

1-EEB-15B
4/14/00

MRID No. 449317-20

DATA EVALUATION RECORD
EC₅₀ TEST WITH LEMNA GIBBA
GUIDELINE 123-2 (TIER II)

1. CHEMICAL: Metolachlor PC Code No.: 108801
2. TEST MATERIAL: CGA-354743 (metolachlor metabolite)- 99% pure

3. CITATION:

Authors: T.J. Ward, J.P. Magazu, and R.L. Boeri
Title: Toxicity of CGA-354743 to the Duckweed,
Lemna gibba G3
Study Completion Date: February 1, 1999
Laboratory: T.R. Wilbury Laboratories, Inc.,
Marblehead, MA
Sponsor: Novartis Crop Protection, Inc.,
Greensboro, NC
Laboratory Report ID: 1688-NO
DP Barcode: D260420
MRID No.: 449317-20

4. REVIEWED BY: Mark Mossler, M.S., Environmental Toxicologist,
Golder Associates Inc.

Signature:

Date: 4/13/00

APPROVED BY: Pim Kosalwat, Ph.D., Senior Scientist,
Golder Associates Inc.

Signature:

Date: 4/13/00

5. APPROVED BY: Brian Montague, USEPA

Signature:

Date:

6. STUDY PARAMETERS:

Definitive Test Duration: 14 days
Type of Concentrations: Initial measured

7. CONCLUSIONS: This study is scientifically sound and fulfills
the guideline requirements for an acute aquatic plant study.

Results Synopsis

7-Day EC₅₀: 43 mg ai/L
NOEC(EC₅): 4.0 mg ai/L

95% C.I.: 30-61 mg ai/L
Probit Slope: 1.6

em - probit

Estimated EC Values and Confidence Limits

Point	Conc.	Lower 95% Confidence	Upper Limits
EC 1.00	1.4978	0.4888	2.9327
EC 5.00	4.0347	1.8349	6.5149
EC10.00	6.8434	3.6995	10.0114
EC15.00	9.7755	5.9180	13.4259
EC50.00	44.1288	36.5569	54.7282
EC85.00	199.2075	135.4670	371.8864
EC90.00	284.5592	181.0884	596.7994
EC95.00	482.6480	277.5564	1206.4149
EC99.00	1300.1655	615.2667	4538.7842

$$y = 2.4 + 1.58(x)$$

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Day 7 Lemma Counts				Day 7 Lemma Counts			
1	0	206	176	215	.	.	.
2	13	189	163	158	.	.	.
3	24	115	127	119	.	.	.
4	49	82	100	80	.	.	.
5	98	80	56	64	.	.	.

MODEL: COUNT = C0 * PROBNORM ((LOG EC50 - LOG CONC) / SIGMA)

WEIGHTED REGRESSION

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Non-Linear Least Squares Summary Statistics			Dependent Variable COUNT	
Source	DF	Weighted SS	Weighted MS	
Regression	3	1930.000000	643.3333333	
Residual	12	24.5744745	2.0478729	
Uncorrected Total	15	1954.5744745		
(Corrected Total)	14	312.5158902		

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Iteration	Iter	LOG E25	SIGMA	C0	Weighted SS
0	0	1.224000	0.633000	199.000000	26.069889
1	1	1.148030	0.712243	203.998922	24.556190
2	2	1.157596	0.704620	202.182172	24.575295
3	3	1.155989	0.705897	202.67026	24.574336
4	4	1.156212	0.705693	202.253208	24.574496
5	5	1.156176	0.705726	202.253546	24.574471
6	6	1.156182	0.705720	202.255054	24.574475
7	7	1.156181	0.705721	202.255110	24.574474
8	8	1.156181	0.705721	202.255101	24.574475

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Parameter	Estimate	Asymptotic Std. Error	Confidence Interval Lower	Confidence Interval Upper	Asymptotic 95 %
LOG EC25	1.1561812	0.119041837	0.89681095	1.41555148	
SIGMA	0.7057212	0.104612175	0.47779050	0.93365187	
CO	202.2551012	11.644321374	176.88426705	227.62593540	

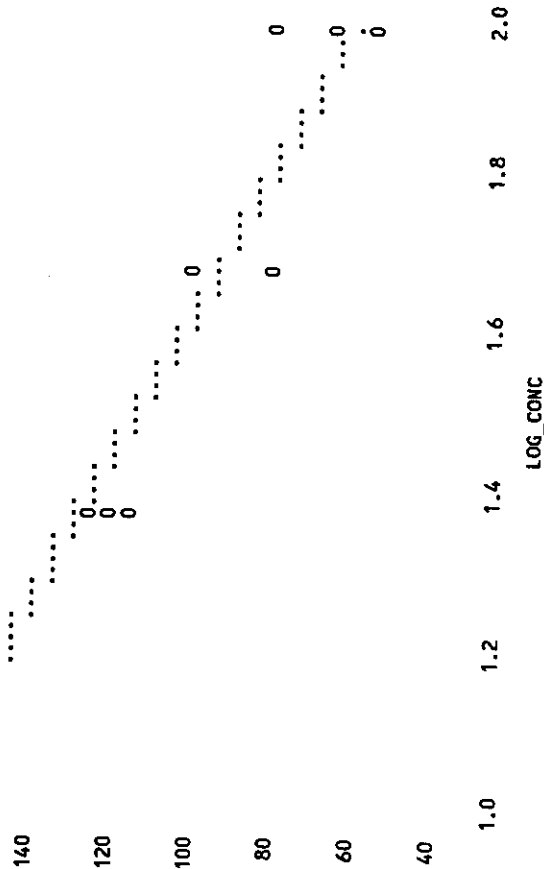
Asymptotic Correlation Matrix

Corr	LOG_EC25	SIGMA	C0
LOG EC25	1	-0.854691109	-0.749826828
SIGMA	-0.854691109	1	0.462815327
C0	-0.749826828	0.462815327	1

Day 7 Lemma Counts

LL: YOUNG = C0 * PROB NORM ((LOG EC25 - LOG CONC) / SIGMA - 0.67449)

SUMMARY OF NONLINEAR REGRESSION



NOTE: 902 obs had missing values. 825 obs hidden.

Day 7 Lemma Counts
COMPARISON OF MEANS FOR NOEL DETERMINATION
TEST IF TREATMENT IS LESS THAN CONTROL
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General Linear Models Procedure
Class Level Information

Class	Levels	Values
DOSE	5	0 13 24 49 98

Number of observations in data set = 30

NOTE: Due to missing values, only 15 observations can be used in this analysis.

Day 7 Lemma Counts
COMPARISON OF MEANS FOR NOEL DETERMINATION
TEST IF TREATMENT IS LESS THAN CONTROL
10:53 Tuesday, April 4, 2000

General Linear Models Procedure

Dependent Variable: RESPONSE					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	36831.33333	9207.83333	45.95	0.0001
Error	10	2004.00000	200.40000		
Corrected Total	14	38835.33333			
R-Square		C.V.	Root MSE	RESPONSE Mean	

Source	DF	Type I SS	Mean Square	F Value	Pr > F
DOSE	4	36831.33333	9207.83333	45.95	0.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
DOSE	4	36831.33333	9207.83333	45.95	0.0001

Day 7 Lemma Counts
COMPARISON OF MEANS FOR NOEL DETERMINATION
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General Linear Models Procedure

Level of DOSE	N	Mean	SD
0	3	199.000000	20.4205779
13	3	170.000000	16.6433170
24	3	120.333333	6.1101009
49	3	87.333333	11.0151411
98	3	66.666667	12.2202019

Day 7 Lemma Counts
COMPARISON OF MEANS FOR NOEL DETERMINATION
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General Linear Models Procedure

Dunnett's One-tailed T tests for variable: RESPONSE

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 10 MSE= 200.4
Critical Value of Dunnett's T= 2.466
Minimum Significant Difference= 28.498

Comparisons significant at the 0.05 level are indicated by ****.

DOSE Comparison	Simultaneous Lower Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit	
	Lower Limit	Upper Limit		Lower Limit	Upper Limit
13 - 0	-57.50	-29.00	-29.00	-0.50	***
24 - 0	-107.17	-78.67	-78.67	-50.17	***
49 - 0	-140.17	-111.67	-111.67	-83.17	***
98 - 0	-160.83	-132.33	-132.33	-103.83	***