en een  
 schending opleveren van de rechten van deze rechthebbende.

This document is not the property of the Ctgb and only provided based on  
 mandatory freedom of information requirements.  
 The document may be subject to rights of third parties.  
 Furthermore, any publication, distribution, reproduction and/or  
 publishing and any commercial exploitation and use of this document or its  
 contents without the permission of the owner of this document may  
 therefore be prohibited and violate the right of its owner.

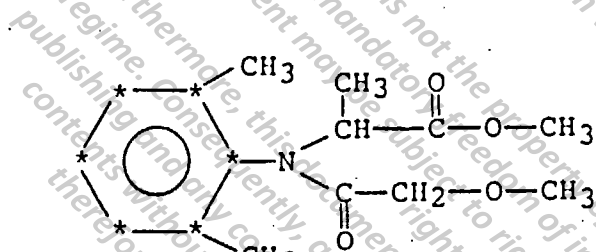


CGA-48988

N-(2,6-dimethylphenyl)-  
 N-(methoxyacetyl)-alanine  
 methyl ester

Radioactive Compound

$\phi$ - $^{14}\text{C}$ -CGA-48988



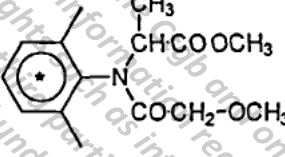
[U-ring- $^{14}\text{C}$ ] N-(2,6-  
 dimethylphenyl)-N-  
 (methoxyacetyl)-alanine  
 methyl ester

\* =  $^{14}\text{C}$

FIGURE 1: CHEMICAL NAMES AND STRUCTURES

Annex II - 6.2. /03 : Uptake and characterization of  $\Phi$ - $^{14}\text{C}$ -CGA 48988 and its soil metabolites in rotation winter wheat

General Information	
Title of the study:	Uptake and characterization of $\Phi$ - $^{14}\text{C}$ -CGA 48988 and its soil metabolites in rotation winter wheat
Report and/or project number:	ABR-78077
Author:	5.1.2.3. W...
Ciba File Number (Desire):	48988/3570
Name and address of testing facility:	Ciba-Geigy Corp., Livingston, NY, USA (Biological phase) Ciba-Geigy Corp., Greensboro, N.C., USA (Analytical phase)
Study period:	9/77 - 7/78
Date of report:	October 10, 1978
Compliance with GLP:	Yes [ ] No, but complies with sound scientific principles [X]
Test guideline(s) used:	-
Deviations from the test guideline:	-

Test substance	
Test substance (code number):	CGA 48988
Batch:	-
$^{14}\text{C}$ -labeled test substance :	Yes [X] No [ ]
Specific activity of [U- $^{14}\text{C}$ -phenyl] label:	1.11 MBq/mg (= 30 $\mu\text{Ci}/\text{mg}$ )
Radiochemical purity of test substance:	not available
Structural formula: (Position of label)	[U- $^{14}\text{C}$ -phenyl]-CGA 48988 $\cdot = ^{14}\text{C}$ 
Formulation used for study:	Yes [ ] No [X]

Test system	
Target crop:	field grown potatoes
Formulation (spray application): Formulation N° (spray application): Solvent for application (if used):	ethanol/water (1:1) solution
Application: Field experiment:	Spray applications with a miniature boom sprayer: 6 over-the-top sprays (starting 6 weeks after plant emergence) at 14 days intervals at a rate of 0.40 lb./A (= 292.3 mg $^{14}\text{C}$ -CGA 48988 / 3' X 19' plot/ treatment (= 8.77mCi), i.e. 1755 mg $^{14}\text{C}$ -CGA 48988/ 6 treatments (= 52.65 mCi for all 6 applications)
Rotational crop (planting / harvest):	winter wheat planting: 12 weeks after the first treatment of target potatoes harvest: 43 weeks after planting the winter wheat or 55 weeks after the first treatment of target potatoes

Soil:	Soil from livingston, NY, USA
	Texture: Silt Loam
	pH: 5.5
	% Organic Matter: 1.8
	% Sand: 44.4
	% Silt: 44.0
	% Clay: 11.6

Summary of findings

Winter wheat was planted in the fall as a rotation crop to white potatoes in a field plot on the CIBA-GEIGY Research Farm at Livingston, New York. The potatoe plot was sprayed over-the-top six times at a rate of 0.40 lb./A. The first spraying was 12 weeks prior to planting the wheat with subsequent sprayings at 14 days intervals.

The uptake of soil radioactivity in the fall grazing harvest was 3.97 ppm equivalent to  $\Phi$ -<sup>14</sup>C-CGA 48988 but decreased to 0.56 ppm (straw) and 0.11 ppm (grain) at maturity. There was little variation in the radioactive extraction and partition characteristics throughout the growing season, except for mature grain. The organic fractions averaged approximately 37% of the total radioactivity, the polar fraction 40% and nonextractable radioactivity 27%. These data indicate that the metabolism of  $\Phi$ -<sup>14</sup>C-CGA 48988 in rotation winter wheat is the same at all stages of growth except mature grain in which metabolism proceeds further to nonextractable materials, 66% nonextractable radioactivity in grain compared to 33% in stalks.

Some of the  $\Phi$ -<sup>14</sup>C-CGA 48988 in the 0 - 3" and 3 - 6" soil layer is probably degraded to <sup>14</sup>CO<sub>2</sub>. This is supported by a decrease in 0 - 3" and 3 - 6" soil radioactivity from 0.74 ppm to 0.32 ppm during a 43 week period. There was no increase on radioactivity in the 6 - 9" soil layer (0.22 ppm), eliminating the possibility of leaching. Yet, in this time period, the balance data show a decrease of radioactivity in the organic fraction from 72.4% to 23.1% accompanied by an increase of radioactivity in the non-extractable fraction from 30.4% to 75.6%. Since no accumulation of radioactivity occurred in the polar fraction (<10%), nonpolar compounds, possibly parent  $\Phi$ -<sup>14</sup>C-CGA 48988, is being adsorbed to soil particles and not all of the ring is being degraded to <sup>14</sup>CO<sub>2</sub>.

