

US EPA ARCHIVE DOCUMENT

DATA EVALUATION RECORD
§ 71-4 -- AVIAN REPRODUCTION TEST

1. **CHEMICAL:** Azoxystrobin PC Code No.: 128810
2. **TEST MATERIAL:** ICIA5504 Purity: 96.2%
3. **CITATION:**

Authors: Cameron, D.M., A.J. Johnson, M.H.
Rodgers, G.F. Healey, A. Anderson, and I.
S. Dawe

Title: ICIA5504: Effects on Reproduction in
Mallard Duck After Dietary Administration

Study Completion Date: June 7, 1994

Laboratory: Huntingdon Research Center Ltd.,
Huntington, Cambridgeshire, UK

Sponsor: Zeneca Ag Products, Wilmington, DE

Laboratory Report ID: ISN 315/942369

MRID No.: 436781-13

4. **REVIEWED BY:**

William Erickson
Biologist
EEB/EFED/EPA

Signature: *W. Erickson*

Date: *4/10/96*

5. **APPROVED BY:**

Harry Craven
Section Head 4
EEB/EFED/EPA

Signature: *H.T. Craven*

Date: *6/21/96*

6. **STUDY PARAMETERS:**

Scientific Name of Test Organism: *Anas platyrhynchos*

Age of Test Organisms at Test Initiation: 28 weeks

Definitive Study Duration: 23 weeks

7. **CONCLUSIONS:** This study is scientifically sound and meets the guideline requirements for an avian reproduction study using mallard ducks.

Results Synopsis:

Most sensitive endpoint: no. eggs laid

NOEC: 1200 ppm

LOEC: 3000 ppm

DATA EVALUATION RECORD
§ 71-4 -- AVIAN REPRODUCTION TEST

1. **CHEMICAL:** ^{Azoxy-strobin} ~~Sulfentrazone~~ 128810
PC Code No.: 129081
2. **TEST MATERIAL:** ICIA5504 Purity: 96.2%

3. **CITATION:**

Authors: Cameron, D.M., A.J. Johnson, M.H.
Rodgers, G.F. Healey, A. Anderson, and I.
S. Dawe

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MRID No.: 436781-13

DP Barcode: ~~D217072, D217078~~

4. **REVIEWED BY:** Max Feken, M.S., Environmental Toxicologist,
KBN Engineering and Applied Sciences, Inc.

Signature:  Date: 1/22/96

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

Signature: P. Kosalwat Date: 1/22/96

5. **APPROVED BY:**

Signature: Date:

6. **STUDY PARAMETERS:**

Scientific Name of Test Organism: *Anas platyrhynchos*

Age of Test Organisms at Test Initiation: 28 weeks

Definitive Study Duration: 23 weeks

7. **CONCLUSIONS:** This study is scientifically sound and meets the guideline requirements for an avian reproduction study using mallard ducks. The NOEC was determined to be 1200 ppm based upon a reduction in the number of eggs laid, ~~eggs set, viable embryos, live 3-week embryos, normal hatchlings, and 14-day-old survivors at the next highest concentration level (3000 ppm).~~

8. **ADEQUACY OF THE STUDY:**

A. Classification: Core.

B. Rationale: N/A.

C. Repairability: N/A.

9. **GUIDELINE DEVIATIONS:** The humidity in the egg storage unit and egg hatcher was not reported.

10. **SUBMISSION PURPOSE:** New Chemical.

11. **MATERIALS AND METHODS:**

A. Test Organisms

Guideline Criteria	Reported Information
<p><u>Species</u> A wild waterfowl species, preferably the mallard (<i>Anas platyrhynchos</i>), or an upland game species, preferably the northern bobwhite (<i>Colinus virginianus</i>)</p>	<p>Mallard (<i>Anas platyrhynchos</i>)</p>
<p><u>Age at beginning of test</u> Birds should be approaching their first breeding season.</p>	<p>28 weeks old; birds were approaching their first breeding season.</p>
<p><u>Supplier</u> All birds should be from the same source.</p>	<p>The County Game Farms, Ashford, Kent, UK</p>
<p>Were birds pen-reared?</p>	<p>Yes.</p>
<p>Were birds phenotypically indistinguishable from wild birds?</p>	<p>Yes.</p>
<p><u>Health observation period</u> 2 to 6 weeks.</p>	<p>2 weeks</p>
<p>Were birds healthy and without excessive mortality prior to the test?</p>	<p>Yes.</p>

B. Test System

Guideline Criteria	Reported Information
Were pens for adult birds of adequate size and designed to conform to good husbandry practices?	Yes.
Were pens for chicks of adequate size and designed to conform to good husbandry practices?	Yes.
Were pens constructed of a nonbinding material such as galvanized or stainless steel?	Yes.
Was adequate ventilation provided?	Yes.
<u>Temperature</u> Approx. 21°C (70°F)	Mean: maximum 22°C minimum 17°C
<u>Relative humidity</u> Approx. 55%	Mean: 79-93%
<u>Lighting</u> First 8 weeks: 7 h per day. Thereafter: 16-17 h per day. At least 6 footcandles at bird level.	First 7 weeks: 7 h per day. Thereafter: 17 h per day. Illumination: 70 to 200 lux
<u>Diet</u> A commercial breeder feed (or its equivalent) that is appropriate for the test species.	Avian layer diet manufactured by Special Diets Services, Witham, Essex, UK. Ducklings were fed standard HRC duckling diet.
<u>Preparation of test diet</u> A premixed containing the test substance should be mechanically mixed with basal diet. If an evaporative vehicle is used, it must be completely evaporated prior to feeding.	The test material was mixed with basal diet into a premix that was used for weekly preparation of the final diet.
Was the premix stored under conditions which maintain stability?	Not reported.

Guideline Criteria	Reported Information
Was the diet analyzed to verify homogeneity and stability of the test substance?	Yes.
<u>Replenishment of feed</u>	Adult diets were prepared weekly. Additional diets were prepared when necessary. Feed and water were provided <i>ad libitum</i> for the adults and offspring.

C. Test Design

Guideline Criteria	Reported Information
<u>Nominal concentrations</u> At least two concentrations other than the control are required; three or more are strongly recommended. The highest test concentrations should show a significant effect or be at or above the maximum field residue level.	Nominal concentrations: Control, 500, 1200, 3000 ppm Max. residue level: Not reported.
<u>Control</u> Vehicle control.	Negative control.
<u>Vehicle</u> Corn oil or other appropriate vehicle.	None was used.
<u>Vehicle amount (% of diet by weight)</u> Not more than 2%.	N/A
<u>Number of birds per pen</u> One male and 1 female per pen is strongly recommended. For quail, 1 male and 2 females may be acceptable. For ducks, 2 males and 5 females may be acceptable.	2 males and 5 females per pen.

Guideline Criteria	Reported Information
<p><u>Number of pens per group</u> At least 5 replicate pens are required for mallards housed in groups of 7. For other arrangements, at least 12 pens are required, but considerably more may be needed if birds are kept in pairs.</p>	6 pens per group.
<p><u>Pre-laying exposure duration</u> At least 10 weeks prior to the onset of egg-laying.</p>	10 weeks
<p><u>Exposure duration with egg-laying</u> At least 10 weeks.</p>	13 weeks
<p><u>Withdrawal period</u> If reduced reproduction is evident, a withdrawal period of up to 3 weeks may be added to the test phase.</p>	N/A.

D. Egg Collection and Incubation

Guideline Criteria	Reported Information
Were eggs collected daily?	Yes.
<p><u>Egg storage temperature</u> Approximately 16°C (61°F)</p>	16°C
<p><u>Egg storage humidity</u> Approximately 65%</p>	Not reported
Were eggs set weekly?	Yes.
Were eggs candled for cracks prior to being set for incubation on Day 0?	Yes.
<p><u>Candling for fertility</u> Quail: approx. Day 11 Ducks: approx. Day 14</p>	Eggs were candled on Days 14 and 21.
<p><u>Transfer of eggs to hatcher</u> Bobwhite: Day 21 Mallard: Day 23</p>	Eggs were transferred on Day 24.

Guideline Criteria	Reported Information
<u>Hatching temperature</u> 39°C (102°F) is recommended	37.5°C
<u>Hatching humidity</u> 70% is recommended	Not reported
<u>Day after egg set that chicks were removed and counted</u> Bobwhite: Day 24 Mallard: Day 27	Chicks were removed and counted by Day 27.

E. Eggshell Thickness Measurement

Guideline Criteria	Reported Information
<u>Collection Schedule</u> At least once every two weeks (Week 1, 3, 5, 7 and 9).	Eggs laid on the first day(s) of Weeks 11, 13, 15, 17, 19 and 21 in each replicate were collected for eggshell thickness measurement.
<u>Were shells opened, washed, and air dry for at least 48 hours before measuring?</u>	Yes; shells air dried for at least 48 hours before measuring.
<u>Measurement</u> 3-4 measurements per eggs to the nearest 0.01 mm.	4 measurements to the nearest 0.01 mm.

12. REPORTED RESULTS:

Guideline Criteria	Reported Information
Quality assurance and GLP compliance statements were included in the report?	Yes.
Did diet analysis verify the concentrations of test material?	Yes.
Did diet analysis show that the test substance was stable and homogeneous?	Yes.
Were body weights of adults reported for test initiation and biweekly up to week 8 or the onset of egg laying?	Yes.
Was average food consumption of adults reported at least biweekly?	Yes.
<u>Reproductive Endpoints</u> The following endpoints should be reported: <ul style="list-style-type: none"> ● Eggs laid ● Eggs cracked ● Eggs set ● Viable embryos ● Live 3-week embryos ● Normal hatchlings ● 14-day-old survivors ● Weights of 14-day-old survivors ● Egg shell thickness ● Total food consumption ● Initial and final body weights, by sex 	All endpoints listed at left plus hatchling weight.
Were data reported by pen for all endpoints?	Yes.

Significant Results: The number of eggs laid per pen and per female were significantly reduced at the 3000 ppm concentration level. The number of 14-day survivors per female at 3000 ppm was also found to be significantly lower than the controls, which was likely due to the reduced number of eggs laid. No evidence of

treatment related effects on duckling bodyweights at either hatching or 14 days old was evident. No treatment related mortalities, overt signs of toxicity, or treatment related effects on body weight or feed consumption were evident at any test concentration.

13. VERIFIED STATISTICAL RESULTS: (attached)

Endpoint means per pen (+ SD)

Endpoint	Control	500 ppm	1200 ppm	3000 ppm
Eggs laid (EL)	222 (64)	266 (46)	219 (50)	140 (50)
Eggs cracked (EC)	2.0 (1.5)	4.3 (3.8)	3.2 (1.3)	1.3 (1.2)
Eggs set (ES)	204 (61)	243 (42)	202 (47)	129 (45)
Viable embryos (VE)	196 (62)	238 (42)	176 (84)	108 (31)
Live 3-wk embryos (LE)	183 (60)	221 (39)	168 (79)	100 (28)
Normal hatchlings (NH)	110 (40)	132 (33)	109 (54)	59 (24)
14-day-old survivors (HS)	103 (40)	126 (32)	105 (52)	56 (23)
Egg shell thickness (THICK)	0.352 (0.016)	0.350 (0.013)	0.352 (0.011)	0.351 (0.011)
Hatchling weight (HATWT)	35.0 (1.1)	35.4 (1.2)	36.0 (1.4)	35.4 (1.4)
14-day-old survivor weight (SURVWT)	259 (7)	258 (12)	269 (19)	257 (13)
Mean food consumption (FOOD) g/bird/day	177 (22)	188 (18)	190 (27)	195 (22)
Final weight of males (POSTM)	1250 (121)	1316 (82)	1307 (88)	1278 (68)
Final weight of females (POSTF)	1198 (74)	1236 (47)	1225 (50)	1157 (40)

14. **REVIEWER'S COMMENTS:** Based on a significant reduction in the number of eggs laid, the NOEC and LOEC were determined to be 1200 and 3000 ppm, respectively. This study is scientifically sound and fulfills the guideline requirements for an avian reproduction test using mallard ducks. The study is classified as **Core**.

OBS	LEVEL	EL	EC	ES	VE	LE	NH	HS	THICK
1	CONTROL	230	1	214	211	203	110	105	0.373
2	CONTROL	221	1	203	191	173	104	90	0.347
3	CONTROL	324	2	301	296	280	181	173	0.354
4	CONTROL	155	5	139	133	116	63	54	0.350
5	CONTROL	152	1	137	128	126	84	80	0.362
6	CONTROL	250	2	229	218	200	116	113	0.342
7	TRT1	332	8	301	294	269	143	138	0.376
8	TRT1	246	1	231	229	215	114	114	0.347
9	TRT1	264	2	243	241	225	160	148	0.343
10	TRT1	197	6	175	165	152	71	66	0.345
11	TRT1	259	0	240	238	227	155	149	0.345
12	TRT1	298	9	265	258	239	145	139	0.348
13	TRT2	224	4	208	205	201	113	111	0.338
14	TRT2	259	4	239	226	207	135	129	0.357
15	TRT2	251	4	234	217	206	148	146	0.338
16	TRT2	121	1	110	7	7	4	4	0.360
17	TRT2	221	2	202	192	187	146	136	0.360
18	TRT2	237	4	216	208	199	110	102	0.360
19	TRT3	194	3	175	141	123	77	70	0.358
20	TRT3	94	2	85	85	81	38	38	0.356
21	TRT3	104	0	99	95	87	49	46	0.360
22	TRT3	179	0	166	101	94	43	42	0.356
23	TRT3	87	1	79	75	70	46	44	0.340
24	TRT3	184	2	167	150	145	99	97	0.335

Variable	Label	N	Mean	Std Dev	CV
EL		6	222.000	64.253	28.943
EC		6	2.000	1.549	77.460
ES		6	203.833	61.398	30.122
VE		6	196.167	62.172	31.693
LE		6	183.000	59.893	32.729
NH		6	109.667	39.993	36.468
HS		6	102.500	40.253	39.271
THICK		6	0.352	0.016	4.588
HATWT		6	35.033	1.052	3.003
SURVWT		6	258.750	6.978	2.697
FOOD		6	176.52	21.883	12.397
POSTM		6	188.03	100.077	8.742
POSTF		6	190.35	120.954	9.680
ES/EL (%)		6	91.53	35.880	3.291
(EL-EC)/EL (%)		6	98.97	73.891	6.170
VE/ES (%)		6	95.89	91.535	1.519
LE/VE (%)		6	93.13	48.843	11.864
NH/LE (%)		6	48.84	5.795	1.095
NH/ES (%)		6	53.34	98.969	2.244
NH/VE (%)		6	59.65	95.889	2.152
HS/ES (%)		6	49.58	53.343	11.538
HS/NH (%)		6	92.66	2.152	1.095
THICK		6	0.35	0.35	0.35
HATWT		6	35.03	35.98	35.37
SURVWT		6	258.75	268.93	257.48
FOOD		6	176.52	188.03	195.10
POSTM		6	1249.50	1316.00	1307.33
POSTF		6	1197.50	1236.00	1224.67

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 15:32 Monday, December 18, 1995

LEVEL=CONTROL

Variable	Label	N	Mean	Std Dev	CV
EL		6	222.000	64.253	28.943
EC		6	2.000	1.549	77.460
ES		6	203.833	61.398	30.122
VE		6	196.167	62.172	31.693
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HS		6	102.500	40.253	39.271
THICK		6	0.352	0.016	4.588
HATWT		6	35.033	1.052	3.003
SURVWT		6	258.750	6.978	2.697
FOOD		6	176.517	21.883	12.397
PREM		6	1144.833	100.077	8.742
POSTM		6	1249.500	120.954	9.680
POSTF		6	1090.167	35.880	3.291
ES/EL (%)		6	91.535	73.891	6.170
NH/VE (%)		6	48.843	5.795	1.095
(EL-EC)/EL (%)		6	98.969	95.889	2.244
VE/ES (%)		6	95.889	53.343	11.538
NH/ES (%)		6	53.343	98.969	2.244

OBS	HATWT	SURVWT	FOOD	PREM	POSTM	PREF	POSTF
1	36.8	253.1	167.3	978	1023	1093	1323
2	33.8	252.0	199.3	1110	1218	1098	1189
3	34.5	263.1	170.1	1178	1305	1055	1203
4	35.6	265.6	161.3	1280	1348	1113	1202
5	35.9	266.4	207.8	1138	1265	1043	1175
6	33.7	260.7	180.7	1183	1220	1160	1264
7	36.8	280.1	178.0	1225	1288	1065	1182
8	33.7	244.7	189.0	1225	1348	1144	1144
9	34.3	254.3	217.4	1293	1450	1110	1221
10	36.2	255.2	199.0	1153	1250	1083	1266
11	35.4	252.7	164.1	1138	1340	1162	1298
12	34.1	281.9	206.6	1268	1370	1058	1150
13	35.9	289.5	155.1	1148	1183	1118	1251
14	36.8	289.2	219.4	1130	1225	1131	1292
15	38.0	271.0	203.7	1258	1408	1152	1203
16	36.3	266.8	199.9	1260	1300	1135	1251
17	34.8	235.2	157.4	1220	1358	1145	1201
18	37.5	247.6	170.0	1205	1195	1065	1178
19	34.9	258.4	223.0	1133	1278	1092	1140
20	33.5	236.8	169.8	1225	1250	1044	1116
21	35.4	273.5	199.4	1163	1235	1129	1149
22	36.4	262.0	196.6	1250	1320	1096	1132
23	34.5	266.6	211.8	1223	1388	1134	1228

LEVEL	TRT1	TRT2	TRT3
CONTROL			
MEAN	266.00	218.83	140.33
MEAN	2.00	4.33	1.33

Variable	Label	N	Mean	Std Dev	CV
HS_ES	HS/ES (%)	6	49.577	7.523	15.175
LE_VE	LE/VE (%)	6	93.130	4.079	4.380
NH_LE	NH/LE (%)	6	59.654	5.205	8.725
HS_NH	HS/NH (%)	6	92.657	5.124	5.531

LEVEL=TRT1

Variable	Label	N	Mean	Std Dev	CV
EL		6	266.000	46.030	17.305
EC		6	4.333	3.830	88.378
ES		6	242.500	41.530	17.126
VE		6	237.500	42.317	17.818
LE		6	221.167	38.670	17.485
NH		6	132.333	33.068	24.988
HS		6	123.667	31.841	25.338
THICK		6	0.013	0.350	3.672
HATWT		6	35.383	1.179	3.332
SURVWT		6	257.950	12.018	4.659
FOOD		6	188.033	18.498	9.838
PREM		6	1202.833	56.908	4.731
POSTM		6	1316.000	82.355	6.258
PREF		6	1120.667	41.064	3.664
POSTF		6	1236.000	47.476	3.841
ES_EL	ES/EL (%)	6	91.172	2.060	2.260
NH_EL	NH/EL (%)	6	49.500	9.530	19.252
ENC_EL	(EL-EC)/EL (%)	6	98.393	1.375	1.398
VE_ES	VE/ES (%)	6	97.799	1.903	1.946
NH_ES	NH/ES (%)	6	54.195	9.790	18.065
HS_ES	HS/ES (%)	6	51.392	9.251	18.001
LE_VE	LE/VE (%)	6	93.147	1.386	1.488
NH_LE	NH/LE (%)	6	59.291	9.278	15.648
HS_NH	HS/NH (%)	6	94.825	1.704	1.797

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
15:32 Monday, December 18, 1995

LEVEL=TRT2

Variable	Label	N	Mean	Std Dev	CV
EL		6	218.833	50.161	22.922
EC		6	3.167	1.329	41.973
ES		6	201.500	47.090	23.370
VE		6	175.833	83.502	47.489
LE		6	167.833	79.116	47.140
NH		6	109.333	54.051	49.437
HS		6	104.667	51.891	49.577
THICK		6	0.352	0.011	3.133
HATWT		6	35.983	1.399	3.888
SURVWT		6	268.933	18.579	6.909
FOOD		6	190.350	27.224	14.302
PREM		6	1214.000	60.689	4.999
POSTM		6	1307.333	88.226	6.749
PREF		6	1123.167	34.008	3.028
POSTF		6	1224.667	50.051	4.087
ES_EL	ES/EL (%)	6	91.969	0.959	1.043
NH_EL	NH/EL (%)	6	46.219	22.138	47.899
ENC_EL	(EL-EC)/EL (%)	6	98.610	0.416	0.421
VE_ES	VE/ES (%)	6	80.594	36.416	45.185
NH_ES	NH/ES (%)	6	50.150	24.012	47.880
HS_ES	HS/ES (%)	6	47.986	22.864	47.648
LE_VE	LE/VE (%)	6	96.274	2.911	3.024
NH_LE	NH/LE (%)	6	63.963	9.432	14.746
HS_NH	HS/NH (%)	6	96.385	3.037	3.151

LEVEL=TRT3

Variable	Label	N	Mean	Std Dev	CV
EL		6	140.333	50.186	35.762
EC		6	1.333	1.211	90.830
ES		6	128.500	45.307	35.258
VE		6	107.833	30.623	28.398
LE		6	100.000	28.355	28.355
NH		6	58.667	24.039	40.975
HS		6	56.167	22.982	40.917
THICK		6	0.351	0.011	3.008
HATWT		6	35.367	1.419	4.013
SURVWT		6	257.483	13.314	5.171
FOOD		6	195.100	21.671	11.108
PREM		6	1199.833	43.673	3.640
POSTM		6	1277.667	68.389	5.353
PREF		6	1093.333	35.132	3.213
POSTF		6	1157.167	40.351	3.487
ES_EL	ES/EL (%)	6	91.688	1.940	2.115
NH_EL	NH/EL (%)	6	42.989	11.035	25.670
ENC_EL	(EL-EC)/EL (%)	6	99.015	0.848	0.857
VE_ES	VE/ES (%)	6	87.022	14.462	16.619
NH_ES	NH/ES (%)	6	46.936	12.185	25.962
HS_ES	HS/ES (%)	6	45.042	11.839	26.285
LE_VE	LE/VE (%)	6	92.863	3.286	3.538
NH_LE	NH/LE (%)	6	57.595	9.604	16.676
HS_NH	HS/NH (%)	6	96.016	3.264	3.399

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
1. ANALYSIS OF EGGS LAID

15:32 Monday, December 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
1. ANALYSIS OF EGGS LAID

15:32 Monday, December 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0
LEVEL	L2 L3 L4
CONTROL	-L2-L3-L4
TRT1	
TRT2	
TRT3	

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
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15:32 Monday, December 18, 1995

General Linear Models Procedure

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	49191.792	16397.264	5.81	0.0050
Error	20	56410.167	2820.508		
Corrected Total	23	105601.958			

R-Square 0.465823
 C.V. 25.07580
 Root MSE 53.108
 EL Mean 211.79

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	49191.792	16397.264	5.81	0.0050

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK

1. ANALYSIS OF EGGS LAID

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Least Squares Means

LEVEL	LSMEAN	EL	Pr > T	H0: LSMEAN(1)=LSMEAN(J)
CONTROL	222.000000	1	0.1667	0.9188 0.0149
TRT1	266.000000	2	0.1667	0.1397 0.0006
TRT2	218.333333	3	0.9188	0.1397 0.0187
TRT3	140.333333	4	0.0149	0.0006 0.0187

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK

1. ANALYSIS OF EGGS LAID

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: EL

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 2820.508
 Critical Value of Studentized Range= 3.958
 Minimum Significant Difference= 85.822

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1 - CONTROL	-41.82	44.00	129.82
TRT1 - TRT2	-38.65	47.17	132.99
TRT1 - TRT3	39.85	125.67	211.49

CONTROL - TRT1	-129.82	-44.00	41.82
CONTROL - TRT2	-82.65	3.17	88.99
CONTROL - TRT3	-4.15	81.67	167.49
TRT2 - TRT1	-132.99	-47.17	38.65
TRT2 - CONTROL	-88.99	-3.17	82.65
TRT2 - TRT3	-7.32	78.50	164.32
TRT3 - TRT1	-211.49	-125.67	-39.85
TRT3 - CONTROL	-167.49	-81.67	4.15
TRT3 - TRT2	-164.32	-78.50	7.32

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 1. ANALYSIS OF EGGS LAID

 15:32 Monday, December 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 2820.508
 Critical Value of Dunnett's T= 2.192
 Minimum Significant Difference= 67.221

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1 - CONTROL	-23.22	44.00	111.22
TRT2 - CONTROL	-70.39	-3.17	64.05
TRT3 - CONTROL	-148.89	-81.67	-14.45

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK

2. ANALYSIS OF EGGS CRACKED

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK

2. ANALYSIS OF EGGS CRACKED

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0

13

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 2. ANALYSIS OF EGGS CRACKED

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	31.458333	10.486111	2.07	0.1369
Error	20	101.500000	5.075000		
Corrected Total	23	132.958333			

R-Square	C.V.	Root MSE	EC Mean
0.236603	83.17942	2.2528	2.7083

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	31.458333	10.486111	2.07	0.1369

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 2. ANALYSIS OF EGGS CRACKED

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Least Squares Means

LEVEL	LSMEAN	EC	Pr > T	H0: LSMEAN(I)=LSMEAN(J)
CONTROL	2.0000000	1	0.0879	0.3804 0.6139
TRT1	4.3333333	2	0.0879	0.3804 0.0319
TRT2	3.1666667	3	0.3804	0.3804 0.1740
TRT3	1.3333333	4	0.6139	0.0319 0.1740

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 2. ANALYSIS OF EGGS CRACKED

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: EC

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 5.075
 Critical Value of Studentized Range= 3.958
 Minimum Significant Difference= 3.6404

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT1 - TRT2	-2.474	1.167	4.807
TRT1 - CONTROL	-1.307	2.333	5.974
TRT1 - TRT3	-0.640	3.000	6.640
TRT2 - TRT1	-4.807	-1.167	2.474
TRT2 - CONTROL	-2.474	1.167	4.807
TRT2 - TRT3	-1.807	1.833	5.474
CONTROL - TRT1	-5.974	-2.333	1.307
CONTROL - TRT2	-4.807	-1.167	2.474
CONTROL - TRT3	-2.974	0.667	4.307
TRT3 - TRT1	-6.640	-3.000	0.640
TRT3 - TRT2	-5.474	-1.833	1.807
TRT3 - CONTROL	-4.307	-0.667	2.974

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 2. ANALYSIS OF EGGS CRACKED

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dunnnett's One-tailed T tests for variable: EC

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

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 5.075
 Critical Value of Dunnnett's T= 2.192
 Minimum Significant Difference= 2.8514

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT1 - CONTROL	-0.518	2.333	5.185
TRT2 - CONTROL	-1.685	1.167	4.018
TRT3 - CONTROL	-3.518	-0.667	2.185

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 3. ANALYSIS OF EGGS SET

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 3. ANALYSIS OF EGGS SET

General Linear Models Procedure
 Type I Estimable Functions for: LEVEL

Coefficients

Effect	INTERCEPT	0
LEVEL	CONTROL	L2
	TRT1	L3
	TRT2	L4
	TRT3	-L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 3. ANALYSIS OF EGGS SET

15:32 Monday, December 18, 1995
 General Linear Models Procedure

Dependent Variable: ES

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	40772.500	13590.833	5.57	0.0061
Error	20	48823.333	2441.167		
Corrected Total	23	89595.833			

R-Square 0.455071 C.V. 25.45719 Root MSE 49.408 ES Mean 194.08

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 3. ANALYSIS OF EGGS SET

15:32 Monday, December 18, 1995
 General Linear Models Procedure
 Least Squares Means

LEVEL	ES	LSMEAN	Pr > T	HO: LSMEAN(1)=LSMEAN(J)
CONTROL	203.833333	1	0.1904	0.9356 0.0157
TRT1	242.500000	2	0.1904	0.1661 0.0007
TRT2	201.500000	3	0.9356	0.1661 0.0187
TRT3	128.500000	4	0.0157	0.0007 0.0187

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 3. ANALYSIS OF EGGS SET

15:32 Monday, December 18, 1995
 General Linear Models Procedure

NOTE: This test controls the type I experimentwise error rate.
 Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 2441.167
 Critical Value of Studentized Range= 3.958
 Minimum Significant Difference= 79.842

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT1 - CONTROL	-41.18	38.67	118.51
TRT1 - TRT2	-38.84	41.00	120.84
TRT1 - TRT3	34.16	114.00	193.84
CONTROL - TRT1	-118.51	-38.67	41.18
CONTROL - TRT2	-77.51	2.33	82.18
CONTROL - TRT3	-4.51	75.33	155.18
TRT2 - TRT1	-120.84	-41.00	38.84
TRT2 - CONTROL	-82.18	-2.33	77.51
TRT2 - TRT3	-6.84	73.00	152.84
TRT3 - TRT1	-193.84	-114.00	-34.16
TRT3 - CONTROL	-155.18	-75.33	4.51
TRT3 - TRT2	-152.84	-73.00	6.84

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 3. ANALYSIS OF EGGS SET

15:32 Monday, December 18, 1995
 General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 2441.167
 Critical Value of Dunnett's T= 2.192
 Minimum Significant Difference= 62.537

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT1 - CONTROL	-23.87	38.67	101.20
TRT2 - CONTROL	-64.87	-2.33	60.20
TRT3 - CONTROL	-137.87	-75.33	-12.80

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 4. ANALYSIS OF VIABLE EMBRYOS

15:32 Monday, December 18, 1995
 General Linear Models Procedure
 Class Level Information

General Linear Models Procedure
 Class Level Information

15

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 4. ANALYSIS OF VIABLE EMBRYOS

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Type I Estimable Functions for: LEVEL

Effect

INTERCEPT	LEVEL	COEFFICIENTS
0	L2	
	L3	
	L4	
	-L2-L3-L4	

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 4. ANALYSIS OF VIABLE EMBRYOS

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dependent Variable: VE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	52747.333	17582.444	5.18	0.0082
Error	20	67832.000	3391.600		
Corrected Total	23	120579.333			

R-Square C.V. Root MSE VE Mean

0.437449	32.47441	58.237	179.33
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Source LEVEL

DF	Type I SS	Mean Square	F Value	Pr > F
3	52747.333	17582.444	5.18	0.0082

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 4. ANALYSIS OF VIABLE EMBRYOS

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Least Squares Means

LEVEL	VE	LSMEAN	Pr > T	HO: LSMEAN(I)=LSMEAN(J)
CONTROL	196.16667	1	0.2332	0.5522 0.0161
TRT1	237.50000	2	0.2332	0.0816 0.0010
TRT2	175.83333	3	0.5522	0.0816 0.0567
TRT3	107.83333	4	0.0161	0.0010 0.0567

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 4. ANALYSIS OF VIABLE EMBRYOS

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: VE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 3391.6
 Critical Value of Studentized Range= 3.958
 Minimum Significant Difference= 94.11

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT1 - CONTROL	-52.78	41.33	135.44
TRT1 - TRT2	-32.44	61.67	155.78
TRT1 - TRT3	35.56	129.67	223.78
CONTROL - TRT1	-135.44	-41.33	52.78
CONTROL - TRT2	-73.78	20.33	114.44
CONTROL - TRT3	-5.78	88.33	182.44
TRT2 - TRT1	-155.78	-61.67	32.44
TRT2 - CONTROL	-114.44	-20.33	73.78
TRT2 - TRT3	-26.11	68.00	162.11
TRT3 - TRT1	-223.78	-129.67	-35.56
TRT3 - CONTROL	-182.44	-88.33	5.78
TRT3 - TRT2	-162.11	-68.00	26.11

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 4. ANALYSIS OF VIABLE EMBRYOS

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dunnnett's One-tailed T tests for variable: VE

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

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 3391.6
 Critical Value of Dunnnett's T= 2.192
 Minimum Significant Difference= 73.713

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT1 - CONTROL	-32.38	41.33	115.05
TRT2 - CONTROL	-94.05	-20.33	53.38
TRT3 - CONTROL	-162.05	-88.33	-14.62

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

15:32 Monday, December 18, 1995

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

15:32 Monday, December 18, 1995

General Linear Models Procedure
 Type I Estimable Functions for: LEVEL

Effect Coefficients

Effect	INTERCEPT	0
LEVEL	CONTROL	L2
	TRT1	L3
	TRT2	L4
	TRT3	-L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

15:32 Monday, December 18, 1995

General Linear Models Procedure

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	46054.333	15351.444	5.06	0.0091
Error	20	60729.667	3036.483		
Corrected Total	23	106784.000			

R-Square	C.V.	Root MSE	LE Mean
0.431285	32.80018	55.104	168.00

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	46054.333	15351.444	5.06	0.0091

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

15:32 Monday, December 18, 1995

General Linear Models Procedure

LEVEL	LE	Pr > T	HO: LSMEAN(I)=LSMEAN(J)
	LSMEAN	I/J	1 2 3 4
CONTROL	183.000000	1	0.2443 0.6387 0.0168
TRT1	221.166667	2	0.2443 0.1092 0.0011
TRT2	167.833333	3	0.6387 0.1092 0.0456
TRT3	100.000000	4	0.0168 0.0011 0.0456

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (MSD) Test for variable: LE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 3036.483
 Critical Value of Studentized Range= 3.958
 Minimum Significant Difference= 89.047

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

LEVEL Comparison	Simultaneous Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit	
	Lower Limit	Upper Limit		Lower Limit	Upper Limit
CONTROL - CONTROL	-50.88	50.88	38.17	127.21	
CONTROL - TRT1	-35.71	35.71	53.33	142.38	
CONTROL - TRT2	32.12	32.12	121.17	210.21	***
CONTROL - TRT3	-127.21	127.21	-38.17	50.88	
TRT1 - TRT1	-73.88	73.88	15.17	104.21	
TRT1 - TRT2	-6.05	6.05	83.00	172.05	
TRT1 - TRT3	-142.38	142.38	-53.33	35.71	
TRT2 - CONTROL	-104.21	104.21	-15.17	73.88	
TRT2 - TRT1	-21.21	21.21	67.83	156.88	
TRT2 - TRT2	-210.21	210.21	-121.17	-32.12	***
TRT2 - TRT3	-172.05	172.05	-83.00	6.05	
TRT3 - CONTROL	-156.88	156.88	-67.83	21.21	
TRT3 - TRT1					
TRT3 - TRT2					

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

15:32 Monday, December 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 3036.483
 Critical Value of Dunnett's T= 2.192
 Minimum Significant Difference= 69.747

LEVEL Comparison	Simultaneous		Difference Between Means	Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit		Lower Confidence Limit	Upper Confidence Limit
TRT1 - CONTROL	-31.58	107.91	38.17	107.91	
TRT2 - CONTROL	-84.91	54.58	-15.17	54.58	
TRT3 - CONTROL	-152.75	-13.25	-83.00	-13.25	****

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 6. ANALYSIS OF NORMAL MATCHINGS

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 6. ANALYSIS OF NORMAL MATCHINGS

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0
LEVEL	L2
	L3
	L4
	-L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 6. ANALYSIS OF NORMAL MATCHINGS

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dependent Variable: MH	DF	Sum of Squares	Mean Square	F Value	Pr > F
Source	3	17456.667	5818.889	3.76	0.0273
Model	20	30961.333	1548.067		
Error	23	48418.000			
Corrected Total					

R-Square	C.V.	Root MSE	NH Mean
0.360541	38.38583	39.345	102.50

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ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 6. ANALYSIS OF NORMAL MATCHINGS

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Least Squares Means

LEVEL	MH	Pr > T	H0: LSMEAN(i)=LSMEAN(j)
CONTROL	109.666667	1	0.3303 0.9884 0.0362
TRT1	122.333333	2	0.3303 0.5234 0.0041
TRT2	109.333333	3	0.9884 0.3234 0.0373
TRT3	58.666667	4	0.0362 0.0041 0.0373

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 6. ANALYSIS OF NORMAL MATCHINGS

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: MH

NOTE: This test controls the type I experimentwise error rate.
 Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 1548.067
 Critical Value of Studentized Range= 3.958
 Minimum Significant Difference= 63.581

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

LEVEL Comparison	Simultaneous		Difference Between Means	Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit		Lower Confidence Limit	Upper Confidence Limit
TRT1 - CONTROL	-40.91	86.25	22.67	86.25	
TRT2 - CONTROL	-40.58	86.58	23.00	86.58	
TRT3 - CONTROL	10.09	137.25	73.67	137.25	****
CONTROL - TRT1	-86.25	40.91	-22.67	40.91	
CONTROL - TRT2	-63.25	63.91	0.33	63.91	
CONTROL - TRT3	-12.58	114.58	51.00	114.58	
TRT2 - TRT1	-86.58	40.58	-23.00	40.58	
TRT2 - CONTROL	-63.91	63.25	-0.33	63.25	
TRT3 - CONTROL	-12.91	114.25	50.67	114.25	
TRT3 - TRT1	-137.25	-10.09	-73.67	-10.09	****
TRT3 - TRT2	-114.58	12.58	-51.00	12.58	
TRT3 - TRT3	-114.25	-50.67	-50.67	-50.67	

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 6. ANALYSIS OF NORMAL MATCHINGS

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dunnnett's One-tailed T tests for variable: MH

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

Alpha= 0.05 Confidences= 0.95 df= 20 MSE= 1548.067
Critical Value of Dunnnett's t= 2.192
Minimum Significant Differences= 49.801

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

LEVEL Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1 - CONTROL	-27.13	22.67	72.47
TRT2 - CONTROL	-50.13	-0.33	49.47
TRT3 - CONTROL	-100.80	-51.00	-1.20

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
7. ANALYSIS OF 14-DAY-OLD SURVIVORS

15:32 Monday, December 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
7. ANALYSIS OF 14-DAY-OLD SURVIVORS

15:32 Monday, December 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Effect Coefficients

Effect	INTERCEPT	0
LEVEL	CONTROL	L2
	TRT1	L3
	TRT2	L4
	TRT3	-L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
7. ANALYSIS OF 14-DAY-OLD SURVIVORS

15:32 Monday, December 18, 1995

General Linear Models Procedure

Dependent Variable: HS	DF	Sum of Squares	Mean Square	F Value	Pr > F
Source	3	15467.500	5155.833	3.52	0.0338
Model	20	29275.000	1463.750		
Error					

Corrected Total 23 44742.500

R-Square 0.345700 C.V. 39.34086 Root MSE 38.259 HS Mean 97.250

Source DF Type I SS Mean Square F Value Pr > F
LEVEL 3 15467.500 5155.833 3.52 0.0338

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
7. ANALYSIS OF 14-DAY-OLD SURVIVORS

15:32 Monday, December 18, 1995

General Linear Models Procedure
Least Squares Means

LEVEL	LSMEAN	HS	Pr > T	H0: LSMEAN(1)=LSMEAN(J)
CONTROL	102.500000	1	0.3068	0.9228 0.0489
TRT1	125.666667	2	0.3068	0.3531 0.0051
TRT2	104.666667	3	0.9228	0.3531 0.0401
TRT3	56.166667	4	0.0489	0.0051 0.0401

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
7. ANALYSIS OF 14-DAY-OLD SURVIVORS

15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: HS

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidences= 0.95 df= 20 MSE= 1463.75
Critical Value of Studentized Ranges= 3.958
Minimum Significant Differences= 61.825

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

LEVEL Comparison	Simultaneous		Difference Between Means	Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit		Lower Confidence Limit	Upper Confidence Limit
TRT1 - TRT2	-40.83	21.00	21.00	82.83	
TRT1 - CONTROL	-38.66	23.17	23.17	84.99	
TRT1 - TRT3	7.67	69.50	69.50	131.33	***
TRT2 - TRT1	-82.83	-21.00	-21.00	40.83	
TRT2 - CONTROL	-59.66	2.17	2.17	63.99	
TRT2 - TRT3	-13.33	48.50	48.50	110.33	
CONTROL - TRT1	-84.99	-23.17	-23.17	38.66	
CONTROL - TRT2	-63.99	-2.17	-2.17	59.66	
CONTROL - TRT3	-15.49	46.33	46.33	108.16	
TRT3 - TRT1	-131.33	-69.50	-69.50	-7.67	***

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 7. ANALYSIS OF 14-DAY-OLD SURVIVORS

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Dunnett's One-tailed T tests for variable: HS

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.
 Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 1463.75
 Critical Value of Dunnett's T= 2.192
 Minimum Significant Difference= 48.425
 Comparisons significant at the 0.05 level are indicated by ****.

LEVEL	Comparison	Simultaneous		Difference Between Means	Simultaneous	
		Lower Confidence Limit	Upper Confidence Limit		Lower Confidence Limit	Upper Confidence Limit
TRT1	- CONTROL	-25.26	23.17	23.17	71.59	
TRT2	- CONTROL	-46.26	2.17	2.17	50.59	
TRT3	- CONTROL	-94.76	-46.33	-46.33	2.09	

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 8. ANALYSIS OF EGGS SET/EGGS LAID

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 8. ANALYSIS OF EGGS SET/EGGS LAID

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0
LEVEL	L2 L3 L4 -L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 8. ANALYSIS OF EGGS SET/EGGS LAID

 15:32 Monday, December 18, 1995

20

Dependent Variable: RESPONSE
 Weight: EL

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	605.34655	201.78218	0.36	0.7851
Error	20	11324.89344	566.24467		
Corrected Total	23	11930.23999			

R-Square 0.050741
 C.V. 32.49702
 Root MSE 23.796
 RESPONSE Mean 73.225

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	605.34655	201.78218	0.36	0.7851

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 8. ANALYSIS OF EGGS SET/EGGS LAID

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Least Squares Means

LEVEL	RESPONSE	Pr > T	H0: LSMEAN(1)=LSMEAN(J)
	LSMEAN	i/j	2 3 4
CONTROL	73.3877007	1	0.4902 0.7825 0.8430
TRT1	72.7670001	2	0.4902 0.3330 0.6898
TRT2	73.6466163	3	0.7825 0.3330 0.6600
TRT3	75.1774447	4	0.8430 0.6898 0.6600

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 8. ANALYSIS OF EGGS SET/EGGS LAID

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.
 Alpha= 0.05 Confidences 0.95 df= 20 MSE= 566.2447
 Critical Value of Studentized Range= 3.958
 Minimum Significant Difference= 38.453

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

LEVEL	Comparison	Simultaneous		Difference Between Means	Simultaneous	
		Lower Confidence Limit	Upper Confidence Limit		Lower Confidence Limit	Upper Confidence Limit
TRT2	- CONTROL	-38.1945	0.2589	0.2589	38.7123	
TRT3	- TRT3	-37.9842	0.4692	0.4692	38.9226	

TRT2	- TRT1	0.8796	39.3330
CONTROL	- TRT2	-0.2589	38.1945
CONTROL	- TRT3	-0.2103	38.6636
CONTROL	- TRT1	0.6207	39.0741
TRT3	- TRT2	-0.4692	37.9842
TRT3	- CONTROL	-0.2103	38.2431
TRT3	- TRT1	0.4104	38.8638
TRT1	- TRT2	-0.8796	37.5738
TRT1	- CONTROL	-0.6207	37.8327
TRT1	- TRT3	-0.4104	38.0429

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 8. ANALYSIS OF EGGS SET/EGGS LAID

 15:32 Monday, December 18, 1995

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= 20 MSE= 566.2447
 Critical Value of Dunnett's T= 2.192
 Minimum Significant Difference= 30.119

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

LEVEL Comparison	Simultaneous		Upper Confidence Limit
	Lower Confidence Limit	Difference Between Means	
- CONTROL	-29.8401	0.2589	30.3780
- CONTROL	-30.3293	-0.2103	29.9088
- CONTROL	-30.7398	-0.6207	29.4984

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Class Level Information

LEVEL	4	CONTROL TRT1 TRT2 TRT3
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Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Effect Coefficients

LEVEL CONTROL	L2				
TRT1	L3				
TRT2	L4				
TRT3	-L2-L3-L4				

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	124950.29	41650.10	1.54	0.2362
Error	20	542583.82	27129.19		
Corrected Total	23	667534.11			

R-Square 0.187182
 C.V. 215.0586
 Root MSE 164.71
 RESPONSE Mean 76.588

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	124950.29	41650.10	1.54	0.2362

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Least Squares Means

LEVEL	RESPONSE	Pr > T , H0: LSMEAN(i)=LSMEAN(j)			
		1/1	2	3	4
CONTROL	79.2230641	1	0.6458	0.2991	0.1858
TRT1	82.2043767	2	0.6458	0.1307	0.0836
TRT2	72.1021939	3	0.2991	0.1307	0.6724
TRT3	68.8441938	4	0.1858	0.0836	0.6724

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.
 Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 27129.19
 Critical Value of Studentized Range= 3.958

21

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

LEVEL Comparison	Simultaneous		Difference Between Means	Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit		Lower Confidence Limit	Upper Confidence Limit
TRT1 - CONTROL	-263.18	269.15	2.98	269.15	269.15
TRT1 - TRT2	-256.06	276.27	10.10	276.27	279.53
TRT1 - TRT3	-252.80	279.53	13.36	279.53	279.53
CONTROL - TRT1	-269.15	263.18	-2.98	263.18	263.18
CONTROL - TRT2	-259.04	273.29	7.12	273.29	273.29
CONTROL - TRT3	-255.79	276.54	10.38	276.54	276.54
TRT2 - TRT1	-276.27	256.06	-10.10	256.06	256.06
TRT2 - CONTROL	-273.29	259.04	-7.12	259.04	259.04
TRT2 - TRT3	-262.91	269.42	3.26	269.42	269.42
TRT3 - TRT1	-279.53	252.80	-13.36	252.80	252.80
TRT3 - CONTROL	-276.54	255.79	-10.38	255.79	255.79
TRT3 - TRT2	-269.42	262.91	-3.26	262.91	262.91

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

 15:32 Monday, December 18, 1995

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= 20 MSE= 27129.19
 Critical Value of Dunnett's T= 2.192
 Minimum Significant Differences= 208.48

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

LEVEL Comparison	Simultaneous		Difference Between Means	Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit		Lower Confidence Limit	Upper Confidence Limit
TRT1 - CONTROL	-205.50	211.46	2.98	211.46	211.46
TRT2 - CONTROL	-215.60	201.36	-7.12	201.36	201.36
TRT3 - CONTROL	-218.86	198.10	-10.38	198.10	198.10

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

22

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT	0
LEVEL	
CONTROL	L2
TRT1	L3
TRT2	L4
TRT3	-L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dependent Variable: RESPONSE

Weight: VE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	7635.0930	2545.0310	1.23	0.3249
Error	20	41381.9919	2069.0996		
Corrected Total	23	49017.0850			

R-Square	C.V.	Root MSE	RESPONSE Mean
0.155764	60.03023	45.487	75.774

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	7635.0930	2545.0310	1.23	0.3249

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Least Squares Means

LEVEL	RESPONSE	Pr > T	HO: LSMEAN(i)=LSMEAN(j)
	LSMEAN	i/j	1 2 3 4
CONTROL	75.4336434	1	0.7415 0.1877 0.7548
TRT1	74.8344001	2	0.7415 0.0958 0.9614
TRT2	78.0642433	3	0.1877 0.0958 0.1575
TRT3	74.7286698	4	0.7548 0.9614 0.1575

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS

15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 2069.1
Critical Value of Studentized Range= 3.956
Minimum Significant Difference= 73.506

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT2 - CONTROL	-70.875	2.631	76.137
TRT2 - TRT1	-70.276	3.230	76.736
TRT2 - TRT3	-70.171	3.336	76.842
CONTROL - TRT2	-76.137	-2.631	70.875
CONTROL - TRT1	-72.907	0.599	74.105
CONTROL - TRT3	-72.801	0.705	74.211
TRT1 - TRT2	-76.736	-3.230	70.276
TRT1 - CONTROL	-74.105	-0.599	72.907
TRT1 - TRT3	-73.400	0.106	73.612
TRT3 - TRT2	-76.842	-3.336	70.171
TRT3 - CONTROL	-74.211	-0.705	72.801
TRT3 - TRT1	-73.612	-0.106	73.400

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIALE EMBRYOS

15:32 Monday, December 18, 1995

General Linear Models Procedure

Dunnnett'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= 20 MSE= 2069.1
Critical Value of Dunnnett's T= 2.192
Minimum Significant Difference= 57.574

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT2 - CONTROL	-54.944	2.631	60.205
TRT1 - CONTROL	-58.174	-0.599	56.975
TRT3 - CONTROL	-58.279	-0.705	56.870

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

15:32 Monday, December 18, 1995

23

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

15:32 Monday, December 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0
LEVEL	CONTROL L2 TRT1 L3 TRT2 L4 TRT3 -L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

15:32 Monday, December 18, 1995

General Linear Models Procedure

Dependent Variable: RESPONSE

Weight: LE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	8789.8000	2929.9333	0.71	0.5563
Error	20	82311.4269	4115.5713		
Corrected Total	23	91101.2269			

R-Square	C.V.	Root MSE	RESPONSE Mean
0.096484	124.7240	64.153	51.436

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	8789.8000	2929.9333	0.71	0.5563

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

15:32 Monday, December 18, 1995

General Linear Models Procedure
Least Squares Means

LEVEL	RESPONSE	Pr > T	HO: LSMEAN(i)=LSMEAN(j)
	LSMEAN	1/1	2 3

File:B:\43678113.out Page 27
 CONTROL 50.7314149
 TRT1 50.7329671
 TRT2 53.9610464
 TRT3 50.0405660

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 4115.571
 Critical Value of Studentized Range= 3.958
 Minimum Significant Difference= 103.67

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

LEVEL Comparison	Simultaneous Lower Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit	
	Lower Limit	Upper Limit		Lower Limit	Upper Limit
TRT2 - TRT1	-100.441	106.897	3.228	106.897	
TRT2 - CONTROL	-100.439	106.898	3.230	106.898	
TRT2 - TRT3	-99.748	107.589	3.920	107.589	
TRT1 - TRT2	-106.897	100.441	-3.228	100.441	
TRT1 - CONTROL	-103.667	103.670	0.002	103.670	
TRT1 - TRT3	-102.976	104.361	0.691	104.361	
CONTROL - TRT2	-106.898	100.439	-3.230	100.439	
CONTROL - TRT1	-103.670	103.667	-0.002	103.667	
CONTROL - TRT3	-102.978	104.360	0.691	104.360	
TRT3 - TRT2	-107.589	99.748	-3.920	99.748	
TRT3 - TRT1	-104.361	102.976	-0.692	102.976	
TRT3 - CONTROL	-104.360	102.978	-0.691	102.978	

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dunnnett'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= 20 MSE= 4115.571
 Critical Value of Dunnnett's T= 2.192
 Minimum Significant Difference= 81.2

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

LEVEL Comparison	Simultaneous Lower Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit	
	Lower Limit	Upper Limit		Lower Limit	Upper Limit
TRT2 - TRT1	-77.970	84.429	3.230	84.429	
TRT2 - CONTROL	-81.198	81.201	0.002	81.201	
TRT2 - TRT3	-81.891	80.509	-0.691	80.509	

File:B:\43678113.out Page 28

Comparison	Limit	Means	Limit
TRT2 - CONTROL	-77.970	3.230	84.429
TRT1 - CONTROL	-81.198	0.002	81.201
TRT3 - CONTROL	-81.891	-0.691	80.509

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK

12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK

12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0
LEVEL	
CONTROL	L2
TRT1	L3
TRT2	L4
TRT3	-L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK

12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	14377.544	4792.515	0.38	0.7703
Error	20	254035.344	12701.767		
Corrected Total	23	268412.888			

R-Square	C.V.	Root MSE	RESPONSE Mean
0.053565	256.9771	112.70	43.857

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	14377.544	4792.515	0.38	0.7703

25

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

15:32 Monday, December 18, 1995

General Linear Models Procedure
 Least Squares Means

LEVEL	RESPONSE	Pr > T	NO: LSMEAN(i)=LSMEAN(j)
LSMEAN	i/j	1	2 3 4
CONTROL	44.6361772	1	0.9624 0.9356 0.3728
TRT1	44.3360817	2	0.9624 0.8955 0.3369
TRT2	44.2773251	3	0.9356 0.8955 0.4125
TRT3	40.1123339	4	0.3728 0.3369 0.4125

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 12701.77
 Critical Value of Studentized Range= 3.958
 Minimum Significant Differences= 182.12

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

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1	- CONTROL	-181.923	0.200	182.323
TRT1	- TRT2	-181.564	0.559	182.682
TRT1	- TRT3	-177.599	4.724	186.847
CONTROL	- TRT1	-182.323	-0.200	181.923
CONTROL	- TRT2	-182.682	0.559	182.482
CONTROL	- TRT3	-177.599	4.524	186.647
TRT2	- TRT1	-182.682	-0.559	181.564
TRT2	- CONTROL	-182.482	-0.359	181.764
TRT2	- TRT3	-177.958	4.165	186.288
TRT3	- TRT1	-186.847	-4.724	177.399
TRT3	- CONTROL	-186.647	-4.524	177.599
TRT3	- TRT2	-186.288	-4.165	177.958

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

15:32 Monday, December 18, 1995

General Linear Models Procedure

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

NOTE: This test controls the type I experimentwise error for

comparisons of all treatments against a control.
 Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 12701.77
 Critical Value of Dunnnett's T= 2.192
 Minimum Significant Differences= 142.65

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

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1	- CONTROL	-142.450	0.200	142.850
TRT2	- CONTROL	-143.009	-0.359	142.291
TRT3	- CONTROL	-147.174	-4.524	138.126

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0
LEVEL	L2
	L3
	L4
	-L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	3856.7203	1285.5734	0.72	0.5541
Error	20	35921.0623	1796.0531		
Corrected Total	23	39777.7826			

25

Source	DF	Type I SS	Mean Square	F Value	Pr > F	RESPONSE Mean
LEVEL	3	3856.7203	1285.5734	0.72	0.5541	
						77.476

C.V. 54.70069
Root MSE 42.380

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

15:32 Monday, December 18, 1995

General Linear Models Procedure
Least Squares Means

LEVEL	RESPONSE	Pr > T	LSMEAN(i)	LSMEAN(j)	4
CONTROL	75.8043768	1	0.5573	0.2393	0.2401
TRT1	77.1377693	2	0.5573	0.5092	0.4578
TRT2	78.6407175	3	0.2393	0.5092	0.8457
TRT3	79.1926577	4	0.2401	0.4578	0.8457

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 1796.053
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 68.484

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

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT3	- TRT2	-67.933	0.552	69.036
TRT3	- TRT1	-66.430	2.055	70.539
TRT3	- CONTROL	-65.096	3.388	71.873
TRT2	- TRT3	-69.036	-0.552	67.933
TRT2	- TRT1	-66.982	1.503	69.987
TRT2	- CONTROL	-65.648	2.836	71.321
TRT1	- TRT3	-70.539	-2.055	66.430
TRT1	- TRT2	-69.987	-1.503	66.982
TRT1	- CONTROL	-67.151	1.333	69.818
CONTROL	- TRT3	-71.873	-3.388	65.096
CONTROL	- TRT2	-71.321	-2.836	65.648
CONTROL	- TRT1	-69.818	-1.333	67.151

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

15:32 Monday, December 18, 1995

General Linear Models Procedure

Dunnnett'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= 20 MSE= 1796.053
Critical Value of Dunnnett's T= 2.192
Minimum Significant Difference= 53.641

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

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT3	- CONTROL	-50.253	3.388	57.030
TRT2	- CONTROL	-50.805	2.836	56.478
TRT1	- CONTROL	-52.308	1.333	54.975

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

15:32 Monday, December 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

15:32 Monday, December 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0
LEVEL	L2 L3 L4 -L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

15:32 Monday, December 18, 1995

General Linear Models Procedure

26

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	3974.8402	1324.9467	0.72	0.5532
Error	20	36941.2070	1847.0604		
Corrected Total	23	40916.0473			

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	3974.8402	1324.9467	0.72	0.5532

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Least Squares Means

LEVEL	RESPONSE	Pr > T	HO: LSMEAN(i)=LSMEAN(j)
	LSMEAN	i/j	2 3 4
CONTROL	84.8789059	1	0.4356 0.3038 0.7700
TRT1	83.6100502	2	0.4356 0.7604 0.3295
TRT2	83.1149700	3	0.3038 0.7604 0.2347
TRT3	85.4397011	4	0.7700 0.3295 0.2347

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 1847.06
 Critical Value of Studentized Ranges= 3.958
 Minimum Significant Difference= 69.45

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

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT3	- CONTROL	-68.889	0.561	70.011
TRT3	- TRT1	-67.620	1.830	71.280
TRT3	- TRT2	-67.125	2.325	71.775
CONTROL	- TRT3	-70.011	-0.561	68.889

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	3974.8402	1324.9467	0.72	0.5532
Error	20	36941.2070	1847.0604		
Corrected Total	23	40916.0473			

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dunnnett'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= 20 MSE= 1847.06
 Critical Value of Dunnnett's T= 2.192
 Minimum Significant Difference= 54.398

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

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT3	- CONTROL	-53.837	0.561	54.958
TRT1	- CONTROL	-55.666	-1.269	53.129
TRT2	- CONTROL	-56.162	-1.764	52.634

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0
LEVEL	CONTROL L2

27

File:8:\43678113.out Page 35
 L3
 L4
 -L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dependent Variable: RESPONSE
 Weight: ES

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	15730.319	5243.440	0.40	0.7548
Error	20	262456.533	13122.827		
Corrected Total	23	278186.852			

R-Square	C.V.	Root MSE	RESPONSE Mean
0.056546	246.6735	114.55	46.440

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	15730.319	5243.440	0.40	0.7548

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Least Squares Means

LEVEL	RESPONSE	Pr > T	H0: LSMEAN(i)=LSMEAN(j)
	LSMEAN	1/j	3
CONTROL	47.1753662	1	0.9172 0.9436 0.3726
TRT1	47.6431590	2	0.9172 0.8593 0.3138
TRT2	46.8427380	3	0.9436 0.8593 0.4070
TRT3	42.3707833	4	0.3726 0.3138 0.4070

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 13122.83
 Critical Value of Studentized Range= 3.958
 Minimum Significant Difference= 185.12

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

28

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT1	- CONTROL	-184.649	0.468	185.585
TRT1	- TRT2	-184.317	0.800	185.917
TRT1	- TRT3	-179.845	5.272	190.389

CONTROL	- TRT1	-185.585	-0.468	184.649
CONTROL	- TRT2	-184.784	0.333	185.450
CONTROL	- TRT3	-180.312	4.805	189.922
TRT2	- TRT1	-185.917	-0.800	184.317
TRT2	- CONTROL	-185.450	-0.333	184.784
TRT2	- TRT3	-180.645	4.472	189.589
TRT3	- TRT1	-190.389	-5.272	179.845
TRT3	- CONTROL	-189.922	-4.805	180.312
TRT3	- TRT2	-189.589	-4.472	180.645

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dunnnett'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= 20 MSE= 13122.83
 Critical Value of Dunnnett's T= 2.192
 Minimum Significant Difference= 145

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

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT1	- CONTROL	-144.527	0.468	145.463
TRT2	- CONTROL	-145.328	-0.333	144.662
TRT3	- CONTROL	-149.800	-4.805	140.190

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

15:32 Monday, December 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT	0
LEVEL	
CONTROL	L2
TRT1	L3
TRT2	L4
TRT3	-L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

15:32 Monday, December 18, 1995

General Linear Models Procedure

Dependent Variable: RESPONSE

Weight:	ES				
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	12690.624	4230.208	0.34	0.7946
Error	20	246721.812	12336.091		
Corrected Total	23	259412.435			

R-Square	C.V.	Root MSE	RESPONSE Mean
0.048921	247.5883	111.07	44.860

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	12690.624	4230.208	0.34	0.7946

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

15:32 Monday, December 18, 1995

General Linear Models Procedure
Least Squares Means

LEVEL	RESPONSE	Pr > t	H0: LSMEAN(i)=LSMEAN(j)
	LSMEAN	1/j	2 3 4
CONTROL	45.1450038	1	0.8383 0.9435 0.4529
TRT1	46.0356503	2	0.8383 0.8969 0.3435
TRT2	45.4684356	3	0.9435 0.8969 0.4180
TRT3	41.2347761	4	0.4529 0.3435 0.4180

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

15:32 Monday, December 18, 1995

29

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 12336.09
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 179.48

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

	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
LEVEL Comparison			
TRT1 - TRT2	-178.915	0.567	180.049
TRT1 - CONTROL	-178.592	0.891	180.373
TRT1 - TRT3	-174.681	4.801	184.283
TRT2 - TRT1	-180.049	-0.567	178.915
TRT2 - CONTROL	-179.159	0.323	179.806
TRT2 - TRT3	-175.249	4.234	183.716
CONTROL - TRT1	-180.373	-0.891	178.592
CONTROL - TRT2	-179.806	-0.323	179.159
CONTROL - TRT3	-175.572	3.910	183.392
TRT3 - TRT1	-184.283	-4.801	174.681
TRT3 - TRT2	-183.716	-4.234	175.249
TRT3 - CONTROL	-183.392	-3.910	175.572

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

15:32 Monday, December 18, 1995

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= 20 MSE= 12336.09
Critical Value of Dunnett's T= 2.192
Minimum Significant Difference= 140.58

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

	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
LEVEL Comparison			
TRT1 - CONTROL	-139.691	0.891	141.672
TRT2 - CONTROL	-140.258	0.323	140.905
TRT3 - CONTROL	-144.492	-3.910	136.671

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
17. ANALYSIS OF EGGSHELL THICKNESS

15:32 Monday, December 18, 1995

General Linear Models Procedure
Class Level Information

Class Levels Values
 LEVEL 4 CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 17. ANALYSIS OF EGGSHELL THICKNESS

15:32 Monday, December 18, 1995

General Linear Models Procedure
 Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

LEVEL CONTROL L2
 TRT1 L3
 TRT2 L4
 TRT3 -L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 17. ANALYSIS OF EGGSHELL THICKNESS

15:32 Monday, December 18, 1995

General Linear Models Procedure

Dependent Variable: THICK

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	0.0000152	0.0000051	0.03	0.9925
Error	20	0.0032953	0.0001648		
Corrected Total	23	0.0033105			

R-Square C.V. Root MSE THICK Mean
 0.004581 3.654419 0.0128 0.3513

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	0.0000152	0.0000051	0.03	0.9925

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 17. ANALYSIS OF EGGSHELL THICKNESS

15:32 Monday, December 18, 1995

General Linear Models Procedure
 Least Squares Means

LEVEL	THICK LSMEAN	Pr > T	H0: LSMEAN(i)=LSMEAN(j)
CONTROL	0.35183333	1	0.8243 0.9646 0.8940
TRT1	0.35016667	2	0.8243 0.7900 0.9292
TRT2	0.35216667	3	0.9646 0.7900 0.8590
TRT3	0.35083333	4	0.8940 0.9292 0.8590

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 17. ANALYSIS OF EGGSHELL THICKNESS

15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: THICK

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 0.000165
 Critical Value of Studentized Range= 3.958
 Minimum Significant Difference= 0.0207

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT2 - CONTROL	-0.020409	0.000333	0.021076
TRT2 - TRT1	-0.019409	0.001333	0.022076
TRT2 - TRT3	-0.018743	0.002000	0.022743
CONTROL - TRT2	-0.021076	-0.000333	0.020409
CONTROL - TRT3	-0.019743	0.001000	0.021743
CONTROL - TRT1	-0.019076	0.001667	0.022409
TRT3 - TRT2	-0.022076	-0.001333	0.019409
TRT3 - CONTROL	-0.021743	-0.001000	0.019743
TRT3 - TRT1	-0.020076	0.000667	0.021409
TRT1 - TRT2	-0.022743	-0.002000	0.018743
TRT1 - CONTROL	-0.022409	-0.001667	0.019076
TRT1 - TRT3	-0.021409	-0.000667	0.020076

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 17. ANALYSIS OF EGGSHELL THICKNESS

15:32 Monday, December 18, 1995

General Linear Models Procedure

Dunnnett's One-tailed T tests for variable: THICK

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

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 0.000165
 Critical Value of Dunnnett's T= 2.192
 Minimum Significant Difference= 0.0162

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT2 - CONTROL	-0.015914	0.000333	0.016580
TRT3 - CONTROL	-0.017247	-0.001000	0.015247

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 18. ANALYSIS OF HATCHLING WEIGHT

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 18. ANALYSIS OF HATCHLING WEIGHT

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Type I Estimable Functions for: LEVEL

Effect	Coefficients
INTERCEPT	0
LEVEL	L2 L3 L4 -L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 18. ANALYSIS OF HATCHLING WEIGHT

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dependent Variable: HATWT	DF	Sum of Squares	Mean Square	F Value	Pr > F
Source	3	2.8150000	0.9383333	0.58	0.6348
Model	20	32.3433333	1.6171667		
Error	23	35.1583333			
Corrected Total					

R-Square C.V. Root MSE HATWT Mean
 0.080066 3.588089 1.2717 35.442

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	2.8150000	0.9383333	0.58	0.6348

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 18. ANALYSIS OF HATCHLING WEIGHT

 15:32 Monday, December 18, 1995

LEVEL	HATWT	Pr > T	HO: LSMEAN(I)=LSMEAN(J)
	LSMEAN	1/j	2 3 4
CONTROL	35.0333333	1	0.6387 0.2104 0.6547
TRT1	35.5833333	2	0.6387 0.4234 0.9821
TRT2	35.9833333	3	0.2104 0.4234 0.4109
TRT3	35.3666667	4	0.6547 0.9821 0.4109

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 18. ANALYSIS OF HATCHLING WEIGHT

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: HATWT

NOTE: This test controls the type I experimentwise error rate.
 Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 1.617167
 Critical Value of Studentized Range= 3.958
 Minimum Significant Difference= 2.055

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT2 - TRT1	-1.4550	0.6000	2.6550
TRT2 - TRT3	-1.4383	0.6167	2.6717
TRT2 - CONTROL	-1.1050	0.9500	3.0050
TRT1 - TRT2	-2.6550	-0.6000	1.4550
TRT1 - TRT3	-2.0383	0.0167	2.0717
TRT1 - CONTROL	-1.7050	0.3500	2.4050
TRT3 - TRT2	-2.6717	-0.6167	1.4383
TRT3 - TRT1	-2.0717	-0.0167	2.0383
TRT3 - CONTROL	-1.7217	0.3333	2.3883
CONTROL - TRT2	-3.0050	-0.9500	1.1050
CONTROL - TRT1	-2.4050	-0.3500	1.7050
CONTROL - TRT3	-2.3883	-0.3333	1.7217

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 18. ANALYSIS OF HATCHLING WEIGHT

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dunnnett's One-tailed T tests for variable: HATWT

NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.
 Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 1.617167
 Critical Value of Dunnnett's T= 2.192
 Minimum Significant Difference= 1.6096

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

LEVEL Comparison	Simultaneous		Difference Between Means	Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit		Lower Confidence Limit	Upper Confidence Limit
TRT2 - CONTROL	-0.6596	0.9500	0.9500	2.5596	
TRT1 - CONTROL	-1.2596	0.3500	0.3500	1.9596	
TRT3 - CONTROL	-1.2763	0.3333	0.3333	1.9429	

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

15:32 Monday, December 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

15:32 Monday, December 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT	0
LEVEL	
CONTROL	L2
TRT1	L3
TRT2	L4
TRT3	-L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

15:32 Monday, December 18, 1995

General Linear Models Procedure

Dependent Variable: SURVWT	DF	Sum of Squares	Mean Square	F Value	Pr > F
Source	3	536.84792	178.94931	1.00	0.4131
Model	20	3577.97167	178.89858		
Error	23	4114.81958			
Corrected Total					
R-Square		C.V.	Root MSE		SURVWT Mean
0.130467		5.128975	13.375		260.78
DF	Type I SS	Mean Square	F Value		Pr > F

32

LEVEL 3 536.84792 178.94931 1.00 0.4131

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

15:32 Monday, December 18, 1995

General Linear Models Procedure
Least Squares Means

LEVEL	SURVWT	Pr > T	H0: LSMEAN(i)=LSMEAN(j)
	LSMEAN	1/j	2 3 4
CONTROL	258.750000	1	0.9185 0.2022 0.8714
TRT1	257.950000	2	0.9185 0.1703 0.9524
TRT2	268.933333	3	0.2022 0.1703 0.1537
TRT3	257.483333	4	0.8714 0.9524 0.1537

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: SURVWT

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 178.8986
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 21.614

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

LEVEL Comparison	Simultaneous		Difference Between Means	Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit		Lower Confidence Limit	Upper Confidence Limit
TRT2 - CONTROL	-11.431	10.183	10.183	31.797	
TRT1 - TRT1	-10.631	10.983	10.983	32.597	
TRT2 - TRT3	-10.164	11.450	11.450	33.064	
CONTROL - TRT2	-31.797	-10.183	-10.183	11.431	
CONTROL - TRT1	-20.814	0.800	0.800	22.414	
CONTROL - TRT3	-20.347	1.267	1.267	22.881	
TRT1 - TRT2	-32.597	-10.983	-10.983	10.631	
TRT1 - CONTROL	-22.414	-0.800	-0.800	20.814	
TRT1 - TRT3	-21.147	0.467	0.467	22.081	
TRT3 - TRT2	-33.064	-11.450	-11.450	10.164	
TRT3 - CONTROL	-22.881	-1.267	-1.267	20.347	
TRT3 - TRT1	-22.081	-0.467	-0.467	21.147	

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

15:32 Monday, December 18, 1995

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

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

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 178.8986
Critical Value of Dunnett's T= 2.192
Minimum Significant Difference= 16.929

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

LEVEL Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT2 - CONTROL	-6.746	10.183	27.113
TRT1 - CONTROL	-17.729	-0.800	16.129
TRT3 - CONTROL	-18.196	-1.267	15.663

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
20. ANALYSIS OF FOOD CONSUMPTION

15:32 Monday, December 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
20. ANALYSIS OF FOOD CONSUMPTION

15:32 Monday, December 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT	0
LEVEL CONTROL	L2
TRT1	L3
TRT2	L4
TRT3	-L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
20. ANALYSIS OF FOOD CONSUMPTION

15:32 Monday, December 18, 1995

General Linear Models Procedure

Dependent Variable: FOOD	DF	Sum of Squares	Mean Square	F Value	Pr > F
Source	3	1120.8033	373.6011	0.74	0.5431
Model					

10159.0567 507.9528

Corrected Total 23 11279.8600

R-Square 0.099363
C.V. 12.02016
Root MSE 22.538
FOOD Mean 187.50

Source DF Type I SS Mean Square F Value Pr > F
LEVEL 3 1120.8033 373.6011 0.74 0.5431

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
20. ANALYSIS OF FOOD CONSUMPTION

15:32 Monday, December 18, 1995

General Linear Models Procedure
Least Squares Means

LEVEL	FOOD LSMEAN	Pr > T	H0: LSMEAN(1)=LSMEAN(J)
CONTROL	176.516667	1	0.3866 0.3004 0.1687
TRT1	188.033333	2	0.3866 0.8605 0.5931
TRT2	190.350000	3	0.3004 0.8605 0.7189
TRT3	195.100000	4	0.1687 0.5931 0.7189

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
20. ANALYSIS OF FOOD CONSUMPTION

15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: FOOD

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 507.9528
Critical Value of Studentized Ranges= 3.958
Minimum Significant Differences= 36.42

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

LEVEL Comparison	Simultaneous		Difference Between Means	Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit		Lower Confidence Limit	Upper Confidence Limit
TRT3 - TRT2	-31.67	-29.35	4.75	41.17	43.49
TRT3 - CONTROL	-17.84	-17.84	7.07	43.49	55.00
TRT2 - TRT3	-41.17	-34.10	-4.75	31.67	38.74
TRT2 - CONTROL	-22.59	-22.59	13.83	38.74	50.25
TRT1 - TRT3	-43.49	-38.74	-7.07	29.35	34.10
TRT1 - CONTROL	-24.90	-24.90	11.52	34.10	47.94

CONTROL - TRT3 17.84
 CONTROL - TRT2 22.59
 CONTROL - TRT1 24.90

-18.58
 -13.83
 -11.52

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 20. ANALYSIS OF FOOD CONSUMPTION

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dunnnett's One-tailed T tests for variable: FOOD

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

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 507.9528
 Critical Value of Dunnnett's T= 2.192
 Minimum Significant Difference= 28.527

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

LEVEL Comparison	Simultaneous Lower Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit	
	Lower Limit	Upper Limit		Lower Limit	Upper Limit
TRT3 - CONTROL	-9.94	18.58	18.58	47.11	
TRT2 - CONTROL	-14.69	13.83	13.83	42.36	
TRT1 - CONTROL	-17.01	11.52	11.52	40.04	

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	125395.54	31348.89	9.85	0.0002
Error	19	60448.08	3181.48		
Corrected Total	23	185843.63			
R-Square		C.V.	Root MSE	POSTM Mean	
	0.674737	4.380514	56.405	1287.6	

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL PREM	3	16477.46	5492.49	1.73	0.1955
	1	108918.08	108918.08	34.24	0.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
LEVEL PREM	3	4547.62	1515.87	0.48	0.7024
	1	108918.08	108918.08	34.24	0.0001

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Least Squares Means

LEVEL	POSTM LSMEAN	Std Err LSMEAN	Pr > T HO:LSMEAN=0	LSMEAN Number
CONTROL	1298.46453	24.50056	0.0001	1
TRT1	1302.60531	23.14059	0.0001	2
TRT2	1281.93270	23.43272	0.0001	3
TRT3	1267.49745	23.09257	0.0001	4

Pr > |T| HO: LSMEAN(i)=LSMEAN(j)

i/j	1	2	3	4
1		0.9051	0.6417	0.3752
2	0.9051		0.5339	0.2946
3	0.6417	0.5339		0.6636
4	0.3752	0.2946	0.6636	

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: POSTM

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 19 MSE= 3181.478
 Critical Value of Studentized Range= 3.977
 Minimum Significant Difference= 91.568

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

LEVEL Comparison	Simultaneous Lower Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit	
	Lower Limit	Upper Limit		Lower Limit	Upper Limit
TRT1 - TRT2	-82.90	8.67	8.67	100.24	
TRT1 - TRT3	-53.24	38.33	38.33	129.90	
TRT1 - CONTROL	-25.07	66.50	66.50	158.07	
TRT2 - TRT1	-100.24	-8.67	-8.67	82.90	

39

TRT2	-61.90	29.67	121.24
TRT3	-33.74	57.83	149.40
CONTROL			
TRT1	-129.90	-38.33	53.24
TRT2	-121.24	-29.67	61.90
TRT3	-63.40	28.17	119.74
CONTROL			
TRT1	-158.07	-66.50	25.07
TRT2	-149.40	-57.83	33.74
TRT3	-119.74	-28.17	63.40

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dunnnett's One-tailed T tests for variable: POSTN

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

Alpha= 0.05 Confidence= 0.95 df= 19 MSE= 3181.478
 Critical Value of Dunnnett's T= 2.200
 Minimum Significant Difference= 71.629

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

LEVEL Comparison	Simultaneous Confidence Limit		Difference Between Means		Simultaneous Upper Confidence Limit	
	Lower	Upper	Mean	Upper	Confidence	Limit
TRT1 - CONTROL	-5.13	138.13	66.50	138.13		
TRT2 - CONTROL	-13.80	129.46	57.83	129.46		
TRT3 - CONTROL	-43.46	99.80	28.17	99.80		

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Dependent Variable: POSTF	DF	Sum of Squares	Mean Square	F Value	Pr > F
Source	4	32832.879	8208.220	3.21	0.0357
Model					

Error	19	48522.454	2553.813		
Corrected Total	23	81355.333			
R-Square		C.V.	Root MSE		
		4.197863	50.535		
Source	DF	Type III SS	Mean Square	F Value	Pr > F

LEVEL	3	22119.667	7373.222	2.89	0.0625
PREF	1	10713.212	10713.212	4.19	0.0546
Source	DF	Type III SS	Mean Square	F Value	Pr > F
LEVEL	3	11801.418	3933.806	1.54	0.2366
PREF	1	10713.212	10713.212	4.19	0.0546

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

 15:32 Monday, December 18, 1995

General Linear Models Procedure
 Least Squares Means

LEVEL	POSTF LSMEAN	Std Err LSMEAN	Pr > T HO:LSMEAN=0	LSMEAN Number
CONTROL	1208.03320	21.26225	0.0001	1
TRT1	1227.25744	21.06788	0.0001	2
TRT2	1214.34413	21.23761	0.0001	3
TRT3	1165.69856	21.04728	0.0001	4

Pr > |T| HO: LSMEAN(i)=LSMEAN(j)

i/j	1	2	3	4
1		0.5381	0.8404	0.1633
2	0.5381		0.6632	0.0569
3	0.8404	0.6632		0.1283
4	0.1633	0.0569	0.1283	

NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

 15:32 Monday, December 18, 1995

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: POSTF

NOTE: This test controls the type I experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 19 MSE= 2553.813
 Critical Value of Studentized Range= 3.977
 Minimum Significant Difference= 82.04

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

LEVEL	Simultaneous Lower Confidence	Difference Between	Simultaneous Upper Confidence
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Comparison	Limit	Means	Limit
TRT1 - TRT2	-70.71	11.33	93.37
TRT1 - CONTROL	-43.54	38.50	120.54
TRT1 - TRT3	-3.21	78.83	160.87
TRT2 - TRT1	-93.37	-11.33	70.71
TRT2 - CONTROL	-54.87	27.17	109.21
TRT2 - TRT3	-14.54	67.50	149.54
CONTROL - TRT1	-120.54	-38.50	43.54
CONTROL - TRT2	-109.21	-27.17	54.87
CONTROL - TRT3	-41.71	40.33	122.37
TRT3 - TRT1	-160.87	-78.83	3.21
TRT3 - TRT2	-149.54	-67.50	14.54
TRT3 - CONTROL	-122.37	-40.33	41.71

ICIA5504: EFFECTS ON REPRODUCTION IN MALLARD DUCK
 22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

15:32 Monday, December 18, 1995

General Linear Models Procedure

Dunnett's One-tailed T tests for variable: POSTF
 NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 19 MSE= 2553.813
 Critical Value of Dunnett's T= 2.200
 Minimum Significant Difference= 64.175

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT1 - CONTROL	-25.68	38.50	102.68
TRT2 - CONTROL	-37.01	27.17	91.34
TRT3 - CONTROL	-104.51	-40.33	23.84