

**DATA EVALUATION RECORD
SEEDLING EMERGENCE TEST
§ 123-1 (TIER II)**

1. **CHEMICAL:** Azoxystrobin **PC Code No.:** 128810
2. **TEST MATERIAL:** ICIA5504 50 WG **Purity:** 51.6%
3. **CITATION**

Authors: C.J. Everett, L. Canning, and J.F.H. Cole
Title: ICIA5504: A Tier II Glasshouse Study to
Evaluate the Effects on Seedling
Emergence on *Brassica napus* and *Daucus*
carota.

Study Completion Date: February 28, 1995

Laboratory: Zeneca Agrochemicals, Bracknell,
Berkshire, UK

Sponsor: Zeneca Ag. Products, Wilmington, DE

Laboratory Report ID: RJ1689B

MRID No.: 436781-60

4. **REVIEWED BY:**

William Erickson
Biologist
EEB/EFED/EPA

Signature: *W. Erickson*

Date: *4/03/96*

5. **APPROVED BY:**

Harry Craven
Section Head 4
EEB/EFED/EPA

Signature: *H. T. Craven*

Date: *6/21/96*

6. **STUDY PARAMETERS**

Definitive Study Duration: 29 days

7. **CONCLUSIONS:** This study is scientifically sound and
fulfills the guideline requirement for Tier II seedling
emergence testing for azoxystrobin.

Results Synopsis:

Most sensitive monocot: none tested

Most sensitive dicot: Carrot

EC₂₅: 0.59 lb ai/acre (dry weight)

95% CI: 0.23-1.5 lb ai/acre

Slope: 4.95

EC₀₅: 0.17 lb ai/acre (emergence)

(1)

MRID No. 436781-60

**DATA EVALUATION RECORD
SEEDLING EMERGENCE TEST
§ 123-1 (TIER II)**

1. **CHEMICAL:** Sulfentrazone

PC Code No.: 129081

2. **TEST MATERIAL:** ICIA5504 50 WG

Purity: 51.6%

3. **CITATION**

Authors: C.J. Everett, L. Canning, and J.F.H. Cole

Title: ICIA5504: A Tier II Glasshouse Study to Evaluate the Effects on Seedling Emergence on *Brassica napus* and *Daucus carota*.

Study Completion Date: February 28, 1995

Laboratory: Zeneca Agrochemicals, Bracknell, Berkshire, UK

Sponsor: Zeneca Ag. Products, Wilmington, DE

Laboratory Report ID: RJ1689B

MRID No.: 436781-60

DP Barcode: D217072, D217078

4. **REVIEWED BY:** Mark Mosler, M.S., Toxicologist,
KBN Engineering and Applied Sciences, Inc.

Signature: *Mark Mosler*

Date: 1/19/96

APPROVED BY: Pim Kosalwat, Ph.D., Senior Scientist
KBN Engineering and Applied Sciences, Inc.

Signature: *P. Kosalwat*

Date: 1/19/96

5. **APPROVED BY:**

Signature:

Date:

6. **STUDY PARAMETERS**

Definitive Study Duration: 29 days

7. **CONCLUSIONS:** This study is scientifically sound and fulfills the guideline requirements for a Tier II seedling emergence test for carrot and rape.

Results Synopsis:

Most sensitive monocot: none tested

Most sensitive dicot: Carrot

Most sensitive parameter: dry weight

EC₂₅: 0.5 lb ai/A

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8. ADEQUACY OF THE STUDY:**A. Classification:** Core.**B. Rationale:** N/A**C. Repairability:** N/A**9. GUIDELINE DEVIATIONS:** No major deviations.**10. SUBMISSION PURPOSE:** New chemical.**11. MATERIALS AND METHODS:****A. Test Organisms**

Guideline Criteria	Reported Information
Species 6 dicots in 4 families, including soybean and a rootcrop; 4 monocots in 2 families, including corn.	<u>Dicots</u> : rape and carrot <u>Monocots</u> : none
Number of seeds per rep 10	10
Source of Seed	In-house and a commercial supplier (carrot seed treated with thiram).
Historical % Germination of Seed	76% for both species

B. Test System

Guideline Criteria	Reported Information
Solvent	None
Site of test	Greenhouse
Planting method / type of pot	Planted at 0.5- or 2-cm depths in trays (7 cm in depth)
Method of application	Track sprayer
Method of watering	Subirrigation with occasional top misting

Guideline Criteria	Reported Information
Growth stage at application Seed or plant.	Seed

C. Test Design

Guideline Criteria	Reported Information
Dose range 2x or 3x	2x
Doses At least 5	7
Controls Negative and solvent	Negative control
Replicates per dose At least 3	3 (6 for the control)
Duration of test 14 days	29 days
Were observations made at least weekly?	Yes
Maximum labeled rate	1.0 lb ai/A

12. REPORTED RESULTS

Guideline Criteria	Reported Information
Quality assurance and GLP compliance statements were included in the report?	Yes
Was an NOEL observed for each species?	Yes
Phytotoxic observations	Yes
Were initial chemical concentrations measured? (Optional)	No
Were adequate raw data included?	Yes

Reported results for the most sensitive endpoints:

Species	Endpoint	EC ₂₅ (lbs ai/A)	NOEC (lbs ai/A)
Carrot	dry weight	>0.5	0.5
Rape	emergence, damage, dry weight	>1.0	1.0

Observations: The major symptoms of toxicity were stunted plants (stems). Leaf and stem senescence were also noted.

Statistical methods: Analysis of variance, with mean separation by t-tests. EC₂₅ values were not determined.

13. VERIFICATION OF STATISTICAL RESULTS:

Statistical Methods: EPA/OPP/EFED Nuthatch Program
 (results attached) EC₂₅ - weighted nonlinear regression
 NOEC - Williams' Test

Species	Endpoint	EC ₂₅ (lb ai/A)	EC ₀₅ (lb ai/A)
Carrot	dry weight	0.59	0.37
	emergence	2.0	0.17
Rape	dry weight	200	2.9
	emergence	3.2	0.55

14. REVIEWER'S COMMENTS: This study is scientifically sound, fulfills the guideline requirement, and is classified **Core**. Although the plants were treated with 5 biological control agents to control thrips, aphids, whiteflies, leaf miners, and red spider mites, these treatments probably did not affect the study. However, plants should be cultivated in areas which are free of insects.

Parameter Estimate 95% Bounds Std.Err. Lower Bound /Estimate Upper

EC1 0.16 0.0022 12. 0.90 0.014

EC5 0.55 0.11 2.7 0.34 0.20

EC25 3.2 0.13 76. 0.67 0.042

EC50 11. 0.027 4.4E+03 1.3 0.0025

Slope = 1.27 Std.Err. = 1.46

Goodness of fit: $p = 0.83$ based on DF= 5.0 19.

RAPE-EM.DAT : Seedling emergence

Observed vs. Predicted Treatment Group Means

Dose	#Reps.	Obs. Mean	Pred. Mean	Obs. -Pred.	Pred. %Control	%Change
0.00	6.00	9.17	9.44	-0.269	100.	0.00
0.0156	3.00	9.33	9.43	-0.101	100.	0.0158
0.0313	3.00	9.67	9.43	0.237	99.9	0.0643
0.0625	3.00	9.67	9.41	0.252	99.8	0.226
0.125	3.00	9.67	9.37	0.297	99.3	0.699
0.250	3.00	9.33	9.26	0.0761	98.1	1.89
0.500	3.00	8.67	9.01	-0.345	95.5	4.50
1.00	3.00	8.67	8.55	0.121	90.6	9.44

!!!Warning: EC25 not bracketed by doses evaluated.

!!!Warning: EC50 not bracketed by doses evaluated.

Analysis of Weighted Variance

Source	SS	DF	MS
Residual	1.6378	24.000	0.068242
Means Lack-of-Fit	0.16221	5.0000	0.032443
Within Groups	1.4756	19.000	0.077663

Directly-fitted parameters and Asymptotic Covariances

Parameter	Estimate	Std.Err.	Correlations
Control Mean	9.4357	0.21856	1.0000
Log10 EC50	1.0383	1.2630	0.43195
Bruce&V. SIGMA	0.78990	0.91041	0.52260
Starting Values	9.4444	5.9663	4.1006

CARR-EM.DAT : Seedling emergence - carrot

Raw data:

Seedling emergence - carrot

8
6
3
3
3
3
3
3
Control
7

RAPE-EM.DAT : Seedling emergence

Williams Test

[One-Sided Test for Decrease, alpha = 0.050000]

Dose Isotone T-bar P-value Significance

Dose	Isotone Means	T-bar	P-value	Significance
0	9.44	-0.466	N.S.	
0.0156	9.44	-0.466	N.S.	
0.0313	9.44	-0.466	N.S.	
0.0625	9.44	-0.466	N.S.	
0.125	9.44	-0.466	N.S.	
0.25	9.33	-0.2796	N.S.	
0.5	8.67	0.8389	N.S.	
1	8.67	0.8389	N.S.	

***=Significant; "N.S."=Not Significant.

Estimates of EC%

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Goodness of fit: $p = 0.23$ based on $DF =$
 CARR-EM.DAT : Seedling emergence - carrot

Observed vs. Predicted Treatment Group Means						
Dose	#Reps.	Obs. Mean	Pred. Mean	Obs. -Pred.	Pred. %Control	%Change
0.00	6.00	7.33	7.30	0.0287	100.	0.00
0.0156	3.00	5.67	7.27	-1.60	99.5	0.466
0.0313	3.00	8.33	7.23	1.10	99.0	1.01
0.0625	3.00	8.67	7.16	1.51	98.0	2.02
0.125	3.00	6.00	7.03	-1.03	96.2	3.80
0.250	3.00	7.00	6.82	0.183	93.3	6.68
0.500	3.00	6.00	6.50	-0.499	89.0	11.0
1.00	3.00	6.33	6.06	0.278	82.9	17.1

!!!Warning: EC25 not bracketed by doses evaluated.

!!!Warning: EC50 not bracketed by doses evaluated.

Analysis of Weighted Variance

Source	SS	DF	MS
Residual	10.945	24.000	0.45606
Means Lack-of-Fit	3.1400	5.0000	0.62799
Within Groups	7.8055	19.000	0.41081

Directly-fitted parameters and Asymptotic Covariances

Parameter	Estimate	Std.Err.	Correlations
Control Mean	7.3046	0.61710	1.0000
log10 EC50	1.0404	1.9621	0.45465
Bruce&V. SIGMA	1.0950	1.8769	0.62593
Starting Values	7.4667	3.3181	3.5677

CARR-EM.DAT : Seedling emergence - carrot

Williams Test

[One-Sided Test for Decrease, $\alpha = 0.050000$]

Dose Isotone T-bar P-value Significance

Dose	Isotone Means	T-bar	P-value	Significance
0	7.47			
0.0156	7.47	-0.114	N.S.	
0.0313	7.47	-0.114	N.S.	
0.0625	7.47	-0.114	N.S.	
0.125	6.5	0.7124	N.S.	
0.25	6.5	0.7124	N.S.	
0.5	6.17	0.9973	N.S.	
1	6.17	0.9973	N.S.	

***=Significant; "N.S."=Not Significant.

Estimates of ECx

Parameter	Estimate	95% Bounds	Std.Err.	Lower Bound	Upper Bound
EC1	0.031	Lower			/Estimate
EC5	0.17	1.7E-07	2.5	5.6E-06	
EC25	2.0	0.00032	1.3	0.0018	
EC50	11.	0.00098	0.83	0.020	
		1.2E+05	2.0	8.9E-05	

Slope = 0.913 Std.Err. = 1.57

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