

6-14-00

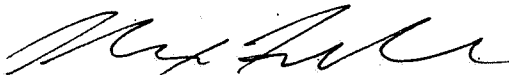
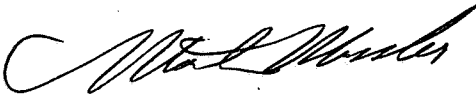
THE DATA
22 SECTION IS
SIDED

MRID No. 445050-05

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

1. **CHEMICAL:** Mesotrione PC Code No.: 122990
2. **TEST MATERIAL:** ZA1296 Purity: 96.8%
3. **CITATION:**

Authors: Alison J. Johnson, I. Suzanne Dawe, and
Graham F. Healey
Title: ZA1296: Effects on Reproduction in
Mallard Duck
Study Completion Date: May 22, 1997
Laboratory: Huntingdon Life Sciences Ltd.,
Huntingdon, Cambridgeshire, UK
Sponsor: ZENECA Agricultural Products, Wilmington,
DE
Laboratory Report ID: ISN 358/961595
MRID No.: 445050-05
DP Barcode: D245475
4. **REVIEWED BY:** Max Feken, M.S., Environmental Toxicologist,
Golder Associates Inc.

Signature:  Date: 7/31/98
- APPROVED BY: Mark Mossler, M.S., Toxicologist,
Golder Associates Inc.
Signature:  Date: 7/31/98
5. **APPROVED BY:**

Signature:  Date: 6/14/00
6. **STUDY PARAMETERS:**

Scientific Name of Test Organism: *Anas platyrhynchos*
Age of Test Organisms at Test Initiation: 9 months
Definitive Study Duration: 22 weeks
7. **CONCLUSIONS:** This study is scientifically sound and meets
the guideline requirements for an avian reproduction study
using mallards. Based on a reduction in the percentage of
normal hatchlings of eggs laid at the 600 and 3000 ppm
concentrations, the NOEC was 120 ppm.

Results Synopsis**Most sensitive endpoints:** Normal hatchlings/eggs laid**NOEC:** 120 ppm**LOEC:** 3000 ppm**8. ADEQUACY OF THE STUDY:****A. Classification:** Core**B. Rationale:** N/A**C. Repairability:** N/A**9. GUIDELINE DEVIATIONS:**

1. The maximum field residue level was not reported.
2. The egg storage and hatching humidity were not reported.

10. SUBMISSION PURPOSE:**11. MATERIALS AND METHODS:****A. Test Organisms**

Guideline Criteria	Reported Information
<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>)	Mallard (<i>Anas platyrhynchos</i>)
<u>Age at beginning of test</u> Birds should be approaching their first breeding season.	9 months old; birds were approaching their first breeding season.
<u>Supplier</u> All birds should be from the same source.	The County Game Farms, Ashford, Kent, UK
<u>Were birds pen-reared?</u>	Yes
<u>Were birds phenotypically indistinguishable from wild birds?</u>	Yes

Guideline Criteria	Reported Information
<u>Health observation period</u> 2 to 6 weeks.	2 weeks
Were birds healthy and without excessive mortality prior to the test?	Yes

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 daily minimum and maximum were of the study room were 13°C and 17°C, respectively.
<u>Relative humidity</u> Approx. 55%	Mean: 86%
<u>Lighting</u> <u>First 8 weeks:</u> 7 h per day. <u>Thereafter:</u> 16-17 h per day. At least 6 footcandles at bird level.	First 7 weeks: 7 h per day. Thereafter: 16 h per day. Illumination: 3.7 - 7.4 footcandles

Guideline Criteria	Reported Information
<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 supplied by Parker Brothers Ltd, Mildenhall, Suffolk, UK.
<u>Preparation of test diet</u> A premix 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?	Premix prepared weekly
Was the diet analyzed to verify homogeneity and stability of the test substance?	Yes, stable for up to 15 days
<u>Replenishment of feed</u>	Adult diets were prepared weekly and presented to the birds each week. 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, 120, 600, and 3000 ppm. Max. residue level: Not reported.
<u>Control</u> Vehicle control.	Negative control
<u>Vehicle</u> Corn oil or other appropriate vehicle.	None
<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
<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.	6 pens per group
<u>Pre-laying exposure duration</u> At least 10 weeks prior to the onset of egg-laying.	10 weeks
<u>Exposure duration with egg-laying</u> At least 10 weeks.	12 weeks

Guideline Criteria	Reported Information
<u>Withdrawal period</u> If reduced reproduction is evident, a withdrawal period of up to 3 weeks may be added to the test phase.	N/A

D. Egg Collection and Incubation

Guideline Criteria	Reported Information
Were eggs collected daily?	Yes
<u>Egg storage temperature</u> Approximately 16°C (61°F)	Temperature set at 16°C
<u>Egg storage humidity</u> Approximately 65%	Not reported
Were eggs set weekly?	Yes
Were eggs candled for cracks prior to being set for incubation on Day 0?	Yes
<u>Candling for fertility</u> Quail: approx. Day 11 Ducks: approx. Day 14	Eggs were candled on Days 14 and 21.
<u>Transfer of eggs to hatcher</u> Bobwhite: Day 21 Mallard: Day 23	Eggs were transferred on Day 23.
<u>Hatching temperature</u> 39°C (102°F) is recommended	Set at 39°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).	All eggs laid on the first day of Weeks 11, 13, 15, 17, 19, and 21 were collected for eggshell thickness measurement.
Were shells opened, washed, and air dry for at least 48 hours before measuring?	Yes; shells air dried for 48 hours.
<u>Measurement</u> 3-4 measurements per egg to the nearest 0.01 mm.	Four 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

Guideline Criteria	Reported Information
Reproductive Endpoints The following endpoints should be reported: • 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 eggs laid per female, number of dead hatchlings in shell (both pipped and not pipped), and hatchling weight.
Were data reported by pen for all endpoints?	Yes

Significant Results: There were no overt signs of toxicity or treatment related mortalities at any concentration (120, 600, and 3000 ppm). When compared to the control, there were no treatment related reductions in food consumption or adult bodyweights. There was a statistically significant reduction in live 3-week embryos of ~~viable embryos~~ at the 600 and 3000 ppm treatment levels when compared to the control. This reduction was slight and not considered biologically significant. When compared to the control, there was a significant treatment related reduction in the percentage of normal hatchlings of viable embryos at the 600 and 3000 ppm treatment levels. In addition, there was a significant reduction in the proportion of normal hatchlings of live 3-week embryos at the highest treatment level (3000 ppm) when compared to the control.

13. VERIFIED STATISTICAL RESULTS:Means of Endpoints (per pen)

Endpoint	Control	120 ppm	600 ppm	3000 ppm
Eggs laid (EL)	228 (48)	233 (44)	236 (62)	233 (50)
Eggs laid per female (EF)	46 (9)	48 (10)	48 (12)	47 (10)
Eggs cracked (EC)	3.2 (4.9)	2.3 (1.6)	4.8 (1.7)	2.5 (1.3)
Eggs set (ES)	208 (42)	213 (39)	211 (59)	212 (47)
Viable embryos (VE)	200 (41)	198 (46)	201 (63)	203 (41)
Live 3-wk embryos (LE)	186 (33)	186 (40)	179 (59)	185 (34)
Normal hatchlings (NH)	125 (26)	125 (25)	106 (45)	100 (32)
14-day-old survivors (HS)	118 (28)	119 (25)	100 (45)	96 (34)
Egg shell thickness (THICK)	0.332 (0.008)	0.330 (0.009)	0.330 (0.013)	0.333 (0.005)
Hatchling weight (HATWT)	37.0 (2.0)	36.2 (0.5)	36.0 (1.0)	36.4 (1.6)
14-day-old survivor weight (SURVWT)	250 (25)	248 (13)	252 (10)	254 (17)
Mean food consumption (FOOD)	187 (23)	188 (15)	190 (12)	195 (12)
Final weight of males (POSTM)	1250 (109)	1155 (81)	1146 (67)	1208 (114)
Final weight of females (POSTF)	1207 (104)	1133 (53)	1202 (51)	1170 (33)

Statistically Significant Endpoints

Endpoint	Statistical Method	Levels at which Effect Was Observed
<u>Reduction in percentage of:</u> - Normal hatchlings/eggs laid	Williams' ^a	600 and 3000 ppm
<u>Reduction in percentage of:</u> - Live embryos/viable embryos	Dunnett's	300 ppm ^b
<u>Decrease in:</u> - Male body weight	Dunnett's	120 and 300 ppm ^b
- Female body weight	Dunnett's	120 ppm ^b

^aThe only parameter analyzed using Williams' test (in TOXSTAT)

^bNot considered treatment related

14. **REVIEWER'S COMMENTS:** Based on a reduction in the percentage of normal hatchlings of eggs laid at the 600 and 3000 ppm treatment levels, the NOEL and LOEL were determined to be 120 and 600 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**.

ZA1296 - REPRO IN MALLARD

File: 44505005

Transform: ARC SINE(SQUARE ROOT(Y))

WILLIAMS TEST (Isotonic regression model)

TABLE 1 OF 2

GROUP	IDENTIFICATION	N	ORIGINAL MEAN	TRANSFORMED MEAN	ISOTONIZED MEAN
1	CONTROL	6	0.561	0.848	0.848
2	120	6	0.538	0.825	0.825
3	600	6	0.438	0.722	0.722
4	3000	6	0.435	0.718	0.718

ZA1296 - REPRO IN MALLARD

File: 44505005

Transform: ARC SINE(SQUARE ROOT(Y))

WILLIAMS TEST (Isotonic regression model)

TABLE 2 OF 2

IDENTIFICATION	ISOTONIZED MEAN	CALC. WILLIAMS	SIG P=.05	TABLE WILLIAMS	DEGREES OF FREEDOM
CONTROL	0.848				
120	0.825	0.370		1.72	k= 1, v=20
600	0.722	2.003	*	1.81	k= 2, v=20
3000	0.718	2.070	*	1.83	k= 3, v=20

s = 0.109

Note: df used for table values are approximate when v > 20.

Normal Hatchlings
Eggs laid

NOEC = 120 ppm

(11)

* significant
using Williams'
test in Toxstat

EC	3.17	2.33	4.83	2.50
ES	207.67	212.83	211.17	211.50
VE	199.50	198.00	201.00	202.83
LE	185.50	186.17	178.67	184.83
NH	125.33	124.83	105.83	99.67
HS	117.83	118.67	99.83	95.83
ES/EL (%)	91.14	91.31	89.20	90.60
(EL-EC)/EL (%)	98.84	99.05	97.77	98.93
VE/ES (%)	96.14	92.57	94.38	96.24
LE/VE (%)	93.37	94.30	88.55	91.43
NH/EL (%)	56.10	53.81	43.77	43.46
NH/ES (%)	61.55	58.91	49.09	48.09
NH/LE (%)	68.06	67.82	58.62	54.44
HS/ES (%)	58.05	56.00	46.08	46.19
HS/NH (%)	93.52	94.92	93.36	95.14
THICK	0.33	0.33	0.33	0.33
HATWT	36.95	36.20	36.03	36.37
SURVWT	250.33	247.83	252.17	254.17
FOOD	186.67	188.17	189.50	195.17
POSTM	1250.00	1155.17	1146.00	1207.67
POSTF	1206.67	1132.50	1202.33	1169.67

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
10:34 Thursday, July 16, 1998

I FVEI = CONTROL

Variable	Label	N	Mean	Std Dev	CV
EL		6	228.167	48.106	21.084
EF		6	46.033	9.408	20.436
EC		6	3.167	4.875	153.951
ES		6	207.667	41.572	20.019
VE		6	199.500	40.678	20.390
LE		6	185.500	32.715	17.636
NH		6	125.333	26.440	21.096
HS		6	117.833	28.053	23.807
THICK		6	0.332	0.008	2.309
HAIWT		6	36.950	2.046	5.538
SURVWT		6	250.333	25.065	10.013
FOOD		6	186.667	22.563	12.087
PREM		6	1136.167	60.635	5.337
POSTM		6	1250.000	108.639	8.691
PREF		6	1061.833	37.923	3.571
POSTF		6	1206.667	104.355	8.648
ES_EL	ES/EL (%)	6	91.142	2.205	2.419
NH_EL	NH/EL (%)	6	56.098	12.434	22.164

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ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
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OBS	LEVEL	EL	EF	EC	ES	VE	LE	NH	HS	THICK
1	CONTROL	202	42.8	2	180	176	164	108	105	0.335
2	CONTROL	251	50.2	1	234	210	191	90	73	0.338
3	CONTROL	314	62.8	13	277	274	243	158	153	0.318
4	CONTROL	208	41.6	1	192	179	169	128	122	0.328
5	CONTROL	179	35.8	0	162	159	151	115	114	0.338
6	CONTROL	215	43.0	2	201	199	195	153	140	0.333
7	TRT1	187	37.4	0	172	170	164	91	80	0.330
8	TRT1	306	61.2	3	278	274	251	144	132	0.343
9	TRT1	261	59.0	5	234	221	206	134	134	0.328
10	TRT1	223	44.6	2	204	170	162	113	108	0.327
11	TRT1	196	39.2	4	180	147	139	108	108	0.316
12	TRT1	227	45.4	2	209	206	195	159	150	0.334
13	TRT2	230	46.0	5	203	191	172	75	63	0.333
14	TRT2	180	36.0	4	163	143	115	67	62	0.348
15	TRT2	175	37.7	8	145	130	119	78	72	0.322
16	TRT2	343	68.6	5	311	302	269	179	173	0.330
17	TRT2	224	44.8	4	206	203	180	95	94	0.310
18	TRT2	263	52.6	3	239	237	217	141	135	0.337
19	TRT2	209	41.8	1	191	180	160	61	51	0.324
20	TRT3	290	58.0	4	262	247	217	158	155	0.337
21	TRT3	287	57.4	2	263	249	222	93	92	0.335
22	TRT3	250	50.0	4	228	219	208	86	81	0.330
23	TRT3	173	34.6	3	154	153	146	97	95	0.336
24	TRT3	190	38.0	1	171	169	156	103	101	0.337

7-8 208 180 1275 1505 1075 1185
ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
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	LEVEL			
	CONTROL	TRT1	TRT2	TRT3
EL	228.17	233.33	235.83	233.17
EF	46.03	47.80	47.62	46.63

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Variable	Label	N	Mean	Std Dev	CV
ENC_EL	(EL-EC)/EL (%)	6	98.843	1.507	1.524
VE_ES	VE/ES (%)	6	96.137	3.795	3.948
NH_ES	NH/ES (%)	6	61.546	13.202	21.596
HS_ES	HS/ES (%)	6	58.055	14.461	24.910
LE_VE	LE/VE (%)	6	93.365	3.481	3.750
NH_LE	NH/LE (%)	6	68.059	11.708	17.202
HS_NH	HS/NH (%)	6	93.519	6.594	7.051

LEVEL=TRT1

Variable	Label	N	Mean	Std Dev	CV
EL		6	233.333	44.121	18.909
EF		6	47.800	10.031	20.986
EC		6	2.333	1.633	69.985
ES		6	212.833	38.815	18.237
VE		6	198.000	45.909	23.186
LE		6	186.167	39.937	21.452
NH		6	124.833	25.246	20.224
HS		6	118.667	24.969	21.042
THICK		6	0.330	0.009	2.690
HATWT		6	36.200	0.533	1.472
SURVWT		6	247.833	12.703	5.126
FOOD		6	188.167	15.198	8.077
PREM		6	1075.667	110.292	10.253
POSTM		6	1155.167	80.945	7.007
PREF		6	1057.167	57.485	5.438
POSTF		6	1132.500	52.508	4.636
ES_EL	ES/EL (%)	6	91.312	0.925	1.013
NH_EL	NH/EL (%)	6	53.814	8.405	15.619
ENC_EL	(EL-EC)/EL (%)	6	99.051	0.608	0.614
VE_ES	VE/ES (%)	6	92.568	7.985	8.626
NH_ES	NH/ES (%)	6	58.907	8.917	15.138
HS_ES	HS/ES (%)	6	55.995	9.362	16.720
LE_VE	LE/VE (%)	6	94.300	1.796	1.796
NH_LE	NH/LE (%)	6	67.816	10.568	15.584
HS_NH	HS/NH (%)	6	94.916	4.734	4.988

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LEVEL=TRT2

Variable	Label	N	Mean	Std Dev	CV
EL		6	235.833	61.992	26.286
EF		6	47.617	11.908	25.007
EC		6	4.833	1.722	35.636
ES		6	211.167	59.216	28.042
VE		6	201.000	63.255	31.470
LE		6	178.667	58.804	32.912
NH		6	105.833	44.589	42.131
HS		6	99.833	45.137	45.213
THICK		6	0.330	0.013	3.942
HATWT		6	36.033	0.979	2.717
SURVWT		6	252.167	10.323	4.094
FOOD		6	189.500	12.029	6.348
PREM		6	1088.000	82.450	7.578
POSTM		6	1146.000	66.783	5.828
PREF		6	1046.500	33.951	3.244
POSTF		6	1202.333	51.208	4.259
ES_EL	ES/EL (%)	6	89.197	3.333	3.737
NH_EL	NH/EL (%)	6	43.769	8.218	18.775
ENC_EL	(EL-EC)/EL (%)	6	97.775	1.222	1.250
VE_ES	VE/ES (%)	6	94.381	4.781	5.065
NH_ES	NH/ES (%)	6	49.085	9.078	18.494

Variable	Label	N	Mean	Std Dev	CV
HS_ES	HS/ES (%)	6	46.078	10.035	21.777
LE_VE	LE/VE (%)	6	88.552	4.163	4.701
NH_LE	NH/LE (%)	6	58.618	9.065	15.465
HS_NH	HS/NH (%)	6	93.364	5.237	5.609

LEVEL=TRT3

Variable	Label	N	Mean	Std Dev	CV
EL		6	233.167	49.958	21.426
EF		6	46.633	9.992	21.426
EC		6	2.500	1.378	55.136
ES		6	211.500	46.565	22.017
VE		6	202.833	41.214	20.319
LE		6	184.833	34.577	18.599
NH		6	99.667	32.085	32.193
HS		6	95.833	33.979	35.456
THICK		6	0.333	0.005	1.559
HATWT		6	36.367	1.559	4.287
SURVWT		6	254.167	17.069	6.716
FOOD		6	195.167	11.957	6.126
PREM		6	1169.500	85.899	7.345
POSTM		6	1207.667	114.134	9.451
PREF		6	1073.000	43.813	4.083
POSTF		6	1169.667	33.363	2.852
ES_EL	ES/EL (%)	6	90.598	0.999	1.102
NH_EL	NH/EL (%)	6	43.459	12.682	29.181
ENC_EL	(EL-EC)/EL (%)	6	98.931	0.566	0.572
VE_ES	VE/ES (%)	6	96.238	2.312	2.402
NH_ES	NH/ES (%)	6	48.091	14.485	30.121
HS_ES	HS/ES (%)	6	46.187	15.449	33.448
LE_VE	LE/VE (%)	6	91.435	3.278	3.585
NH_LE	NH/LE (%)	6	54.440	15.561	28.584
HS_NH	HS/NH (%)	6	95.136	5.888	6.190

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

1. ANALYSIS OF EGGS LAID

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

1. ANALYSIS OF EGGS LAID

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General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Coefficients

0

Effect

INTERCEPT

LEVEL

CONTROL

TRT1

TRT2

TRT3

L2

L3

L4

-L2-L3-L4

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

1. ANALYSIS OF EGGS LAID

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General Linear Models Procedure

Dependent Variable: EL

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	185.79167	61.93056	0.02	0.9950
Error	20	52997.83333	2649.89167		
Corrected Total	23	53183.62500			

R-Square	C.V.	Root MSE	EL Mean
0.003493	22.12879	51.477	232.63

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	185.79167	61.93056	0.02	0.9950

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

1. ANALYSIS OF EGGS LAID

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General Linear Models Procedure
Least Squares Means

LEVEL	EL	LSMEAN	i/j	1	2	3	4
CONTROL	228.166667	1	0.8637	0.7991	0.8681		
TRT1	233.333333	2	0.8637	0.9338	0.9956		
TRT2	235.833333	3	0.7991	0.9338	0.9294		
TRT3	233.166667	4	0.8681	0.9956	0.9294		

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

1. ANALYSIS OF EGGS LAID

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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= 2649.892
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 83.185

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

LEVEL	Simultaneous Lower Confidence	Difference Between	Simultaneous Upper Confidence
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Comparison

Comparison	Means	Limit
TRT2 - TRT1	2.500	85.685
TRT2 - TRT3	2.667	85.852
TRT2 - CONTROL	7.667	90.852
TRT1 - TRT2	-2.500	80.685
TRT1 - TRT3	0.167	83.352
TRT1 - CONTROL	5.167	88.352
TRT3 - TRT2	-2.667	80.519
TRT3 - TRT1	-0.167	83.019
TRT3 - CONTROL	5.000	88.185
CONTROL - TRT2	-7.667	75.519
CONTROL - TRT1	-5.167	78.019
CONTROL - TRT3	-5.000	78.185

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

1. ANALYSIS OF EGGS LAID

10:34 Thursday, July 16, 1998

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= 2649.892
Critical Value of Dunnett's T= 2.192
Minimum Significant Difference= 65.156

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	-57.489	7.667	72.823
TRT1	- CONTROL	-59.989	5.167	70.323
TRT3	- CONTROL	-60.156	5.000	70.156

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

2. ANALYSIS OF EGGS LAID PER FEMALE

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

2. ANALYSIS OF EGGS LAID PER FEMALE

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Effect Coefficients

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK 2. ANALYSIS OF EGGS LAID PER FEMALE

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: EF				
Source	DF	Sum of Squares	Mean Square	F Value Pr > F
Model	3	12.524583	4.174861	0.04 0.9895
Error	20	2153.755000	107.687750	
Corrected Total	23	2166.279583		

R-Square	C.V.	Root MSE	EF Mean
0.005782	22.06952	10.377	47.021

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	12.524583	4.174861	0.04	0.9895

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK 2. ANALYSIS OF EGGS LAID PER FEMALE

10:34 Thursday, July 16, 1998

General Linear Models Procedure Least Squares Means

LEVEL	EF	LSMEAN	i/j	Pr > T	H0: LSMEAN(i)=LSMEAN(j)
CONTROL	46.0333333	1	0.7711	0.7943	0.9212
TRT1	47.8000000	2	0.7711	0.9759	0.8476
TRT2	47.6166667	3	0.7943	0.9759	0.8713
TRT3	46.6333333	4	0.9212	0.8476	0.8713

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK 2. ANALYSIS OF EGGS LAID PER FEMALE

10:34 Thursday, July 16, 1998

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 107.6878
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 16.769

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

LEVEL	Comparison	Simultaneous		Difference Between Means	Simultaneous	
		Lower Limit	Confidence Limit		Upper Limit	Confidence Limit
TRT1	- TRT2	-16.586	-15.603	0.183	16.953	17.936
TRT1	- TRT3	-15.603	-15.003	1.167	17.936	18.536
TRT1	- CONTROL	-15.003	-15.186	1.767	18.536	19.136
TRT2	- TRT1	-16.953	-15.786	-0.183	16.586	17.753
TRT2	- TRT3	-15.786	-15.186	0.983	17.753	18.353
TRT2	- CONTROL	-15.186	-16.169	1.583	18.353	19.336
TRT3	- TRT1	-17.936	-17.753	-1.167	15.603	15.786
TRT3	- TRT2	-17.753	-16.169	-0.983	15.786	17.369
TRT3	- CONTROL	-16.169	-18.536	0.600	17.369	20.003
CONTROL	- TRT1	-18.536	-18.353	-1.767	15.003	15.186
CONTROL	- TRT2	-18.353	-17.369	-1.583	15.186	16.169
CONTROL	- TRT3	-17.369	-16.953	-0.600	16.169	16.586

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK 2. ANALYSIS OF EGGS LAID PER FEMALE

10:34 Thursday, July 16, 1998

General Linear Models Procedure

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

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= 107.6878
Critical Value of Dunnett's T= 2.192
Minimum Significant Difference= 13.135

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

LEVEL	Comparison	Simultaneous		Difference Between Means	Simultaneous	
		Lower Limit	Confidence Limit		Upper Limit	Confidence Limit
TRT1	- CONTROL	-11.368	-11.551	1.767	14.901	14.718
TRT2	- CONTROL	-11.551	-12.535	1.583	14.718	15.701
TRT3	- CONTROL	-12.535	-13.519	0.600	15.701	16.785

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK 3. ANALYSIS OF EGGS CRACKED

10:34 Thursday, July 16, 1998

General Linear Models Procedure Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

3. ANALYSIS OF EGGS CRACKED

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Coefficients

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

3. ANALYSIS OF EGGS CRACKED

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: EC

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	23.458333	7.819444	1.00	0.4136
Error	20	156.500000	7.825000		
Corrected Total	23	179.958333			

R-Square	C.V.	Root MSE	EC Mean
0.130354	87.18920	2.7973	3.2083

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	23.458333	7.819444	1.00	0.4136

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

3. ANALYSIS OF EGGS CRACKED

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Least Squares Means

LEVEL	EC	LSMEAN	i/j	Pr > T	H0: LSMEAN(i)=LSMEAN(j)
CONTROL	3.1666667	1	0.6115	0.3144	0.6842
TRT1	2.3333333	2	0.6115	0.1373	0.9188
TRT2	4.8333333	3	0.3144	0.1373	0.1640
TRT3	2.5000000	4	0.6842	0.9188	0.1640

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

3. ANALYSIS OF EGGS CRACKED

10:34 Thursday, July 16, 1998

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= 7.825

Critical Value of Studentized Range= 3.958

Minimum Significant Difference= 4.5204

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	-2.854	1.667	6.187
TRT2 - TRT3	-2.187	2.333	6.854
TRT2 - TRT1	-2.020	2.500	7.020
CONTROL - TRT2	-6.187	-1.667	2.854
CONTROL - TRT3	-3.854	0.667	5.187
CONTROL - TRT1	-3.687	0.833	5.354
TRT3 - TRT2	-6.854	-2.333	2.187
TRT3 - CONTROL	-5.187	-0.667	3.854
TRT3 - TRT1	-4.354	0.167	4.687
TRT1 - TRT2	-7.020	-2.500	2.020
TRT1 - CONTROL	-5.354	-0.833	3.887
TRT1 - TRT3	-4.687	-0.167	4.354

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

3. ANALYSIS OF EGGS CRACKED

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dunnett'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= 7.825

Critical Value of Dunnett's T= 2.192

Minimum Significant Difference= 3.5406

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	-1.874	1.667	5.207
TRT3 - CONTROL	-4.207	-0.667	2.874
TRT1 - CONTROL	-4.374	-0.833	2.707

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

4. ANALYSIS OF EGGS SET

10:34 Thursday, July 16, 1998
General Linear Models Procedure
Class Level Information

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
4. ANALYSIS OF EGGS SET

10:34 Thursday, July 16, 1998

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
4. ANALYSIS OF EGGS SET

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: ES
Source DF Sum of Squares Mean Square F Value Pr > F
Model 3 87.458333 29.152778 0.01 0.9979
Error 20 44548.50000 2227.425000
Corrected Total 23 44635.95833
R-Square C.V. Root MSE ES Mean
0.001959 22.38969 47.196 210.79

Source DF Type I SS Mean Square F Value Pr > F
LEVEL 3 87.458333 29.152778 0.01 0.9979

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
4. ANALYSIS OF EGGS SET

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Least Squares Means

LEVEL ES Pr > |T| H0: LSMEAN(i)=LSMEAN(j)
LSMEAN i/j 1 2 3 4

CONTROL 207.666667 1 0.8515 0.8991 0.8895
TRT1 212.833333 2 0.8515 0.9518 0.9615
TRT2 211.166667 3 0.8991 0.9518 0.9904
TRT3 211.500000 4 0.8895 0.9615 0.9904

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
4. ANALYSIS OF EGGS SET

10:34 Thursday, July 16, 1998

General Linear Models Procedure

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

NOTE: This test controls the type I experimentwise error rate.
Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 2227.425
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 76.267

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	Mean	Confidence	Mean	Limit
TRT1 - TRT3	-74.933	-74.933	1.333	77.600	77.600	77.600
TRT1 - TRT2	-74.600	-74.600	1.667	77.933	77.933	77.933
TRT1 - CONTROL	-71.100	-71.100	5.167	81.433	81.433	81.433
TRT3 - TRT1	-77.600	-77.600	-1.333	74.933	74.933	74.933
TRT3 - TRT2	-75.933	-75.933	0.333	76.600	76.600	76.600
TRT3 - CONTROL	-72.433	-72.433	3.833	80.100	80.100	80.100
TRT2 - TRT1	-77.933	-77.933	-1.667	74.600	74.600	74.600
TRT2 - TRT3	-76.600	-76.600	-0.333	75.933	75.933	75.933
TRT2 - CONTROL	-72.767	-72.767	3.500	79.767	79.767	79.767
CONTROL - TRT1	-81.433	-81.433	-5.167	71.100	71.100	71.100
CONTROL - TRT3	-80.100	-80.100	-3.833	72.433	72.433	72.433
CONTROL - TRT2	-79.767	-79.767	-3.500	72.767	72.767	72.767

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
4. ANALYSIS OF EGGS SET

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dunnnett'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= 2227.425
Critical Value of Dunnnett's T= 2.192
Minimum Significant Difference= 59.737

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

Simultaneous Lower	Difference	Simultaneous Upper

LEVEL Comparison	Confidence Limit	Between Means	Confidence Limit
CONTROL	-54.570	5.167	64.903
TRT1	-35.903	3.833	63.570
TRT2	-56.237	3.500	63.237

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
5. ANALYSIS OF VIABLE EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
5. ANALYSIS OF VIABLE EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
5. ANALYSIS OF VIABLE EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: VE	DF	Sum of Squares	Mean Square	F Value	Pr > F
Source	3	77.000000	25.666667	0.01	0.9984
Model	20	47310.33333	2365.516667		
Error	23	47387.33333			
Corrected Total					

R-Square	C.V.	Root MSE	VE Mean
0.001625	24.27783	48.637	200.33

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	77.000000	25.666667	0.01	0.9984

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
5. ANALYSIS OF VIABLE EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Least Squares Means

LEVEL	VE	Pr > T	H0: LSMEAN(i)=LSMEAN(j)
	LSMEAN	i/j	1 2 3 4
CONTROL	199.500000	1	0.9579 0.9579 0.9067
TRT1	198.000000	2	0.9579 0.9160 0.8651
TRT2	201.000000	3	0.9579 0.9160 0.9486
TRT3	202.833333	4	0.9067 0.8651 0.9486

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
5. ANALYSIS OF VIABLE EMBRYOS

10:34 Thursday, July 16, 1998

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= 2365.517
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 78.595

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	-76.762	1.833	80.428
TRT3 - CONTROL	-75.262	3.333	81.928
TRT3 - TRT1	-73.762	4.833	83.428
TRT2 - TRT3	-80.428	-1.833	76.762
TRT2 - CONTROL	-77.095	1.500	80.095
TRT2 - TRT1	-75.595	3.000	81.595
CONTROL - TRT3	-81.928	-3.333	75.262
CONTROL - TRT2	-80.095	-1.500	77.095
CONTROL - TRT1	-77.095	1.500	80.095
TRT1 - TRT3	-83.428	-4.833	73.762
TRT1 - TRT2	-81.595	-3.000	75.595
TRT1 - CONTROL	-80.095	-1.500	77.095

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
5. ANALYSIS OF VIABLE EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure

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

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= 2365.517
Critical Value of Dunnett's T= 2.192
Minimum Significant Difference= 61.561

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

LEVEL Comparison	Simultaneous		Difference		Simultaneous
	Lower Confidence Limit	Upper Confidence Limit	Between Means	Upper Confidence Limit	Lower Confidence Limit
TRT3 - CONTROL	-58.227	3.333	3.333	64.894	
TRT2 - CONTROL	-60.061	1.500	1.500	63.061	
TRT1 - CONTROL	-63.061	-1.500	-1.500	60.061	

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

6. ANALYSIS OF LIVE 3-WEEK EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

6. ANALYSIS OF LIVE 3-WEEK EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Coefficients

0

INTERCEPT

LEVEL

CONTROL

TRT1

TRT2

TRT3

L2

L3

L4

-L2-L3-L4

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

6. ANALYSIS OF LIVE 3-WEEK EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: LE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	215.45833	71.81944	0.04	0.9893
Error	20	36524.50000	1826.22500		
Corrected Total	23	36739.95833			
R-Square		C.V.	Root MSE		LE Mean

0.005864 23.25152 42.734 183.79

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	215.45833	71.81944	0.04	0.9893

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

6. ANALYSIS OF LIVE 3-WEEK EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Least Squares Means

LEVEL	LE	Pr > T	H0: LSMEAN(i)=LSMEAN(j)
	LSMEAN	1/j	2 3 4
CONTROL	185.500000	1	0.9787 0.7847 0.9787
TRT1	186.166667	2	0.9787 0.7843 0.9574
TRT2	178.666667	3	0.7847 0.7643 0.8052
TRT3	184.833333	4	0.9787 0.9574 0.8052

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

6. ANALYSIS OF LIVE 3-WEEK EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 1826.225

Critical Value of Studentized Range= 3.958

Minimum Significant Difference= 69.057

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

LEVEL Comparison	Simultaneous		Difference		Simultaneous
	Lower Confidence Limit	Upper Confidence Limit	Between Means	Upper Confidence Limit	Lower Confidence Limit
TRT1 - CONTROL	-68.391	0.667	0.667	69.724	
TRT1 - TRT3	-67.724	1.333	1.333	70.391	
TRT1 - TRT2	-61.557	7.500	7.500	76.557	
CONTROL - TRT1	-69.724	-0.667	-0.667	68.391	
CONTROL - TRT3	-68.391	0.667	0.667	69.724	
CONTROL - TRT2	-62.224	6.833	6.833	75.891	
TRT3 - TRT1	-70.391	-1.333	-1.333	67.724	
TRT3 - CONTROL	-69.724	-0.667	-0.667	68.391	
TRT3 - TRT2	-62.891	6.167	6.167	75.224	
TRT2 - TRT1	-76.557	-7.500	-7.500	61.557	
TRT2 - CONTROL	-75.891	-6.833	-6.833	62.224	
TRT2 - TRT3	-75.224	-6.167	-6.167	62.891	

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= 1826.225
Critical Value of Dunnett's T= 2.192
Minimum Significant Difference= 54.09

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

LEVEL Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1 - CONTROL	-53.423	0.667	54.757
TRT3 - CONTROL	-54.757	-0.667	53.423
TRT2 - CONTROL	-60.923	-6.833	47.257

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
7. ANALYSIS OF NORMAL HATCHLINGS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
7. ANALYSIS OF NORMAL HATCHLINGS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Coefficients

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
7. ANALYSIS OF NORMAL HATCHLINGS

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: NH

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Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	3107.5000	1035.8333	0.95	0.4346
Error	20	21770.3333	1088.5167		
Corrected Total	23	24877.8333			

R-Square	C.V.	Root MSE	NH Mean
0.124910	28.96211	32.993	113.92

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	3107.5000	1035.8333	0.95	0.4346

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
7. ANALYSIS OF NORMAL HATCHLINGS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Least Squares Means

LEVEL	NH LSMEAN	Pr > T 1/j	H0: LSMEAN(i)=LSMEAN(j) 2 3 4
CONTROL	125.333333	1	0.9793 0.3182 0.1929
TRT1	124.833333	2	0.9793 0.3305 0.2014
TRT2	105.833333	3	0.3182 0.3305 0.7495
TRT3	99.666667	4	0.1929 0.2014 0.7495

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
7. ANALYSIS OF NORMAL HATCHLINGS

10:34 Thursday, July 16, 1998

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

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

Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 1088.517
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 53.315

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

LEVEL Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
CONTROL - TRT1	-52.82	0.50	53.82
CONTROL - TRT2	-33.82	19.50	72.82
CONTROL - TRT3	-27.65	25.67	78.98
TRT1 - CONTROL	-53.82	-0.50	52.82
TRT1 - TRT2	-34.32	19.00	72.32
TRT1 - TRT3	-28.15	25.17	78.48

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TRT2 - CONTROL -72.82 -19.50 33.82
TRT2 - TRT1 -72.32 -19.00 34.32
TRT2 - TRT3 -47.15 6.17 59.48

TRT3 - CONTROL -78.98 -25.67 27.65
TRT3 - TRT1 -78.48 -25.17 28.15
TRT3 - TRT2 -59.48 -6.17 47.15

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ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
8. ANALYSIS OF NORMAL HATCHLINGS

10:34 Thursday, July 16, 1998

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 Confidence= 0.95 df= 20 MSE= 1088.517
Critical Value of Dunnnett's T= 2.192
Minimum Significant Difference= 41.76

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

LEVEL Comparison	Simultaneous Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit	
	Lower	Upper		Lower	Upper
TRT1 - CONTROL	-42.26	-0.50	-0.50	41.26	
TRT2 - CONTROL	-61.26	-19.50	-19.50	22.26	
TRT3 - CONTROL	-67.43	-25.67	-25.67	16.09	

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
8. ANALYSIS OF 14-DAY-OLD SURVIVORS

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
8. ANALYSIS OF 14-DAY-OLD SURVIVORS

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Coefficients

Effect	0	L2	L3	L4
INTERCEPT				
LEVEL				
CONTROL				
TRT1				
TRT2				
TRT3				

TRT3

-L2-L3-L4

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
8. ANALYSIS OF 14-DAY-OLD SURVIVORS

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	2551.1250	850.3750	0.74	0.5411
Error	20	23011.8333	1150.5917		
Corrected Total	23	25562.9583			

R-Square	C.V.	Root MSE	HS Mean
0.099798	31.39564	33.920	108.04

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	2551.1250	850.3750	0.74	0.5411

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
8. ANALYSIS OF 14-DAY-OLD SURVIVORS

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Least Squares Means

LEVEL	LSMEAN	Pr > T HO: LSMEAN(i)=LSMEAN(j)			
		i/j	1	2	3
CONTROL	117.833333	1	0.9665	0.3690	0.2746
TRT1	118.666667	2	0.9665	0.3477	0.2574
TRT2	99.833333	3	0.3690	0.3477	0.8402
TRT3	95.833333	4	0.2746	0.2574	0.8402

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
8. ANALYSIS OF 14-DAY-OLD SURVIVORS

10:34 Thursday, July 16, 1998

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 Confidence= 0.95 df= 20 MSE= 1150.592
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 54.814

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

Simultaneous Lower	Difference	Simultaneous Upper
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LEVEL Comparison	Confidence Limit	Between Means	Confidence Limit
TRT1 - CONTROL	-53.98	0.83	55.65
TRT1 - TRT2	-35.98	18.83	73.65
TRT1 - TRT3	-31.98	22.83	77.65
CONTROL - TRT1	-55.65	-0.83	53.98
CONTROL - TRT2	-36.81	18.00	72.81
CONTROL - TRT3	-32.81	22.00	76.81
TRT2 - TRT1	-73.65	-18.83	35.98
TRT2 - CONTROL	-72.81	-18.00	36.81
TRT2 - TRT3	-50.81	4.00	58.81
TRT3 - TRT1	-77.65	-22.83	31.98
TRT3 - CONTROL	-76.81	-22.00	32.81
TRT3 - TRT2	-58.81	-4.00	50.81

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
9. ANALYSIS OF 14-DAY-OLD SURVIVORS

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dunnnett'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= 1150.592
Critical Value of Dunnnett's T= 2.192
Minimum Significant Difference= 42.934

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

LEVEL Comparison	Simultaneous		Simultaneous	
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
TRT1 - CONTROL	-42.10	0.83	43.77	
TRT2 - CONTROL	-60.93	-18.00	24.93	
TRT3 - CONTROL	-64.93	-22.00	20.93	

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
9. ANALYSIS OF EGGS SET/EGGS LAID

10:34 Thursday, July 16, 1998

General Linear Models Procedure Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
9. ANALYSIS OF EGGS SET/EGGS LAID

10:34 Thursday, July 16, 1998

General Linear Models Procedure Type I Estimable Functions for: LEVEL

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
9. ANALYSIS OF EGGS SET/EGGS LAID

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	14.008642	4.669547	1.24	0.3227
Error	20	75.523161	3.776158		
Corrected Total	23	89.531803			

R-Square	C.V.	Root MSE	RESPONSE Mean
0.156466	2.692648	1.9432	72.168

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	14.008642	4.669547	1.24	0.3227

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
9. ANALYSIS OF EGGS SET/EGGS LAID

10:34 Thursday, July 16, 1998

General Linear Models Procedure Least Squares Means

LEVEL	RESPONSE LSMEAN	Pr > T HO: LSMEAN(i)=LSMEAN(j)
		1 2 3 4
CONTROL	72.7596471	1 0.9396 0.1192 0.5832
TRT1	72.8456707	2 0.9396 0.1038 0.5330
TRT2	70.9333653	3 0.1192 0.1038 0.2974
TRT3	72.1338379	4 0.5832 0.5330 0.2974

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
9. ANALYSIS OF EGGS SET/EGGS LAID

10:34 Thursday, July 16, 1998

General Linear Models Procedure

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

File:44505005.sas Page 23
 NOTE: This test controls the type I experimentwise error rate.
 Alpha= 0.05 Confidence= 0.95 df= 20 MSE= 3.776158
 Critical Value of Studentized Range= 3.958
 Minimum Significant Difference= 3.1402

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

LEVEL Comparison	Simultaneous			Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1 - CONTROL	-3.054	0.086	3.226	-3.054	0.086	3.226
TRT1 - TRT3	-2.428	0.712	3.852	-2.428	0.712	3.852
TRT1 - TRT2	-1.228	1.912	5.053	-1.228	1.912	5.053
CONTROL - TRT1	-3.226	-0.086	3.054	-3.226	-0.086	3.054
CONTROL - TRT3	-2.514	0.626	3.766	-2.514	0.626	3.766
CONTROL - TRT2	-1.314	1.826	4.966	-1.314	1.826	4.966
TRT3 - TRT1	-3.852	-0.712	2.428	-3.852	-0.712	2.428
TRT3 - CONTROL	-3.766	-0.626	2.514	-3.766	-0.626	2.514
TRT3 - TRT2	-1.940	1.200	4.341	-1.940	1.200	4.341
TRT2 - TRT1	-5.053	-1.912	1.228	-5.053	-1.912	1.228
TRT2 - CONTROL	-4.966	-1.826	1.314	-4.966	-1.826	1.314
TRT2 - TRT3	-4.341	-1.200	1.940	-4.341	-1.200	1.940

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 9. ANALYSIS OF EGGS SET/EGGS LAID

10:34 Thursday, July 16, 1998

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= 3.776158
 Critical Value of Dunnett's T= 2.192
 Minimum Significant Difference= 2.4596

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

LEVEL Comparison	Simultaneous			Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1 - CONTROL	-2.374	0.086	2.546	-2.374	0.086	2.546
TRT3 - CONTROL	-3.085	-0.626	1.834	-3.085	-0.626	1.834
TRT2 - CONTROL	-4.286	-1.826	0.633	-4.286	-1.826	0.633

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 10. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

File:44505005.sas Page 24

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 10. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

 10:34 Thursday, July 16, 1998

General Linear Models Procedure
 Type I Estimable Functions for: LEVEL

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 10. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

 10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: RESPONSE					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	50.886056	16.962019	0.42	0.7434
Error	20	815.393492	40.769675		
Corrected Total	23	866.279548			

R-Square	C.V.	Root MSE	RESPONSE Mean
0.058741	8.169983	6.3851	78.153

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	50.886056	16.962019	0.42	0.7434

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 10. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
 Least Squares Means

LEVEL	RESPONSE	Pr > T	H0: LSMEAN(i)=LSMEAN(j)
	LSMEAN	1/j	2 3 4
CONTROL	79.6590147	1	0.3498 0.5499 0.9464
TRT1	76.1292903	2	0.3498 0.7306 0.3843
TRT2	77.4167913	3	0.5499 0.7306 0.5950
TRT3	79.4081992	4	0.9464 0.3843 0.5950

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
10. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

10:34 Thursday, July 16, 1998

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= 40.76967
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 10.318

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 - TRT3	-10.067	10.569	0.251		10.569	
CONTROL - TRT2	-8.076	12.560	2.242		12.560	
CONTROL - TRT1	-6.788	13.848	3.530		13.848	
TRT3 - CONTROL	-10.569	10.067	-0.251		10.067	
TRT3 - TRT2	-8.327	12.310	1.991		12.310	
TRT3 - TRT1	-7.039	13.597	3.279		13.597	
TRT2 - CONTROL	-12.560	8.076	-2.242		8.076	
TRT2 - TRT3	-12.310	8.327	-1.991		8.327	
TRT2 - TRT1	-9.031	11.606	1.288		11.606	
TRT1 - CONTROL	-13.848	6.788	-3.530		6.788	
TRT1 - TRT3	-13.597	7.039	-3.279		7.039	
TRT1 - TRT2	-11.606	9.031	-1.288		9.031	

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
10. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

10:34 Thursday, July 16, 1998

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= 40.76967
Critical Value of Dunnett's T= 2.192
Minimum Significant Difference= 8.0818

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
TRT3 - CONTROL	-8.333	7.831	-0.251		7.831	
TRT2 - CONTROL	-10.324	5.840	-2.242		5.840	
TRT1 - CONTROL	-11.612	4.552	-3.530		4.552	

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

11. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
11. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Coefficients

INTERCEPT 0

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
11. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	124.54682	41.51561	3.73	0.0279
Error	20	222.39383	11.11969		
Corrected Total	23	346.94065			

R-Square C.V. Root MSE RESPONSE Mean
0.358986 4.516066 3.3346 73.839

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	124.54682	41.51561	3.73	0.0279

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
11. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIABLE EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Least Squares Means

RESPONSE Pr > |T| H0: LSMEAN(i)=LSMEAN(j)

	LSMEAN	i/j	1	2	3	4
CONTROL	75.4560417	1	0.6742	0.0162	0.2594	
TRT1	76.2774342	2	0.6742	0.0063	0.1281	
TRT2	70.4016850	3	0.0162	0.0063	0.1586	
TRT3	73.2210328	4	0.2594	0.1281	0.1586	

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
11. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIALE EMBRYOS

10:34 Thursday, July 16, 1998

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= 11.11969
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 5.3886

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

LEVEL Comparison	Simultaneous		Difference		Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit	Between Means	Upper Confidence Limit	Lower Confidence Limit	Upper Confidence Limit
TRT1 - CONTROL	-4.567	6.210	0.821	6.210		
TRT1 - TRT3	-2.332	8.445	3.056	8.445		
TRT1 - TRT2	0.487	11.264	5.876	11.264		***
CONTROL - TRT1	-6.210	4.567	-0.821	4.567		
CONTROL - TRT3	-3.154	7.624	2.235	7.624		
CONTROL - TRT2	-0.334	10.443	5.054	10.443		
TRT3 - TRT1	-8.445	3.332	-3.056	3.332		
TRT3 - CONTROL	-7.624	3.154	-2.235	3.154		
TRT3 - TRT2	-2.569	8.208	2.819	8.208		
TRT2 - TRT1	-11.264	-0.487	-5.876	-0.487		***
TRT2 - CONTROL	-10.443	0.334	-5.054	0.334		
TRT2 - TRT3	-8.208	2.569	-2.819	2.569		

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
11. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIALE EMBRYOS

10:34 Thursday, July 16, 1998

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= 11.11969
Critical Value of Dunnnett's T= 2.192
Minimum Significant Difference= 4.2207

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

Simultaneous	Simultaneous
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LEVEL Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1 - CONTROL	-3.399	0.821	5.042
TRT3 - CONTROL	-6.456	-2.235	1.986
TRT2 - CONTROL	-9.275	-5.054	-0.834

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
12. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
12. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Coefficients

INTERCEPT 0

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
12. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	303.43044	101.14348	1.98	0.1500
Error	20	1023.40856	51.17043		
Corrected Total	23	1326.83900			

R-Square	C.V.	Root MSE	RESPONSE Mean
0.228687	13.68300	7.1534	52.279

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	303.43044	101.14348	1.98	0.1500

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
12. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure Least Squares Means

LEVEL	RESPONSE	Pr > T H0: LSMEAN(i)=LSMEAN(j)				
	LSMEAN	i/j	1	2	3	4
CONTROL	55.8019306	1	0.9748	0.1752	0.0623	
TRT1	55.6700662	2	0.9748	0.1848	0.0663	
TRT2	49.9975005	3	0.1752	0.1848	0.5756	
TRT3	47.6469237	4	0.0623	0.0663	0.5756	

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
12. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

10:34 Thursday, July 16, 1998

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= 51.17043
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 11.56

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

LEVEL Comparison	Simultaneous			Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
CONTROL - TRT1	-11.428	0.132	11.691	-11.691	-0.132	11.428
CONTROL - TRT2	-5.755	5.804	17.364	-5.887	5.673	17.232
CONTROL - TRT3	-3.405	8.155	19.715	-3.536	8.023	19.583
TRT1 - CONTROL	-11.691	-0.132	11.428	-17.364	-5.804	5.755
TRT1 - TRT2	-5.887	5.673	17.232	-17.232	-5.673	5.887
TRT1 - TRT3	-3.536	8.023	19.583	-9.209	2.351	13.910
TRT2 - CONTROL	-17.364	-5.804	5.755	-19.715	-8.155	3.405
TRT2 - TRT1	-17.232	-5.673	5.887	-19.583	-8.023	3.536
TRT2 - TRT3	-9.209	2.351	13.910	-13.910	-2.351	9.209
TRT3 - CONTROL	-19.715	-8.155	3.405			
TRT3 - TRT1	-19.583	-8.023	3.536			
TRT3 - TRT2	-13.910	-2.351	9.209			

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
12. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

10:34 Thursday, July 16, 1998

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= 51.17043
Critical Value of Dunnett's T= 2.192
Minimum Significant Difference= 9.0542

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	-9.186	-0.132	8.922
TRT2 - CONTROL	-14.859	-5.804	3.250
TRT3 - CONTROL	-17.209	-8.155	0.899

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
13. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

10:34 Thursday, July 16, 1998

General Linear Models Procedure Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
13. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

10:34 Thursday, July 16, 1998

General Linear Models Procedure Type I Estimable Functions for: LEVEL

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
13. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: RESPONSE			
Source	DF	Sum of Squares	Mean Square
Model	3	270.76463	90.25488
Error	20	775.43406	38.77170
Corrected Total	23	1046.19870	

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
12. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

10:34 Thursday, July 16, 1998

General Linear Models Procedure

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

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Source	DF	Type I SS	Mean Square	F Value	Pr > F
R-Square					
0.258808		13.97318	6.2267		44.562
LEVEL	DF	Type I SS	Mean Square	F Value	Pr > F
CONTROL	3	270.76463	90.25488	2.33	0.1053

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
13. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

10:34 Thursday, July 16, 1998

General Linear Models Procedure Least Squares Means

LEVEL	RESPONSE LSMEAN	Pr > T H0: LSMEAN(i)=LSMEAN(j)	1/j	2	3	4
CONTROL	48.5508048	1	0.7156	0.0593	0.0517	
TRT1	47.2220932	2	0.7156	0.1186	0.1048	
TRT2	41.3604344	3	0.0593	0.1186	0.9460	
TRT3	41.1137023	4	0.0517	0.1048	0.9460	

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
13. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

10:34 Thursday, July 16, 1998

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= 38.7717
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 10.062

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

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
CONTROL	- TRT1	-8.733	1.329	11.391
CONTROL	- TRT2	-2.872	7.190	17.253
CONTROL	- TRT3	-2.625	7.437	17.499
TRT1	- CONTROL	-11.391	-1.329	8.733
TRT1	- TRT2	-4.200	5.862	15.924
TRT1	- TRT3	-3.954	6.108	16.171
TRT2	- CONTROL	-17.253	-7.190	2.872
TRT2	- TRT1	-15.924	-5.862	4.200
TRT2	- TRT3	-9.815	0.247	10.309
TRT3	- CONTROL	-17.499	-7.437	2.625
TRT3	- TRT1	-16.171	-6.108	3.954
TRT3	- TRT2	-10.309	-0.247	9.815

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
13. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

10:34 Thursday, July 16, 1998

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= 38.7717
Critical Value of Dunnnett's T= 2.192
Minimum Significant Difference= 7.8813

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	-9.210	-1.329	6.553
TRT2	- CONTROL	-15.072	-7.190	0.691
TRT3	- CONTROL	-15.318	-7.437	0.444

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
14. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

10:34 Thursday, July 16, 1998

General Linear Models Procedure Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
14. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

10:34 Thursday, July 16, 1998

General Linear Models Procedure Type I Estimable Functions for: LEVEL

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
14. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	49.137351	16.379117	0.32	0.8126
Error	20	1031.951338	51.597567		
Corrected Total	23	1081.088689			

R-Square	C.V.	Root MSE	RESPONSE Mean
0.045452	9.248862	7.1831	77.665

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	49.137351	16.379117	0.32	0.8126

General Linear Models Procedure
Least Squares Means

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
14. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

10:34 Thursday, July 16, 1998

LEVEL	RESPONSE	LSMEAN	Pr > T	H0: LSMEAN(i)=LSMEAN(j)
CONTROL	76.5685823	1	0.4933	0.8904 0.6230
TRT1	79.4629438	2	0.4933	0.4122 0.8446
TRT2	75.9899617	3	0.8904	0.4122 0.5302
TRT3	78.6392030	4	0.6230	0.8446 0.5302

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
14. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

10:34 Thursday, July 16, 1998

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= 51.59757
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 11.608

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

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT1	- TRT3	-10.784	0.824	12.431
TRT1	- CONTROL	-8.713	2.894	14.502
TRT1	- TRT2	-8.135	3.473	15.081
TRT3	- TRT1	-12.431	-0.824	10.784
TRT3	- CONTROL	-9.537	2.071	13.678

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	49.137351	16.379117	0.32	0.8126
Error	20	1031.951338	51.597567		
Corrected Total	23	1081.088689			

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= 51.59757
Critical Value of Dunnett's T= 2.192
Minimum Significant Difference= 9.0919

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
14. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

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LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT1	- CONTROL	-6.198	2.894	11.986
TRT3	- CONTROL	-7.021	2.071	11.163
TRT2	- CONTROL	-9.671	-0.579	8.513

General Linear Models Procedure

Class Level Information

Class Levels Values

LEVEL 4 CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
15. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Coefficients

INTERCEPT 0

LEVEL CONTROL L2 L3

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
15. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Coefficients

INTERCEPT 0

LEVEL CONTROL L2 L3

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 15. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

 10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	43.982176	14.660725	2.01	0.1448
Error	20	145.800585	7.290029		
Corrected Total	23	189.782761			

R-Square
 0.231750
 C.V.
 3.217936
 Root MSE
 2.7000
 RESPONSE Mean
 83.905

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	43.982176	14.660725	2.01	0.1448

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 15. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

 10:34 Thursday, July 16, 1998

General Linear Models Procedure
 Least Squares Means

LEVEL	RESPONSE LSMEAN	Pr > T H0: LSMEAN(i)=LSMEAN(j)
CONTROL	84.8691336	1 0.9727 0.0495 0.6802
TRT1	84.9231413	2 0.9727 0.0462 0.6555
TRT2	81.6100572	3 0.0495 0.0462 0.1100
TRT3	84.2171458	4 0.6802 0.6555 0.1100

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 15. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

 10:34 Thursday, July 16, 1998

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= 7.290029
 Critical Value of Studentized Range= 3.958
 Minimum Significant Difference= 4.3631

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

Simultaneous Simultaneous

LEVEL Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1 - CONTROL	-4.309	0.054	4.417
TRT1 - TRT3	-3.657	0.706	5.069
TRT1 - TRT2	-1.050	3.313	7.676
CONTROL - TRT1	-4.417	-0.054	4.309
CONTROL - TRT3	-3.711	0.652	5.015
CONTROL - TRT2	-1.104	3.259	7.622
TRT3 - TRT1	-5.069	-0.706	3.657
TRT3 - CONTROL	-5.015	-0.652	3.711
TRT3 - TRT2	-1.756	2.607	6.970
TRT2 - TRT1	-7.676	-3.313	1.050
TRT2 - CONTROL	-7.622	-3.259	1.104
TRT2 - TRT3	-6.970	-2.607	1.756

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 15. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

 10:34 Thursday, July 16, 1998

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= 7.290029
 Critical Value of Dunnett's T= 2.192
 Minimum Significant Difference= 3.4175

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	-3.363	0.054	3.471
TRT3 - CONTROL	-4.069	-0.652	2.765
TRT2 - CONTROL	-6.677	-3.259	0.158

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 16. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

 10:34 Thursday, July 16, 1998

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 16. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

 10:34 Thursday, July 16, 1998

Simultaneous

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

LEVEL CONTROL L2
TRT1 L3
TRT2 L4
TRT3 -L2-L3-L4ZAI296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
16. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	292.34537	97.44846	2.06	0.1381
Error	20	947.21658	47.36083		
Corrected Total	23	1239.56195			

R-Square	C.V.	Root MSE	RESPONSE Mean
0.235846	14.46304	6.8819	47.583

ZAI296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
16. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Least Squares Means

LEVEL	RESPONSE	LSMEAN	Pr > T	H0: LSMEAN(1)=LSMEAN(J)
CONTROL	51.8184096	1	0.6922	0.0783 0.0585
TRT1	50.2224557	2	0.6922	0.1615 0.1241
TRT2	44.4463175	3	0.0783	0.1615 0.8810
TRT3	43.8440120	4	0.0585	0.1241 0.8810

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

ZAI296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
16. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

10:34 Thursday, July 16, 1998

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= 47.36083
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 11.121

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
CONTROL - TRT1	-9.525	1.596	12.717
CONTROL - TRT2	-3.749	7.372	18.493
CONTROL - TRT3	-3.147	7.974	19.095
TRT1 - CONTROL	-12.717	-1.596	9.525
TRT1 - TRT2	-5.345	5.776	16.897
TRT1 - TRT3	-4.743	6.378	17.499
TRT2 - CONTROL	-18.493	-7.372	3.749
TRT2 - TRT1	-16.897	-5.776	5.345
TRT2 - TRT3	-10.519	0.602	11.723
TRT3 - CONTROL	-19.095	-7.974	3.147
TRT3 - TRT1	-17.499	-6.378	4.743
TRT3 - TRT2	-11.723	-0.602	10.519

ZAI296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
16. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

10:34 Thursday, July 16, 1998

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= 47.36083
Critical Value of Dunnett's T= 2.192
Minimum Significant Difference= 8.7106

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
CONTROL - TRT1	-10.307	-1.596	7.115
CONTROL - TRT2	-16.083	-7.372	1.339
CONTROL - TRT3	-16.685	-7.974	0.736

ZAI296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
17. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Class Level Information

Class Levels Values

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 17. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

 10:34 Thursday, July 16, 1998

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 17. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

 10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	250.37475	83.45825	1.53	0.2382
Error	20	1092.90208	54.64510		
Corrected Total	23	1343.27683			

R-Square 0.186391
 Root MSE 7.3922
 RESPONSE Mean 45.886

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	250.37475	83.45825	1.53	0.2382

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 17. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

 10:34 Thursday, July 16, 1998

General Linear Models Procedure
 Least Squares Means

LEVEL	RESPONSE	LSMEAN	Pr > T	H0: LSMEAN(i)=LSMEAN(j)
CONTROL	49.6810534	1	0.7841	0.1166 0.1169
TRT1	48.4961281	2	0.7841	0.1881 0.1886
TRT2	42.6805215	3	0.1166	0.1881 0.9990
TRT3	42.6861822	4	0.1169	0.1886 0.9990

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 17. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

 10:34 Thursday, July 16, 1998

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= 54.6451
 Critical Value of Studentized Range= 3.958
 Minimum Significant Difference= 11.946

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
CONTROL - TRT1	-10.761	1.185	13.131
CONTROL - TRT3	-4.951	6.995	18.940
CONTROL - TRT2	-4.945	7.001	18.946
TRT1 - CONTROL	-13.131	-1.185	10.761
TRT1 - TRT3	-6.136	5.810	17.756
TRT1 - TRT2	-6.130	5.816	17.761
TRT3 - CONTROL	-18.940	-6.995	4.951
TRT3 - TRT1	-17.756	-5.810	6.136
TRT3 - TRT2	-11.940	0.006	11.951
TRT2 - CONTROL	-18.946	-7.001	4.945
TRT2 - TRT1	-17.761	-5.816	6.130
TRT2 - TRT3	-11.951	-0.006	11.940

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
 17. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

 10:34 Thursday, July 16, 1998

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= 54.6451
 Critical Value of Dunnett's T= 2.192
 Minimum Significant Difference= 9.3565

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	-10.541	-1.185	8.172
TRT3 - CONTROL	-16.351	-6.995	2.362
TRT2 - CONTROL	-16.357	-7.001	2.356

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ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
18. ANALYSIS OF EGGSHELL THICKNESS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
18. ANALYSIS OF EGGSHELL THICKNESS

10:34 Thursday, July 16, 1998

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
18. ANALYSIS OF EGGSHELL THICKNESS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Dependent Variable: THICK

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	0.0000471	0.0000157	0.19	0.9030
Error	20	0.0016675	0.0000834		
Corrected Total	23	0.0017146			

R-Square 0.027484 C.V. 2.757566 Root MSE 0.0091

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	0.0000471	0.0000157	0.19	0.9030

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
18. ANALYSIS OF EGGSHELL THICKNESS

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General Linear Models Procedure
Least Squares Means

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THICK
LEVEL LSMEAN
Pr > |T| H0: LSMEAN(i)=LSMEAN(j)
i/j

LEVEL	THICK	LSMEAN	Pr > T	H0: LSMEAN(i)=LSMEAN(j)
CONTROL	0.3316667	1	0.7084	0.7552 0.7789
TRT1	0.3296667	2	0.7084	0.9502 0.5143
TRT2	0.3300000	3	0.7552	0.9502 0.5548
TRT3	0.3331667	4	0.7789	0.5143 0.5548

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
18. ANALYSIS OF EGGSHELL THICKNESS

10:34 Thursday, July 16, 1998

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= 0.000083
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 0.0148

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

LEVEL Comparison	Simultaneous		Difference Between Means	Simultaneous Upper Confidence Limit
	Lower Limit	Upper Limit		
TRT3 - CONTROL	-0.013255	0.001500	0.016255	
TRT3 - TRT2	-0.011589	0.003167	0.017922	
TRT3 - TRT1	-0.011255	0.003500	0.018255	
CONTROL - TRT3	-0.016255	-0.001500	0.013255	
CONTROL - TRT2	-0.013089	0.001667	0.016422	
CONTROL - TRT1	-0.012755	0.002000	0.016755	
TRT2 - TRT3	-0.017922	-0.003167	0.011589	
TRT2 - CONTROL	-0.016422	-0.001667	0.013089	
TRT2 - TRT1	-0.014422	0.000333	0.015089	
TRT1 - TRT3	-0.018255	-0.003500	0.011255	
TRT1 - CONTROL	-0.016755	-0.002000	0.012755	
TRT1 - TRT2	-0.015089	-0.000333	0.014422	

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
18. ANALYSIS OF EGGSHELL THICKNESS

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Dunnett'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= 0.000083
Critical Value of Dunnett's T= 2.192
Minimum Significant Difference= 0.0116

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

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LEVEL Comparison	Simultaneous		Difference Between Means	Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit		Lower Confidence Limit	Upper Confidence Limit
TRT3 - CONTROL	-0.010057	0.001500	0.011557	0.013057	0.013057
TRT2 - CONTROL	-0.013224	-0.001667	-0.009891	0.009891	0.009891
TRT1 - CONTROL	-0.013557	-0.002000	-0.009557	0.009557	0.009557

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
19. ANALYSIS OF HATCHLING WEIGHT

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
19. ANALYSIS OF HATCHLING WEIGHT

10:34 Thursday, July 16, 1998

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
19. ANALYSIS OF HATCHLING WEIGHT

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: HATWT		Sum of		Mean		Pr > F	
Source	DF	Squares	F Value	Square	F Value	Pr > F	
Model	3	2.8645833	0.9548611	0.49	0.6959		
Error	20	39.3016667	1.9650833				
Corrected Total	23	42.1662500					

R-Square C.V. Root MSE HATWT Mean
0.067935 3.852461 1.4018 36.387

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	2.8645833	0.9548611	0.49	0.6959

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
19. ANALYSIS OF HATCHLING WEIGHT

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Least Squares Means

LEVEL	HATWT LSMEAN	Pr > T i/j	H0: LSMEAN(i)=LSMEAN(j) 1 2 3 4
CONTROL	36.9500000	1	0.3651 0.2708 0.4794
TRT1	36.2000000	2	0.3651 0.8389 0.8389
TRT2	36.0333333	3	0.2708 0.8389 0.6848
TRT3	36.3666667	4	0.4794 0.8389 0.6848

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
19. ANALYSIS OF HATCHLING WEIGHT

10:34 Thursday, July 16, 1998

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= 1.965083
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 2.2653

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
CONTROL - TRT3	-1.6820	0.5833	0.5833	2.8486	2.8486
CONTROL - TRT1	-1.5153	0.7500	0.7500	3.0153	3.0153
CONTROL - TRT2	-1.3486	0.9167	0.9167	3.1820	3.1820
TRT3 - CONTROL	-2.8486	-0.5833	-0.5833	1.6820	1.6820
TRT1 - CONTROL	-2.0986	0.1667	0.1667	2.4320	2.4320
TRT2 - CONTROL	-1.9320	0.3333	0.3333	2.5986	2.5986
TRT1 - TRT3	-3.0153	-0.7500	-0.7500	1.5153	1.5153
TRT1 - TRT2	-2.4320	-0.1667	-0.1667	2.0986	2.0986
TRT2 - TRT1	-2.20986	0.1667	0.1667	2.4320	2.4320
TRT2 - TRT3	-3.1820	-0.9167	-0.9167	1.3486	1.3486
TRT3 - TRT1	-2.5986	-0.3333	-0.3333	1.9320	1.9320
TRT3 - TRT2	-2.4320	-0.1667	-0.1667	2.0986	2.0986

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
19. ANALYSIS OF HATCHLING WEIGHT

10:34 Thursday, July 16, 1998

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= 1.965083
Critical Value of Dunnett's T= 2.192
Minimum Significant Difference= 1.7743

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

LEVEL Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT3 - CONTROL	-2.3576	-0.5833	1.1910
TRT1 - CONTROL	-2.5243	-0.7500	1.0243
TRT2 - CONTROL	-2.6910	-0.9167	0.8576

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
20. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
20. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

10:34 Thursday, July 16, 1998

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
20. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: SURVWT				
Source	DF	Sum of Squares	Mean Square	F Value Pr > F
Model	3	130.79167	43.59722	0.15 0.9305
Error	20	5937.83333	296.89167	
Corrected Total	23	6068.62500		

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	130.79167	43.59722	0.15	0.9305
		R-Square	C.V.	Root MSE	SURVWT Mean
		0.021552	6.861342	17.231	251.13

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
20. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

10:34 Thursday, July 16, 1998

General Linear Models Procedure
Least Squares Means

LEVEL	SURVWT LSMEAN	Pr > T H0: LSMEAN(i)=LSMEAN(j)			
		1/j	1	2	3
CONTROL	250.333333	1	0.8041	0.8556	0.7041
TRT1	247.833333	2	0.8041	0.6678	0.5316
TRT2	252.166667	3	0.8556	0.6678	0.8427
TRT3	254.166667	4	0.7041	0.5316	0.8427

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
20. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

10:34 Thursday, July 16, 1998

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= 296.8917
Critical Value of Studentized Range= 3.958
Minimum Significant Difference= 27.844

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

LEVEL Comparison	Simultaneous		Difference		Simultaneous
	Lower Confidence Limit	Upper Confidence Limit	Between Means	Upper Confidence Limit	Lower Confidence Limit
TRT3 - TRT2	-25.844	2.000	2.000	29.844	
TRT3 - CONTROL	-24.011	3.833	3.833	31.677	
TRT3 - TRT1	-21.511	6.333	6.333	34.177	
TRT2 - TRT3	-29.844	-2.000	-2.000	25.844	
TRT2 - CONTROL	-26.011	1.833	1.833	29.677	
TRT2 - TRT1	-23.511	4.333	4.333	32.177	
CONTROL - TRT3	-31.677	-3.833	-3.833	24.011	
CONTROL - TRT2	-29.677	-1.833	-1.833	26.011	
CONTROL - TRT1	-25.344	2.500	2.500	30.344	
TRT1 - TRT3	-34.177	-6.333	-6.333	21.511	
TRT1 - TRT2	-32.177	-4.333	-4.333	23.511	
TRT1 - CONTROL	-30.344	-2.500	-2.500	25.344	

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

20. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

10:34 Thursday, July 16, 1998

General Linear Models Procedure

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

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= 296.8917
Critical Value of Dunnnett's T= 2.192
Minimum Significant Difference= 21.809

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

LEVEL Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT3 - CONTROL	-17.976	3.833	25.642
TRT2 - CONTROL	-19.976	1.833	23.642
TRT1 - CONTROL	-24.309	-2.500	19.309

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

21. ANALYSIS OF FOOD CONSUMPTION

10:34 Thursday, July 16, 1998General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

21. ANALYSIS OF FOOD CONSUMPTION

10:34 Thursday, July 16, 1998General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT

0

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

21. ANALYSIS OF FOOD CONSUMPTION

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: FOOD

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	248.12500	82.70833	0.32	0.8094
Error	20	5138.50000	256.92500		
Corrected Total	23	5386.62500			

R-Square	C.V.	Root MSE	FOOD Mean
0.046063	8.441807	16.029	189.88

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	248.12500	82.70833	0.32	0.8094

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

21. ANALYSIS OF FOOD CONSUMPTION

10:34 Thursday, July 16, 1998General Linear Models Procedure
Least Squares Means

LEVEL	FOOD LSMEAN	Pr > T H0: LSMEAN(i)=LSMEAN(j)
CONTROL	186.66667	1 0.8729 0.7626 0.3693
TRT1	188.16667	2 0.8729 0.8869 0.4582
TRT2	189.50000	3 0.7626 0.8869 0.5472
TRT3	195.16667	4 0.3693 0.4582 0.5472

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

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

21. ANALYSIS OF FOOD CONSUMPTION

10:34 Thursday, July 16, 1998

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= 256.925

Critical Value of Studentized Range= 3.958

Minimum Significant Difference= 25.902

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

LEVEL Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT3 - TRT2	-20.235	5.667	31.569
TRT3 - TRT1	-18.902	7.000	32.902
TRT3 - CONTROL	-17.402	8.500	34.402
TRT2 - TRT3	-31.569	-5.667	20.235

Model	TRT2	TRT1	CONTROL	TRT2	TRT1	CONTROL
Model 1	-24.569	-23.069	-2.833	-24.569	-23.069	-2.833
Model 2	-32.902	-27.235	-1.500	-32.902	-27.235	-1.500
Model 3	-34.402	-28.735	-1.500	-34.402	-28.735	-1.500
Model 4	-7.000	-1.333	-8.500	-7.000	-1.333	-8.500
Model 5	-18.902	-24.569	-2.833	-18.902	-24.569	-2.833
Model 6	-27.402	-27.402	-1.500	-27.402	-27.402	-1.500
Model 7	-17.402	-23.069	-2.833	-17.402	-23.069	-2.833
Model 8	-24.402	-24.402	-1.500	-24.402	-24.402	-1.500

7A1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

21. ANALYSIS OF FOOD CONSUMPTION

10:34 Thursday, July 16, 1998

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= 256.925
Critical Value of Dunnett's T= 2.192
Minimum Significant Difference= 20.288

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	- CONTROL	-11.788	8.500	28.788		
TRT2	- CONTROL	-17.455	2.833	25.121		
TRT1	- CONTROL	-18.788	1.500	21.788		

7A1206- EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

22. COVARIATE ANALYSIS OF MALE BODY WEIGHT *****

10:34 Thursday July 16, 1998

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

7A1296- EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

22. COVARIATE ANALYSIS OF MALE BODY WEIGHT

10:34 Thursday, July 16, 1998

General Linear Models Procedure

Dependent Variable: POSTM					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	146037.21	36509.30	9.18	0.0003

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Error	19	75535.74
Corrected Total	23	221572.96
		3975.57

	R-Square	C.V.	Root MSE	POSTM Mean
	0.659093	5.299794	63.052	1189.7

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	42366.79	14122.26	3.55	0.0340
PREM	1	103670.42	103670.42	26.08	0.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
LEVEL	3	18066.73	6022.24	1.51	0.2429
PREM	1	103670.42	103670.42	26.08	0.0001

7A1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

22. COVARIATE ANALYSIS OF MALE BODY WEIGHT

10:34 Thursday, July 16, 1998

General Linear Models Procedure Least Squares Means

LEVEL	POSTM LSMEAN	Std Err	Pr > t H0: LSMEAN=0	LSMEAN Number
CONTROL	1234.34756	25.92276	0.0001	1
TRT1	1189.79596	26.61918	0.0001	2
TRT2	1170.37903	26.17988	0.0001	3
TRT3	1164.31079	27.10495	0.0001	4

$$D_F > |T| \quad H_0: |SMEAN(i)| = |SMEAN(j)|$$

i/j	1	2	3	4
1				
2	0.2520			
3	0.1021	0.1021		
4	0.0723	0.5263	0.6005	
		0.2520	0.0723	0.8772

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

7A1206: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

22. COVARIATE ANALYSIS OF MALE BODY WEIGHT

10:34 Thursday, July 16, 1998

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= 3975.565
Critical Value of Studentized Range= 3.977
Minimum Significant Difference= 102.36

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

LEVEL	Simultaneous Lower Confidence		Difference Between	Simultaneous Upper Confidence	
	Simultaneous Lower Confidence	Simultaneous Upper Confidence		Simultaneous Lower Confidence	Simultaneous Upper Confidence
1	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000
9	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000
11	0.0000	0.0000	0.0000	0.0000	0.0000
12	0.0000	0.0000	0.0000	0.0000	0.0000
13	0.0000	0.0000	0.0000	0.0000	0.0000
14	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000	0.0000
17	0.0000	0.0000	0.0000	0.0000	0.0000
18	0.0000	0.0000	0.0000	0.0000	0.0000
19	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000
21	0.0000	0.0000	0.0000	0.0000	0.0000
22	0.0000	0.0000	0.0000	0.0000	0.0000
23	0.0000	0.0000	0.0000	0.0000	0.0000
24	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000
26	0.0000	0.0000	0.0000	0.0000	0.0000
27	0.0000	0.0000	0.0000	0.0000	0.0000
28	0.0000	0.0000	0.0000	0.0000	0.0000
29	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	0.0000
31	0.0000	0.0000	0.0000	0.0000	0.0000
32	0.0000	0.0000	0.0000	0.0000	0.0000
33	0.0000	0.0000	0.0000	0.0000	0.0000
34	0.0000	0.0000	0.0000	0.0000	0.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000
36	0.0000	0.0000	0.0000	0.0000	0.0000
37	0.0000	0.0000	0.0000	0.0000	0.0000
38	0.0000	0.0000	0.0000	0.0000	0.0000
39	0.0000	0.0000	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0000	0.0000	0.0000
41	0.0000	0.0000	0.0000	0.0000	0.0000
42	0.0000	0.0000	0.0000	0.0000	0.0000
43	0.0000	0.0000	0.0000	0.0000	0.0000
44	0.0000	0.0000	0.0000	0.0000	0.0000
45	0.0000	0.0000	0.0000	0.0000	0.0000
46	0.0000	0.0000	0.0000	0.0000	0.0000
47	0.0000	0.0000	0.0000	0.0000	0.0000
48	0.0000	0.0000	0.0000	0.0000	0.0000
49	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.0000	0.0000	0.0000
51	0.0000	0.0000	0.0000	0.0000	0.0000
52	0.0000	0.0000	0.0000	0.0000	0.0000
53	0.0000	0.0000	0.0000	0.0000	0.0000
54	0.0000	0.0000	0.0000	0.0000	0.0000

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
CONTROL - TRT2	-87.93	4.33	96.60		
CONTROL - TRT3	-55.26	37.00	129.26		
CONTROL - TRT1	-18.10	74.17	166.43		
TRT2 - CONTROL	-96.60	-4.33	87.93		
TRT2 - TRT3	-59.60	32.67	124.93		
TRT2 - TRT1	-22.43	69.83	162.10		
TRT3 - CONTROL	-129.26	-37.00	55.26		
TRT3 - TRT2	-124.93	-32.67	59.60		
TRT3 - TRT1	-55.10	37.17	129.43		
TRT1 - CONTROL	-166.43	-74.17	18.10		
TRT1 - TRT2	-162.10	-69.83	22.43		
TRT1 - TRT3	-129.43	-37.17	55.10		

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK

23. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

10:34 Thursday, July 16, 1998

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= 3229.964
Critical Value of Dunnett's T= 2.200
Minimum Significant Difference= 72.173

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	-76.51	-4.33	67.84		
TRT3 - CONTROL	-109.17	-37.00	35.17		
TRT1 - CONTROL	-146.34	-74.17	-1.99		***

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Comparison	Limit	Means	Limit
CONTROL - TRT3	-60.03	42.33	144.69
CONTROL - TRT1	-7.53	94.83	197.19
CONTROL - TRT2	1.64	104.00	206.36

TRT3 - CONTROL	-144.69	-42.33	60.03
TRT3 - TRT1	-49.86	52.50	154.86
TRT3 - TRT2	-40.69	61.67	164.03
TRT1 - CONTROL	-197.19	-94.83	7.53
TRT1 - TRT3	-154.86	-52.50	49.86
TRT1 - TRT2	-93.19	9.17	111.53
TRT2 - CONTROL	-206.36	-104.00	-1.64
TRT2 - TRT3	-164.03	-61.67	40.69
TRT2 - TRT1	-111.53	-9.17	93.19

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
23. COVARIATE ANALYSIS OF MALE BODY WEIGHT

10:34 Thursday, July 16, 1998

General Linear Models Procedure

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

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= 3975.565
Critical Value of Dunnnett's T= 2.200
Minimum Significant Difference= 80.071

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

LEVEL Comparison	Simultaneous		Difference		Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit	Between Means	Upper Confidence Limit	Lower Confidence Limit	Upper Confidence Limit
TRT3 - CONTROL	-122.40	-42.33	-42.33	37.74	***	***
TRT1 - CONTROL	-174.90	-94.83	-94.83	-14.76	***	***
TRT2 - CONTROL	-184.07	-104.00	-104.00	-23.93	***	***

ZA1296: EFFECTS ON REPRODUCTION IN THE MALLARD DUCK
23. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

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General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 24

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General Linear Models Procedure

Dependent Variable: POSTF				
Source	DF	Sum of Squares	Mean Square	Pr > F
Model	4	46862.640	11715.660	3.63 0.0233
Error	19	61369.319	3229.964	
Corrected Total	23	108231.958		
R-Square C.V. Root MSE				
				POSTF Mean
			4.825367	56.833 1177.8
Type I SS Mean Square F Value Pr > F				
Source	DF	Type I SS	Mean Square	F Value Pr > F
LEVEL	3	21320.458	7106.819	2.20 0.1213
PREF	1	25542.181	25542.181	7.91 0.0111
Type III SS Mean Square F Value Pr > F				
Source	DF	Type III SS	Mean Square	F Value Pr > F
LEVEL	3	24958.569	8319.523	2.58 0.0841
PREF	1	25542.181	25542.181	7.91 0.0111

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General Linear Models Procedure
Least Squares Means

LEVEL	POSTF LSMEAN	Std Err LSMEAN	Pr > T HO:LSMEAN=0	LSMEAN Number
CONTROL	1204.88124	23.21057	0.0001	1
TRT1	1134.48756	23.21265	0.0001	2
TRT2	1212.94486	23.50674	0.0001	3
TRT3	1158.85302	23.51839	0.0001	4

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

i/j	1	2	3	4
1		0.0452	0.8102	0.1788
2	0.0452		0.0279	0.4710
3	0.8102	0.0279		0.1248
4	0.1788	0.4710	0.1248	

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

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23. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

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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= 3229.964
Critical Value of Studentized Range= 3.977