28-day Mysid life cycle

408322-0

233899
RECORD NO.

SHAUGHNESSEY NO

(18)
REVIEW NO.

EEB REVIEW

JUL 24 1990

DATE: IN 11-1-88 OUT

FILE OR REG. NO. 264-463

PETITION OR EXP. NO. 6F3443, 6H5507

DATE OF SUBMISSION 9-23-88

DATE RECEIVED BY HED 10-27-88

RD REQUESTED COMPLETION DATE 1-29-89

EEB ESTIMATED COMPLETION DATE 1-29-89

RD ACTION CODE/TYPE OF REVIEW 330

TYPE PRODUCT(S) Fungicide

DATA ACCESSION NO(S) 408322-01

PRODUCT MANAGER, NO. L. Rossi(21)

PRODUCT NAME(S) Rovral (Iprodione)

COMPANY NAME Rhone-Poulenc

SUBMISSION PURPOSE Submission of mysid shrimp chronic toxic study to support proposed use on rice.

SHAUGHNESSEY NO.	CHEMICAL	% A.I.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PESTICIDES AND TOXIC
SUBSTANCES

Subject: Evaluation of 28-day mysid life-cycle

From: James Akerman, Chief
Ecological Effects Branch
Environmental Fate and Effects Division

To: L. Rossi
Product Manager (21)
Registration Division

The Ecological Effects Branch (EEB) has completed its review on a 28-day mysid life-cycle, conducted on Iprodione. The study appears to be scientifically sound and will support registration after certain modifications. EEB disagrees with the pooling of control data for evaluating reproductive effects because of a significance difference noted between the negative and solvent control. Therefore, EEB has recalculated the MATC to reflect > 0.0035 mg/L < 0.0075 mg/L. The study suggests that Iprodione can significantly affect mysid shrimp reproduction at levels that are less than 0.0075 mg/L but not growth or survival.

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MRID ~~40881204~~ 40832201

1. **Chemical:** Iprodione Technical

2. **Test Material:** Technical; Tested as 100% active ingredient.

3. **Study Type:** Chronic 28-day mysid life-cycle

4. **Citation:** Surprenant, D. C. 1988. Chronic toxicity of iprodione technical to mysid shrimp (Mysidopsis bahia). Prepared by Springborne Life Sciences, Inc., Wareham Massachusetts. Submitted by Rhone-Poulenc Ag Company.

5. **Reviewed By:** Miachel Rexrode, Fishery Biologist 7/16/
Ecological Effects Branch
Environmental Fate and Effects Division

6. **Approved By:** Ann Stavola, Section Head 7/16/
Ecological Effects Branch
Environmental Fate and Effects Division

7. **Conclusions:** This study appears to be scientifically sound and will support registration. EEB has recalculated the MATC at > 0.0035 mg/L < 0.0075 mg/L. Iprodione appeared to significantly affect mysid shrimp reproductive success but not growth or survival during this 28-day life cycle test.

8. **Materials and Methods:**

A. **Test Animals:** *Mysidopsis bahia* juveniles (< 24 hours old) were obtained from cultures maintained at Springborn Life Sciences, Inc. Test organisms were cultured and held in natural seawater at conditions compatible with those in the test (i.e. salinity 30 g/L and temperature of 25°C). Mysid culture area received a regulated photoperiod of 16 hours of light and 8 hours darkness. Mysid were fed live brine shrimp nauplii supplemental with Selco® twice daily Hatch Fry Encapsulon®, three times weekly.

B. **Test System:** The test was conducted using an exposure system consisting of a modified intermittent-flow proportional diluter (Mount and Brungs, 1967) temperature-controlled water bath, and a set of 14 test aquaria. The diluter was set-up to deliver 0.5 L of exposure solution/cycle to each replicate test aquarium at a dilution rate of 50%. During the study, the diluter provided the exposure solutions at a rate of about 7 volume additions per aquarium per day.

C. **Dilution Water:** Filtered natural seawater was used as dilution water. Seawater was pumped from Cape Cod Canal, Bourne, Massachusetts, about 4 meters offshore at a depth of about 0.5 meter. Water was filtered to exclude particulates greater than 5 micrometers and then passed through an activated carbon filter prior to use.

D. **Dosage:** Five test concentrations (measured) of 0.055, 0.025, 0.014, 0.0015 and 0.0035 mg/L were run, as well as, a solvent and negative control. Nominal concentrations were at 0.067, 0.034, 0.017, 0.0084 and 0.0042 mg/L.

E. **Design:** During the initial phase (16 days) of chronic exposure 420 mysids were maintained in retention chambers (15 per chamber, 30 per replicate). These retention chambers were glass Petri dishes, 10 cm in diameter, 2 cm deep, to which a 15 cm high nylon screen collar (363-um mesh size) was attached. At the time of sexual maturity (day 16) individual pairs of mysids were transferred into ten cylindrical glass isolation jars.

F. **Statistics:** A one-way, single classification analysis of variance (ANOVA) was conducted for each endpoint (survival, growth and reproductive success). The Chi-Square Goodness of Fit Test was conducted in order to compare the observed sample distribution with a normal distribution. As a check on the assumption of homogeneity of variance, data for each endpoint were analyzed using Bartlett's test. For each endpoint, the performance at each dose level was compared with the

performance of the solvent control using the Williams' Test, the Dunnett's test or the Kruskal-Wallis Test.

9. Reported Results: During the study the performance of both control groups exceeded the standard performance criteria (survival of 90% and reproductive success of 0.5 offspring per female reproductive day). Although no significant difference occurred between the survival and growth of the two control groups, a difference was detected between the reproductive success of the two groups of controls. Since the effect on reproduction by solvent control organisms was not detrimental, the subsequent statistical analysis for all parameters (survival, growth, reproduction) was performed by comparing the treatment data to pooled solvent and negative control data. The following conclusions were reported:

1) Reproductive effects were found in the 0.025 mg/L and 0.014 mg/L treatment levels.
2) Measurements of growth, as dry body weight, were made indicating no significant difference for males or females at any concentration level.
3) MATC was estimated at > 0.0075 mg/L < 0.014 mg/L.

10. Reviewer's Evaluation:

A) Test Procedure: The test procedures were generally in accordance with protocols recommended by the Guidelines.

B) Statistical Analysis: Although the effect on reproduction by solvent control organisms was not detrimental (solvent appeared to enhance reproductive success), EEB concludes that in order to account for any possible misrepresentation of treatment effects, this data must be directly compared with the solvent control (pooling negative and solvent control data is not acceptable in this case). A solvent control duplicates all of the conditions of the toxicant-solvent treatments without the presence of test material.

EEB evaluated the findings of this study with a SAS computer program for one-way analysis of variance (ANOVA) for each endpoint to compare the performance of the solvent control organisms with that of the treatments. The following conclusions were noted.

1) Reproductive effects were found in the 0.0075 mg/L and 0.014 mg/L treatment levels.

2) Measurements of growth indicated no significant difference for males or females at any concentration level.

3) MATC was estimated at > 0.0035 mg/L < 0.0075 mg/L.

11. Reviewer's Conclusions: This study appears to be scientifically sound and will support registration after certain modifications. EEB beleives that pooling the (reproductive) control data for statistical testing was inappropriate since, the solvent control values were significantly different from those of the negative control. Since, a direct comparison between solvent control and treatments should present less bias in the conclusions,therfore, EEB has completed its statistical analysis by comparing the solvent control with treatments and recalculated the MATC to > 0.0035 mg/L < 0.0075 mg/L. Iprodione appeared to significantly affect mysid shrimp reproductive success but not growth or survival during this 28-day life cycle test.

Category: Core

Repairability: N.A.

A:MWT.T A:FWT

Summary of dry weights of male and female mysid shrimp (Mysidopsis bahia) measured at the termination of the 28 day life cycle test with IPRODIONE Technical.

Measured Concentration (mg/L)		Dry Weights (mg) Males Mean SD	(N)	Females Mean SD	(N)
Control	A	0.67 ± 0.10	15	0.85 ± 0.17	14
	B	0.67 ± 0.09	16	0.74 ± 0.11	10
	Mean	0.67 ± 0.09	31	0.81 ± 0.15	24
Solvent Control	A	0.62 ± 0.10	15	0.91 ± 0.18	12
	B	0.67 ± 0.22	12	0.85 ± 0.28	14
	Mean	0.64 ± 0.16	27	0.88 ± 0.24	26
Pooled Control	Mean	0.66 ± 0.13	58	0.84 ± 0.20	50
0.0035	A	0.62 ± 0.09	14	0.64 ± 0.06	12
	B	0.55 ± 0.10	15	0.55 ± 0.11	12
	Mean	0.58 ± 0.10	29	0.60 ± 0.10	24
0.0075	A	0.66 ± 0.12	18	0.90 ± 0.16	10
	B	0.72 ± 0.14	14	0.86 ± 0.18	11
	Mean	0.69 ± 0.13	32	0.87 ± 0.17	21
0.014	A	0.60 ± 0.11	10	0.56 ± 0.11	8
	B	0.68 ± 0.10	15	0.80 ± 0.22	12
	Mean	0.65 ± 0.11	25	0.70 ± 0.21	20
0.025	A	0.60 ± 0.10	14	0.73 ± 0.17	11
	B	0.68 ± 0.10	14	0.79 ± 0.14	11
	Mean	0.64 ± 0.10	28	0.76 ± 0.16	22
0.055	A	0.61 ± 0.12	9	0.67 ± 0.11	6
	B	0.60 ± 0.10	11	0.71 ± 0.11	8
	Mean	0.61 ± 0.11[a]	20	0.69 ± 0.11[a]	14

[a] Since survival was adversely affected, growth data for this treatment level was not statistically compared to that of the pooled control.

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Summary of survival and reproductive success (offspring/female/reproductive day) for the 28-day life cycle test exposing mysid shrimp (Mysidopsis bahia) to IPRODIONE Technical.

A: Repro

Mean Measured Concentration (mg/L)		Survival (%) DAY 28	Reproductive Success	(N)
Control	A	97	0.51 ± 0.28	10
	B	87	0.52 ± 0.35	10
	Mean	92	0.52 ± 0.31	20
Solvent Control	A	90	0.67 ± 0.21	10
	B	87	0.66 ± 0.29	10
	Mean	89	0.67 ± 0.25	20
Pooled Control	Mean	90	0.59 ± 0.29	40
0.0035	A	87	0.58 ± 0.29	10
	B	90	0.63 ± 0.26	10
	Mean	89	0.60 ± 0.27	20
0.0075	A	93	0.55 ± 0.34	10
	B	83	0.59 ± 0.22	10
	Mean	88	0.57 ± 0.28	20
0.014	A	60	0.39 ± 0.23	10
	B	90	0.36 ± 0.27	10
	Mean	75	0.37 ± 0.24[a]	20
0.025	A	83	0.24 ± 0.25	9
	B	83	0.29 ± 0.16	10
	Mean	83	0.27 ± 0.20[a]	19
0.055	A	50	0.11 ± 0.14	9
	B	63	0.18 ± 0.21	10
	Mean	57[a]	0.15 ± 0.18[b]	19

[a] Indicates a significant difference ($P \leq 0.05$) from the solvent control data.

[b] Since survival was adversely affected, reproduction data for this treatment level was not statistically compared to that of the pooled control.

A – A –; B –

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Reproductive Effects

ZOOM R

OUTPUT
Command ===>

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General Linear Models Procedure

Dunnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 7 MSE= 0.0009
Critical Value of Dunnett's T= 3.331
Minimum Significant Difference= 0.0999

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit	
B - A	0.0501	0.1500	0.2499	***
C - A	-0.0099	0.0900	0.1899	
D - A	-0.0449	0.0550	0.1549	
E - A	-0.2399	-0.1400	-0.0401	***
F - A	-0.3499	-0.2500	-0.1501	***
G - A	-0.4699	-0.3700	-0.2701	***

ZOOM R

OUTPUT
Command ===>

ZOOM R

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ZOOM R

OUTPUT
Command ===>

B	- A	0.0656	0.1500	0.2344	***
C	- A	0.0056	0.0900	0.1744	***
D	- A	-0.0294	0.0550	0.1394	
E	- A	-0.2244	-0.1400	-0.0556	
F	- A	-0.3344	-0.2500	-0.1656	
G	- A	-0.4544	-0.3700	-0.2856	

ZOOM R

OUTPUT
Command ===>

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OBS	TRT	RESP
1	A	0.51
2	A	0.52
3	B	0.67
4	B	0.66
5	C	0.58
6	C	0.63
7	D	0.55
8	D	0.59
9	E	0.39
10	E	0.36
11	F	0.24
12	F	0.29
13	G	0.11
14	G	0.18

ZOOM R

OUTPUT
Command ===>

ZOOM R

OUTPUT
Command ===>

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General Linear Models Procedure

Duncan's Multiple Range Test for variable: RESP

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 7 MSE= 0.0009

Number of Means	2	3	4	5	6	7
Critical Range	.0709	.0737	.0753	.0760	.0765	.0767

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	TRT
A	0.6650	2	B
A			

ZOOM R

OUTPUT
Command ===>

B	A	0.6050	2	C
B				
B	C	0.5700	2	D
	C			
	C	0.5150	2	A
	D	0.3750	2	E
	E	0.2650	2	F
	F	0.1450	2	G

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General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	7	A B C D E F G

Number of observations in data set = 14

ZOOM R

OUTPUT
Command ===>

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	6	0.44347143	82.12	0.0001
Error	7	0.00630000		
Corrected Total	13	0.44977143		

R-Square	C.V.	RESP Mean
0.985993	6.687898	0.44857143

Source	DF	Type I SS	F Value	Pr > F

ZOOM R

OUTPUT
Command ===>

TRT	6	0.44347143	82.12	0.0001

Source	DF	Type III SS	F Value	Pr > F
TRT	6	0.44347143	82.12	0.0001

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General Linear Models Procedure

Duncan's Multiple Range Test for variable: RESP

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 55 MSE= 202.6663
WARNING: Cell sizes are not equal.
Harmonic Mean of cell sizes= 14.7046

Number of Means	2	3	4
Critical Range	10.53	11.07	11.43

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	TRT
A	28.067	15	b
A			
A	23.786	14	d
A			
A	22.750	16	a
A			
A	19.786	14	c

ZOOM RI

OUTPUT
Command ===>

B	- A	0.0656	0.1500	0.2344	***
C	- A	0.0056	0.0900	0.1744	***
D	- A	-0.0294	0.0550	0.1394	
E	- A	-0.2244	-0.1400	-0.0556	
F	- A	-0.3344	-0.2500	-0.1656	
G	- A	-0.4544	-0.3700	-0.2856	

```
PROGRAM EDITOR
Command ===>

00001                                SAS       8:42 Friday, June 29, 1990
00002                                                                    15
00003
00004                           OBS     TRT     FWEIGHT      Weight of Females
00005
00006                             1       A        0.85
00007                             2       A        0.74
00008                             3       B        0.91
00009                             4       B        0.85
00010                             5       C        0.64
00011                             6       C        0.55
00012                             7       D        0.90
00013                             8       D        0.86
00014                             9       E        0.56
00015                            10       E        0.80
00016                            11       F        0.73
00017                            12       F        0.79
00018                            13       G        0.67
00019                            14       G        0.71
00020                                     SAS       8:42 Friday, June 29, 1990
00021                                                                    16
                                                                  ZOOM  RI
```

```
PROGRAM EDITOR
Command ===>

00022
00023                       General Linear Models Procedure
00024                           Class Level Information
00025
00026                       Class     Levels    Values
00027
00028                       TRT            7    A B C D E F G
00029
00030
00031                  Number of observations in data set = 14
00032
00033
00034                                     SAS       8:42 Friday, June 29, 1990
00035                                                                    17
00036
00037                       General Linear Models Procedure
00038
00039 Dependent Variable: FWEIGHT
00040
00041 Source                      DF    Sum of Squares    F Value    Pr > F
00042
                                                                  ZOOM  RI
```

```
PROGRAM EDITOR
Command ===>

00043 Model                        6        0.13664286       3.61     0.0585
00044
00045 Error                        7        0.04410000
00046
```

```
00047 Corrected Total          13        0.18074286
00048
00049                     R-Square             C.V.        FWEIGHT Mean
00050
00051                     0.756007         10.52287          0.75428571
00052
00053
00054 Source                    DF      Type I SS   F Value    Pr > F
00055
00056 TRT                        6      0.13664286      3.61    0.0585
00057
00058 Source                    DF     Type III SS   F Value    Pr > F
00059
00060 TRT                        6      0.13664286      3.61    0.0585
00061
00062
00063
                                                          ZOOM===RI
```

```
PROGRAM EDITOR
Command ===>

00064                                  SAS      8:42 Friday, June 29, 1990
00065                                                                  18
00066
00067                    General Linear Models Procedure
00068
00069          Duncan's Multiple Range Test for variable: FWEIGHT
00070
00071     NOTE: This test controls the type I comparisonwise error rate,
00072           not the experimentwise error rate
00073
00074                    Alpha= 0.05  df= 7  MSE= 0.0063
00075
00076         Number of Means      2     3     4     5     6     7
00077         Critical Range   0.188 0.195 0.199 0.201 0.202 0.203
00078
00079     Means with the same letter are not significantly different.
00080
00081           Duncan Grouping              Mean      N  TRT
00082
00083                           A           0.8800      2  B
00084                           A
                                                          ZOOM===RI
```

```
PROGRAM EDITOR
Command ===>

00085                           A           0.8800      2  D
00086                           A
00087                B          A           0.7950      2  A
00088                B          A
00089                B          A           0.7600      2  F
00090                B          A
00091                B          A           0.6900      2  G
00092                B          A
00093                B          A           0.6800      2  E
00094                B
00095                B                      0.5950      2  C
00096
```

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General Linear Models Procedure

Dunnett's T tests for variable: FWEIGHT

ZOOM RI

PROGRAM EDITOR

Command ===>

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

Alpha= 0.05 Confidence= 0.95 df= 7 MSE= 0.0063
Critical Value of Dunnett's T= 3.331
Minimum Significant Difference= 0.2644

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
B - A	-0.1794	0.0850	0.3494
D - A	-0.1794	0.0850	0.3494
F - A	-0.2994	-0.0350	0.2294
G - A	-0.3694	-0.1050	0.1594
E - A	-0.3794	-0.1150	0.1494
C - A	-0.4644	-0.2000	0.0644

ZOOM RI

PROGRAM EDITOR

Command ===>

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

Alpha= 0.05 Confidence= 0.95 df= 7 MSE= 0.0063
Critical Value of Dunnett's T= 3.331
Minimum Significant Difference= 0.2644

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
B - A	-0.1794	0.0850	0.3494
D - A	-0.1794	0.0850	0.3494
F - A	-0.2994	-0.0350	0.2294
G - A	-0.3694	-0.1050	0.1594
E - A	-0.3794	-0.1150	0.1494
C - A	-0.4644	-0.2000	0.0644

ZOOM RI

PROGRAM EDITOR

Command ===>

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General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 7 MSE= 0.0063

Critical Value of Dunnett's T= 2.815

Minimum Significant Difference= 0.2234

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

ZOOM RI

PROGRAM EDITOR

Command ===>

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
B - A	-0.1384	0.0850	0.3084
D - A	-0.1384	0.0850	0.3084
F - A	-0.2584	-0.0350	0.1884
G - A	-0.3284	-0.1050	0.1184
E - A	-0.3384	-0.1150	0.1084
C - A	-0.4234	-0.2000	0.0234

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General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 7 MSE= 0.0063

Critical Value of Dunnett's T= 2.815

ZOOM RI

PROGRAM EDITOR

Command ===>

Minimum Significant Difference= 0.2234

weight of males

OBS	TRT	MWEIGHT
1	A	0.67
2	A	0.67
3	B	0.62
4	B	0.67
5	C	0.62
6	C	0.55
7	D	0.66
8	D	0.72
9	E	0.60
10	E	0.68
11	F	0.60
12	F	0.68
13	G	0.61
14	G	0.60

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	7	A B C D E F G

Number of observations in data set = 14

General Linear Models Procedure

Dependent Variable: MWEIGHT

Source	DF	Sum of Squares	F Value	Pr > F
Model	6	0.01534286	1.50	0.3030
Error	7	0.01195000		
Corrected Total	13	0.02729286		

R-Square	C.V.	MWEIGHT Mean
0.562157	6.463086	0.63928571

Source	DF	Type I SS	F Value	Pr > F
TRT	6	0.01534286	1.50	0.3030

Source	DF	Type III SS	F Value	Pr > F
TRT	6	0.01534286	1.50	0.3030

General Linear Models Procedure

Duncan's Multiple Range Test for variable: MWEIGHT

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 7 MSE= 0.001707

Number of Means	2	3	4	5	6	7
Critical Range	0.098	0.102	0.104	0.105	0.105	0.106

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	TRT
A	0.6900	2	D
A			
A	0.6700	2	A
A			
A	0.6450	2	B
A			
A	0.6400	2	E
A			
A	0.6400	2	F
A			
A	0.6050	2	G
A			
A	0.5850	2	C

General Linear Models Procedure

Dunnett's T tests for variable: MWEIGHT

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

Alpha= 0.05 Confidence= 0.95 df= 7 MSE= 0.001707
Critical Value of Dunnett's T= 3.331
Minimum Significant Difference= 0.1376

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
D - A	-0.1176	0.0200	0.1576
B - A	-0.1626	-0.0250	0.1126
E - A	-0.1676	-0.0300	0.1076

F	- A	-0.1676	-0.0300	0.1076
G	- A	-0.2026	-0.0650	0.0726
C	- A	-0.2226	-0.0850	0.0525

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 7 MSE= 0.001707
Critical Value of Dunnett's T= 2.815
Minimum Significant Difference= 0.1163

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

TRT Comparison		Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
D	- A	-0.0963	0.0200	0.1363
B	- A	-0.1413	-0.0250	0.0913
E	- A	-0.1463	-0.0300	0.0863
F	- A	-0.1463	-0.0300	0.0863
G	- A	-0.1813	-0.0650	0.0513
C	- A	-0.2013	-0.0850	0.0313

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 7 MSE= 0.001707
Critical Value of Dunnett's T= 2.815
Minimum Significant Difference= 0.1163

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

TRT Comparison		Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
D	- A	-0.0963	0.0200	0.1363
B	- A	-0.1413	-0.0250	0.0913
E	- A	-0.1463	-0.0300	0.0863
F	- A	-0.1463	-0.0300	0.0863
G	- A	-0.1813	-0.0650	0.0513

C - A	-0.2013	-0.0850	0.0313