

DATA EVALUATION RECORD
AVIAN REPRODUCTION TEST
GUIDELINE 71-4a

1. **CHEMICAL:** Sulfentrazone (129081)
2. **TEST MATERIAL:** Sulfentrazone technical; 94.2%
3. **CITATION:**
Authors: Pedersen, C.A. and D.R. DuCharme
Date: 1994
Title: Toxicity and reproduction study with
F6285 technical in bobwhite quail
Laboratory: Bio-Life Associates, Ltd., Neillsville,
WI
Lab. Report #: BLAL No. 112-005-07
Sponsor: FMC Corporation, Princeton, NJ
MRID No.: 433559-01

4. **STUDY PARAMETERS/RESULTS SYNOPSIS:**

Test Organisms Age: 15 weeks
Definitive Study Duration: 23 weeks
Endpoints affected: female body-weight gain
LOEC: 100 ppm ai
NOEC: 10 ppm ai

5. **REVIEWED BY:**

William Erickson
Biologist
EEB/EFED/EPA

Signature: *W. Erickson*

Date: 10/23/95

6. **APPROVED BY:**

Harry Craven
Section Head 4
EEB/EFED/EPA

Signature: *Harry Craven*

Date: 10/25/95

7. **CONCLUSIONS:** This study is scientifically sound but does not fulfill the guideline requirement for an avian reproduction study with the bobwhite quail.
8. **ADEQUACY OF THE STUDY:** Supplemental.
9. **GUIDELINE DEVIATIONS:** Test concentrations were too low to support the proposed use on turf and lawn. The study supports the proposed use on soybeans. The study must be repeated at higher test concentrations unless the proposed use on turf and lawn is limited to no more than two annual applications.

10. **BACKGROUND:** New chemical. Proposed uses are on soybeans and turf and lawn.

11. **MATERIALS AND METHODS:**

Test Organism:

Guideline Criteria	Reported Information
Species:	<i>Colinus virginianus</i>
Supplier:	Sand Prairie Quail Farm, Maquoketa, IA
Same source and hatch?	yes
Pen-reared?	yes
Age:	15 weeks
Indistinguishable from wild birds?	yes
Health:	all birds tested appeared healthy
Acclimation:	45 days

Test System:

Guideline Criteria	Reported Information
Adult housing and environmental conditions:	
Pens:	indoor, steel-wire pens (50.8 x 25.4 x 25.4 cm) maintained over galvanized dropping pans
Temperature:	19°C avg.
Relative humidity:	81% avg.
Photoperiod:	7-h light/day for first 8 weeks; 17-h thereafter
Chicks:	
Brooding pens:	indoor, battery brooders (91.4 x 71.1 x 27.9 cm)
Temperature:	18-25°C in room housing brooders

Photoperiod:	24 h
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Test Design:

Guideline Criteria	Reported Information
Dose levels:	0, 1, 10, 100 ppm ai
No. pens per level:	16
Male:Female ratio per pen:	1:1
Solvent:	none
Vehicle:	none reported
Diet:	Purina Custom Game Bird Layena 28%
Diet preparation:	prepared fresh weekly, approximately 24 h prior to administration
Verification of test substance concentrations:	200-g samples collected from control and each test level during weeks 1, 2, 3, 4, 8, 12, 16, and 20; samples immediately frozen and shipped for analysis
Food and water provided ad lib.?	yes
Food consumption/pen recorded weekly?	measured weekly but calculated on a biweekly basis
Adults weighed on weeks 0,2, 4,6,8, and at termination?	yes
Hatchlings and 14-day old chicks weighed?	yes
Egg-laying phase:	11 weeks
Eggs collected daily?	yes
Eggs stored at 16°C and 65% relative humidity?	14-17°C and 58% avg. rh
Hatchability recorded? (bobwhite, day 24; mallard, day 27)	day 24

Adults observed daily for abnormal behavior and signs of toxicity?	yes
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12. **QUALITY ASSURANCE MEASURES:** Yes.

13. **STATISTICAL METHODS:** Dunnett's test (one-tailed) was used to determine statistically significant differences between the control group and each of the treatment groups. Percentage data were arcsine transformed.

14. **REPORTED RESULTS:**

Dietary Analysis: The percents of nominal recovered from the dose verification samples collected during test weeks 1, 2, 3, 4, 8, 12, 16, and 20 averaged 93.2%, 98.3%, and 103% for the 1, 10, and 100 ppm test diets, respectively. The percents of nominal recovered from stability samples held for 7 days in environmental conditions simulating those of the study were 102%, 90.5%, and 95.3% for the 1, 10, and 100 ppm test diets, respectively.

Mortality: Nine birds died during the study, including 2 male and 2 female controls, 1 male and 2 females in the group dosed at 10 ppm, and 1 male and 1 female dosed at 100 ppm. The mortalities were not dose related and not considered a result of ingestion of the test material.

Clinical Signs: Three birds were considered to be lethargic and one of them had chalky excreta; however, two were control birds and thus the lethargy was not treatment related. Eleven birds (4 controls, 4 dosed at 1 ppm, 2 dosed at 10 ppm, and 1 dosed at 100 ppm) developed a region of excoriation (a condition in which there is a linear break in the skin surface, usually covered with blood or serous crusts) in either the tarsal/metatarsal areas, legs, wings, beaks, or anterior area of the head. This condition was not dose related and was attributed to increased activity and additional stress placed on the birds when the photoperiod was increased to promote egg production.

Gross Necropsy: All 9 birds that died during the study revealed gross observations. Signs in one or more of these birds included friable liver, a white mass circumscribing the intestines or attached to the liver, impacted intestines, crop and gizzard void of feed, and a red fluid mass attached to the heart. Of the 56 birds sacrificed at the end of the study, five exhibited gross observations, including a small liver, an enlarged lobe of a liver, and 3 birds with excoriation of their feet. "Due to the inconsistency and lack of dose-related gross pathological observations in birds

found dead during the investigation or sacrificed at the end of the test period, the gross pathological observations noted were attributed to factors other than the test material."

Adult Body Weights: No statistical differences were noted between the control group and any of the test groups.

Adult Feed Consumption: No statistical differences were noted between the control group and any of the test groups.

Reproduction Results: No reproductive parameters were adversely affected: "Egg fertility (% viable embryos of eggs set) was 95% in the test groups, compared to 96% in the control group. Live 18-day embryos (%) of viable embryos ranged from 99% to 100% in the test groups, compared to 99% in the control group. Overall hatchability (%) based on live 18-day embryos ranged from 90% to 95% in the test groups, compared to 96% in the control group."

Egg Shell Thickness: No statistically significant differences in average eggshell thickness values per pen were reported. Mean thickness values were 0.230, 0.229, 0.233, and 0.241 mm for the control, 1, 10, and 100 ppm test groups, respectively.

Offspring: No significant differences in body weights occurred at day 1 or day 14. No abnormal behavioral reactions or clinical signs of toxicity were noted. Overall survivability was 92% for the control group and 90-94% in the treatment groups.

15. REVIEWER'S ANALYSIS:

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL:

PARAMETER	DOSE			
	CONTROL	1 ppm	10 ppm	100 ppm
	MEAN	MEAN	MEAN	MEAN
EL	53.58	52.38	58.77	46.14
EC	0.58	0.25	0.54	0.71
ES	49.33	48.25	54.46	42.79
VE	47.33	45.94	51.54	41.21
LE	46.75	45.63	51.38	40.79

NH	45.08	43.50	48.08	37.50
HS	41.42	40.75	43.31	33.71
ES/EL (%)	92.19	91.91	92.89	93.02
(EL-EC) / EL (%)	98.97	99.58	99.22	98.61
VE/ES (%)	95.61	95.37	95.10	94.74
LE/VE (%)	98.64	99.31	99.73	99.11
NH/EL (%)	83.67	82.86	82.46	79.00
NH/ES (%)	90.64	90.21	88.66	85.05
NH/LE (%)	95.92	95.24	93.51	90.28
HS/ES (%)	83.70	84.52	80.34	76.68
HS/NH (%)	92.48	93.67	90.26	90.62
THICK	0.23	0.23	0.24	0.24
HATWT	6.98	7.13	7.12	6.99
SURVWT	32.04	32.18	31.12	31.20
FOOD	7818.25	7634.13	7776.00	8034.57
POSTM	226.08	224.63	215.54	218.79
POSTF	251.00	245.94	243.46	231.79

Statistical Method: ANOVA (SAS) - results attached

Endpoints affected:

Parameter	NOEC (ppm ai)	LOEC (ppm ai)
Female body weight at 23 weeks (POSTF)	10	100

16. **REVIEWER'S CONCLUSIONS:** The only endpoint significantly adversely affected was female body-weight gain at 100 ppm at the end of the study. There was also a significant difference in eggshell thickness between the group dosed at 1 ppm and that dosed at 100 ppm, but no significant differences between the control group and any of the treated groups.

Although not statistically significant, the number of eggs laid by control hens (53.58 eggs/hen) was somewhat more than the number laid by hens dosed at 100 ppm (46.14 eggs/hen), and the number of live embryos resulting in normal hatchlings was greater in the controls (95.92%) than in the 100 ppm group (90.28%).

The study is scientifically sound but does not fulfill the guideline requirement. The study supports the proposed use on soybean (1 application at 0.375 lb ai/acre) but not on turf/lawn, where an unlimited number of applications can be made at up to 0.25 lb ai/acre per application. The study should be repeated at higher test concentrations, or the number of annual applications on turf/lawn should be limited to two.

[illegible]

	L	E	O	V	B	S	T	H	A	R	R	F	P	O	P.
	EE	EE	V	L	N	H	C	T	I	V	S	O	R	S	T
	LC	SE	EH	SH	K	W	D	M	F	F					
60 TRT3	46	2	41	37	36	29	27	0.249	7.2	29.7	7457	186	210	213	208
61 TRT3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
62 TRT3	4	0	4	3	3	2	2	:	6.7	.	7499	190	200	177	186
63 TRT3	51	0	50	48	46	39	:	5.7	.	.	7956	216	241	181	209
64 TRT3	.	.	.	.	.	.	.	.	6.4	29.4	7956	216	241	181	209
	EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL														
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	LEVEL														
	CONTROL			TRT1			TRT2			TRT3					
	MEAN			MEAN			MEAN			MEAN			MEAN		
EL	53.58			52.38			58.77			46.14					
EC	0.58			0.25			0.54			0.71					
ES	49.33			48.25			54.46			42.79					
VE	47.33			45.94			51.54			41.21					
LE	46.75			45.63			51.38			40.79					
NH	45.08			43.50			48.08			37.50					
HS	41.42			40.75			43.31			33.71					
ES/EL (%)	92.19			91.91			92.89			93.02					
(EL-EC)/EL (%)	98.97			99.58			99.22			98.61					
VE/ES (%)	95.61			95.37			95.10			94.74					
LE/VE (%)	98.64			99.31			99.73			99.11					
NH/EL (%)	83.67			82.86			82.46			79.00					
NH/ES (%)	90.64			90.21			88.66			85.05					
NH/LE (%)	95.92			95.24			93.51			90.28					
HS/ES (%)	83.70			84.52			80.34			76.68					
HS/NH (%)	92.48			93.67			90.26			90.62					
THICK	0.23			0.23			0.24			0.24					
HATWT	6.98			7.13			7.12			6.99					
SURVMT	32.04			32.18			31.12			31.20					
FOOD	7818.25			7634.13			7776.00			8034.57					
POSTM	226.08			224.63			215.54			218.79					
POSTF	251.00			245.94			243.46			231.79					

LEVEL=CONTROL

Variable	Label	N	Mean	Std Dev	CV
EL		12	53.583	12.551	23.424
EC		12	0.583	0.669	114.610
ES		12	49.333	11.452	23.214
VE		12	47.333	11.942	25.229
LE		12	46.750	12.144	25.977
NH		12	45.083	12.332	27.354
HS		12	41.417	10.544	25.458
THICK		12	0.230	0.014	6.242
HATWT		13	6.985	0.291	4.168
SURVWT		13	32.038	2.762	8.619
FOOD		12	7818.250	843.081	10.783
PREM		16	211.313	14.277	6.756
POSTM		12	226.083	15.418	6.820
PREF		12	207.750	11.250	5.415
POSTF		12	251.000	17.024	6.782
ES_EL	ES/EL (%)	12	92.189	10.142	12.122
NH_EL	NH/EL (%)	12	83.665	11.186	13.199
ENC_EL	(EL-EC)/EL (%)	12	98.975	6.182	6.466
VE_ES	VE/ES (%)	12	95.614	9.808	10.821
NH_ES	NH/ES (%)	12	90.642	9.250	11.051
HS_ES	HS/ES (%)	12	83.701	9.250	11.051
LE_VE	LE/VE (%)	12	98.638	2.457	2.491
NH_LE	NH/LE (%)	12	95.919	5.287	5.512
HS_NH	HS/NH (%)	12	92.479	5.126	5.543

LEVEL=TRT1

Variable	Label	N	Mean	Std Dev	CV
EL		16	52.375	13.603	25.973
EC		16	0.250	0.447	178.885
ES		16	48.250	12.820	26.156
VE		16	45.938	12.234	26.631
LE		16	45.625	12.170	26.675
NH		16	43.500	11.725	26.953
HS		16	40.750	11.121	27.290
THICK		16	0.229	0.008	3.298
HATWT		16	7.125	0.463	6.493
SURVWT		16	32.181	2.282	7.090
FOOD		16	7634.125	759.027	9.943
PREM		16	205.500	10.795	5.253
POSTM		16	224.625	14.560	6.482
PREF		16	211.125	12.436	5.890
POSTF		16	245.938	32.689	13.292
ES_EL	ES/EL (%)	16	91.905	3.181	3.462
NH_EL	NH/EL (%)	16	82.857	5.666	6.838
ENC_EL	(EL-EC)/EL (%)	16	99.584	0.744	0.747
VE_ES	VE/ES (%)	16	95.372	5.219	5.472
NH_ES	NH/ES (%)	16	90.209	6.146	6.813
HS_ES	HS/ES (%)	16	84.518	7.074	8.370
LE_VE	LE/VE (%)	16	99.314	1.113	1.121
NH_LE	NH/LE (%)	16	95.240	3.695	3.880
HS_NH	HS/NH (%)	16	93.675	4.201	4.485

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL.
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LEVEL=TRT2

Variable	Label	N	Mean	Std Dev	CV
EL		13	58.769	11.256	19.152
EC		13	0.538	1.391	258.396
ES		13	54.462	10.022	18.402
VE		13	51.538	9.888	19.185
LE		13	51.385	9.794	19.060
NH		13	48.077	9.903	20.599
HS		13	43.308	9.505	22.155
THICK		12	0.235	0.012	4.985
HATWT		13	7.123	0.242	3.398
SURVWT		13	31.123	2.345	7.533
FOOD		13	7776.000	831.989	10.699
PREM		13	208.692	13.823	6.623
POSTM		13	215.538	26.403	12.250
PREF		13	200.077	15.135	7.565
POSTF		13	243.462	19.277	7.918
ES_EL	ES/EL (%)	13	92.887	2.682	2.887
NH_EL	NH/EL (%)	13	82.461	11.260	13.655
ENC_EL	(EL-EC)/EL (%)	13	99.216	1.970	1.986
VE_ES	VE/ES (%)	13	95.104	9.408	9.892
NH_ES	NH/ES (%)	13	88.655	10.907	12.502
HS_ES	HS/ES (%)	13	80.341	13.818	17.200
LE_VE	LE/VE (%)	13	99.735	0.956	0.959
NH_LE	NH/LE (%)	13	93.509	7.129	7.624
HS_NH	HS/NH (%)	13	90.257	7.950	8.808

LEVEL=TRT3

Variable	Label	N	Mean	Std Dev	CV
EL		14	46.143	16.984	36.806
EC		14	0.714	0.994	139.229
ES		14	42.786	16.010	37.420
VE		14	41.214	16.025	38.882
LE		14	40.786	15.803	38.745
NH		14	37.500	15.175	40.466
HS		14	33.714	13.601	40.342
THICK		12	0.241	0.011	4.379
HATWT		15	6.987	0.488	6.988
SURVWT		13	31.200	1.088	3.487
FOOD		14	8034.571	780.224	9.711
PREM		14	206.500	13.131	6.359
POSTM		14	218.786	13.296	6.077
PREF		14	209.000	17.119	8.191
POSTF		14	231.786	21.659	9.344
ES_EL	ES/EL (%)	14	93.025	3.307	3.555
NH_EL	NH/EL (%)	14	79.002	12.349	15.631
ENC_EL	(EL-EC)/EL (%)	14	98.608	1.996	2.024
VE_ES	VE/ES (%)	14	94.740	8.437	8.905
NH_ES	NH/ES (%)	14	85.048	13.349	15.696
HS_ES	HS/ES (%)	14	76.677	11.593	15.119
LE_VE	LE/VE (%)	14	99.106	1.350	1.362
NH_LE	NH/LE (%)	14	90.281	10.054	11.136
HS_NH	HS/NH (%)	14	90.622	7.289	8.043

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL
1. ANALYSIS OF EGGS LAID

08:34 Friday, August 18, 1995

General Linear Models Procedure
Class Level Information

Class Levels Values

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

1. ANALYSIS OF EGGS LAID

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General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

LEVEL	CONTROL	L2	TRT1	L3	TRT2	L4	TRT3

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

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	1090.8386	363.6129	1.90	0.1419
Error	51	9778.6886	191.7390		
Corrected Total	54	10869.5273			

R-Square	C.V.	Root MSE	EL Mean
0.100358	26.34328	13.847	52.564

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	1090.8386	363.6129	1.90	0.1419

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

1. ANALYSIS OF EGGS LAID

08:34 Friday, August 18, 1995

General Linear Models Procedure

Least Squares Means

LEVEL	EL	LSMEAN	Pr > T HO: LSMEAN(I)=LSMEAN(J)
CONTROL	53.583333	1	0.8202
TRT1	52.375000	2	0.8202
TRT2	58.7692308	3	0.3539
TRT3	46.1428571	4	0.1780

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

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= 51 MSE= 191.739

Critical Value of Studentized Range= 3.756

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	-9.536	5.186	19.908
TRT2 - TRT1	-7.337	6.394	20.126
TRT2 - TRT3	-1.538	12.626	26.791
CONTROL - TRT2	-19.908	-5.186	9.536
CONTROL - TRT1	-12.835	1.208	15.252
CONTROL - TRT3	-7.027	7.440	21.908
TRT1 - TRT2	-20.126	-6.394	7.337
TRT1 - CONTROL	-15.252	-1.208	12.835
TRT1 - TRT3	-7.226	6.232	19.690
TRT3 - TRT2	-26.791	-12.626	1.538
TRT3 - CONTROL	-21.908	-7.440	7.027
TRT3 - TRT1	-19.690	-6.232	7.226

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

1. ANALYSIS OF EGGS LAID

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 191.739

Critical Value of Dunnett's T= 2.100

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	-6.456	5.186	16.828
TRT1 - CONTROL	-12.314	-1.208	9.897
TRT3 - CONTROL	-18.881	-7.440	4.000

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

2. ANALYSIS OF EGGS CRACKED

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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 = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

2. ANALYSIS OF EGGS CRACKED

08:34 Friday, August 18, 1995

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Effect Coefficients

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

2. ANALYSIS OF EGGS CRACKED

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General Linear Models Procedure

Dependent Variable: EC

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	1.7408758	0.5802919	0.67	0.5728
Error	51	44.0045788	0.8628349		
Corrected Total	54	45.7454545			

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	1.7408758	0.5802919	0.67	0.5728

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	1.7408758	0.5802919	0.67	0.5728

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

2. ANALYSIS OF EGGS CRACKED

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General Linear Models Procedure

Least Squares Means

LEVEL	EC	LSMEAN	1/j	1	2	3	4
CONTROL	0.58333333	1	0.3518	0.9044	0.9044	0.7216	
TRT1	0.25000000	2	0.3518	0.4095	0.4095	0.1780	
TRT2	0.53846154	3	0.9044	0.4095	0.4095	0.6252	
TRT3	0.71428571	4	0.7216	0.1780	0.6252		

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

2. ANALYSIS OF EGGS CRACKED

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 0.862835

Critical Value of Studentized Range= 3.756

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT3 - CONTROL	-0.8395	0.1310	1.1014
TRT3 - TRT2	-0.7744	0.1758	1.1260
TRT3 - TRT1	-0.4385	0.4643	1.3671
CONTROL - TRT3	-1.1014	-0.1310	0.8395
CONTROL - TRT2	-0.9427	0.0449	1.0324
CONTROL - TRT1	-0.6087	0.3333	1.2754
TRT2 - TRT3	-1.1260	-0.1758	0.7744
TRT2 - CONTROL	-1.0324	-0.0449	0.9427
TRT2 - TRT1	-0.6327	0.2885	1.2096
TRT1 - TRT3	-1.3671	-0.4643	0.4385
TRT1 - CONTROL	-1.2754	-0.3333	0.6087
TRT1 - TRT2	-1.2096	-0.2885	0.6327

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

2. ANALYSIS OF EGGS CRACKED

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 0.862835

Critical Value of Dunnnett's T= 2.100

File:A:\BOBWHITE.OUT Page 9
Comparisons significant at the 0.05 level are indicated by '****'.

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	Pr > F
TRT3 - CONTROL	-0.6365	0.1310	0.8984	0.1437
TRT2 - CONTROL	-0.8258	-0.0449	0.7361	
TRT1 - CONTROL	-1.0783	-0.3333	0.4117	

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL 3. ANALYSIS OF EGGS SET *****

08:34 Friday, August 18, 1995

General Linear Models Procedure Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL 3. ANALYSIS OF EGGS SET *****

08:34 Friday, August 18, 1995

General Linear Models Procedure Type I Estimable Functions for: LEVEL

Effect Coefficients

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL 3. ANALYSIS OF EGGS SET *****

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: ES				
Source	DF	Sum of Squares	Mean Square	F Value Pr > F
Model	3	928.27269	309.42423	1.89 0.1437
Error	51	8369.25458	164.10303	
Corrected Total	54	9297.52727		
R-Square		C.V.	Root MSE	ES Mean
0.099841		26.37832	12.810	48.564

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Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	928.27269	309.42423	1.89	0.1437

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL 3. ANALYSIS OF EGGS SET *****

08:34 Friday, August 18, 1995

General Linear Models Procedure Least Squares Means

LEVEL	ES	Pr > T	H0: LSMEAN(1)=LSMEAN(J)
	LSMEAN	i/j	1 2 3 4
CONTROL	49.333333	1	0.8256 0.3220 0.1997
TRT1	48.250000	2	0.8256 0.1999 0.2492
TRT2	54.461538	3	0.3220 0.1999 0.0218
TRT3	42.785714	4	0.1997 0.2492 0.0218

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL 3. ANALYSIS OF EGGS SET *****

08:34 Friday, August 18, 1995

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= 51 MSE= 164.103
Critical Value of Studentized Range= 3.756

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

LEVEL Comparison	Simultaneous		Difference		Simultaneous Upper Confidence Limit
	Lower Confidence Limit	Mean	Between Means	Upper Confidence Limit	
TRT2 - CONTROL	-8.491	5.128	18.748		
TRT2 - TRT1	-6.492	6.212	18.915		
TRT2 - TRT3	-1.428	11.676	24.780		
CONTROL - TRT2	-18.748	-5.128	8.491		
CONTROL - TRT1	-11.909	1.083	14.076		
CONTROL - TRT3	-6.836	6.548	19.932		
TRT1 - TRT2	-18.915	-6.212	6.492		
TRT1 - CONTROL	-14.076	-1.083	11.909		
TRT1 - TRT3	-6.986	5.464	17.915		
TRT3 - TRT2	-24.780	-11.676	1.428		
TRT3 - CONTROL	-19.932	-6.548	6.836		
TRT3 - TRT1	-17.915	-5.464	6.986		

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL 3. ANALYSIS OF EGGS SET *****

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 164.103
Critical Value of Dunnett's T= 2.100

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

LEVEL Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT2 - CONTROL	-5.642	5.128	15.898
TRT1 - CONTROL	-11.357	-1.083	9.191
TRT3 - CONTROL	-17.132	-6.548	4.036

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

4. ANALYSIS OF VIABLE EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

4. ANALYSIS OF VIABLE EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Effect Coefficients

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

4. ANALYSIS OF VIABLE EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
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Model	3	733.53519	244.51173	1.50	0.2262
Error	51	8325.19208	163.23906		
Corrected Total	54	9058.72727			
R-Square		C.V.	Root MSE		VE Mean
	0.080976	27.55717	12.777		46.364

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	733.53519	244.51173	1.50	0.2262

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

4. ANALYSIS OF VIABLE EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure
Least Squares Means

LEVEL	VE LSMEAN	Pr > T 1/j	H0: LSMEAN(i)=LSMEAN(j) 2 3 4
CONTROL	47.3333333	1	0.7760 0.4148 0.2290
TRT1	45.9375000	2	0.7760 0.2458 0.3172
TRT2	51.5384615	3	0.4148 0.2458 0.0409
TRT3	41.2142857	4	0.2290 0.3172 0.0409

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

4. ANALYSIS OF VIABLE EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 163.2391

Critical Value of Studentized Range= 3.756

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

LEVEL Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT2 - CONTROL	-9.379	4.205	17.789
TRT1 - TRT1	-7.069	5.601	18.271
TRT2 - TRT3	-2.745	10.324	23.394
CONTROL - TRT2	-17.789	-4.205	9.379
CONTROL - TRT1	-11.562	1.396	14.354
CONTROL - TRT3	-7.230	6.119	19.468
TRT1 - TRT2	-18.271	-5.601	7.069
TRT1 - CONTROL	-14.354	-1.396	11.562

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TRT1 - TRT3 4.723 17.141
 TRT3 - TRT2 -23.394 2.745
 TRT3 - CONTROL -10.324 7.230
 TRT3 - TRT1 -6.119 7.695
 TRT3 - TRT1 -17.141 -4.723

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

4. ANALYSIS OF VIABLE EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 163.2391
 Critical Value of Dunnett's T= 2.100

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

LEVEL	Comparison	Simultaneous		Difference		Simultaneous	
		Lower	Upper	Confidence	Between	Confidence	Upper
		Limit	Limit	Means	Means	Limit	Limit
TRT2	- CONTROL	-6.537	4.205	4.205	14.947		
TRT1	- CONTROL	-11.643	-1.396	-1.396	8.851		
TRT3	- CONTROL	-16.675	-6.119	-6.119	4.437		

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

08:34 Friday, August 18, 1995

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: LE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	766.56593	255.52198	1.58	0.2053
Error	51	8241.43407	161.59675		

Corrected Total 54 9008.00000

R-Square

C.V. 27.63494

Root MSE

12.712

LE Mean

46.000

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	766.56593	255.52198	1.58	0.2053

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure

Least Squares Means

LEVEL	LE	LSMEAN	Pr > T H0: LSMEAN(i)=LSMEAN(j)			
			1	2	3	4
CONTROL	46.7500000	1	0.8177	0.3667	0.2385	
TRT1	45.6250000	2	0.8177	0.2306	0.3031	
TRT2	51.3846154	3	0.3667	0.2306	0.0351	
TRT3	40.7857143	4	0.2385	0.3031	0.0351	

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

08:34 Friday, August 18, 1995

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= 51 MSE= 161.5967

Critical Value of Studentized Range= 3.756

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

LEVEL	Comparison	Simultaneous		Difference		Simultaneous	
		Lower	Upper	Confidence	Between	Confidence	Upper
		Limit	Limit	Means	Means	Limit	Limit

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TRT2 - CONTROL	-8.881	4.635	18.150
TRT2 - TRT1	-6.846	5.760	18.366
TRT2 - TRT3	-2.405	10.599	23.602
CONTROL - TRT2	-18.150	-4.635	8.881
CONTROL - TRT1	-11.768	1.125	14.018
CONTROL - TRT3	-7.317	5.964	19.246
TRT1 - TRT2	-18.366	-5.760	6.846
TRT1 - CONTROL	-14.018	-1.125	11.768
TRT1 - TRT3	-7.516	4.839	17.194
TRT3 - TRT2	-23.602	-10.599	2.405
TRT3 - CONTROL	-19.246	-5.964	7.317
TRT3 - TRT1	-17.194	-4.839	7.516

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 161.5967
Critical Value of Dunnett's T= 2.100

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

LEVEL Comparison	Simultaneous		Simultaneous Upper Limit
	Lower Confidence Limit	Difference Between Means	
TRT2 - CONTROL	-6.053	4.635	15.322
TRT1 - CONTROL	-11.320	-1.125	9.070
TRT3 - CONTROL	-16.467	-5.964	4.539

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

6. ANALYSIS OF NORMAL HATCHLINGS

08:34 Friday, August 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

6. ANALYSIS OF NORMAL HATCHLINGS

08:34 Friday, August 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

6. ANALYSIS OF NORMAL HATCHLINGS

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: NH

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	805.86026	268.62009	1.73	0.1719
Error	51	7905.33974	155.00666		
Corrected Total	54	8711.20000			

R-Square	C.V.	Root MSE	NH Mean
0.092509	28.68702	12.450	43.400

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	805.86026	268.62009	1.73	0.1719

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

6. ANALYSIS OF NORMAL HATCHLINGS

08:34 Friday, August 18, 1995

General Linear Models Procedure
Least Squares Means

LEVEL	NH LSMEAN	Pr > T , H0: LSMEAN(i)=LSMEAN(j)
CONTROL	45.083333	1 0.7405 0.5507 0.1277
TRT1	43.500000	2 0.7405 0.3295 0.1938
TRT2	48.076923	3 0.5507 0.3295 0.0319
TRT3	37.500000	4 0.1277 0.1938 0.0319

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

6. ANALYSIS OF NORMAL HATCHLINGS

08:34 Friday, August 18, 1995

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= 51 MSE= 155.0067
Critical Value of Studentized Range= 3.756

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

LEVEL Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT2 - CONTROL	-10.243	2.994	16.230
TRT2 - TRT1	-7.769	4.577	16.923
TRT2 - TRT3	-2.159	10.577	23.312
CONTROL - TRT1	-16.230	-2.994	10.243
CONTROL - TRT2	-11.044	1.583	14.210
CONTROL - TRT3	-5.424	7.583	20.591
TRT1 - TRT2	-16.923	-4.577	7.769
TRT1 - CONTROL	-14.210	-1.583	11.044
TRT1 - TRT3	-6.101	6.000	18.101
TRT3 - TRT2	-23.312	-10.577	2.159
TRT3 - CONTROL	-20.591	-7.583	5.424
TRT3 - TRT1	-18.101	-6.000	6.101

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

6. ANALYSIS OF NORMAL HATCHLINGS

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 155.0067
Critical Value of Dunnnett's T= 2.100

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

LEVEL Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT2 - CONTROL	-7.474	2.994	13.461
TRT2 - TRT1	-11.569	-1.583	8.402
TRT2 - CONTROL	-17.870	-7.583	2.703

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

7. ANALYSIS OF 14-DAY-OLD SURVIVORS

08:34 Friday, August 18, 1995

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

7. ANALYSIS OF 14-DAY-OLD SURVIVORS

08:34 Friday, August 18, 1995

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Coefficients

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

7. ANALYSIS OF 14-DAY-OLD SURVIVORS

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: HS

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	723.80241	241.26747	1.87	0.1468
Error	51	6587.54304	129.16751		

Corrected Total

	54	7311.34545			
R-Square		C.V.	Root MSE	HS Mean	
	0.098997	28.62112	11.365	39.709	

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	723.80241	241.26747	1.87	0.1468

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

7. ANALYSIS OF 14-DAY-OLD SURVIVORS

08:34 Friday, August 18, 1995

General Linear Models Procedure

Least Squares Means

LEVEL	LSMEAN	HS	Pr > T	H0: LSMEAN(i)=LSMEAN(j)
			i/j	1 2 3 4
CONTROL	41.4166667	1	0.8785	0.6794 0.0910
TRT1	40.7500000	2	0.8785	0.5494 0.0968
TRT2	43.3076923	3	0.6794	0.5494 0.0330
TRT3	33.7142857	4	0.0910	0.0968 0.0330

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

7. ANALYSIS OF 14-DAY-OLD SURVIVORS

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 129.1675
Critical Value of Studentized Range= 3.756

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

LEVEL Comparison	Simultaneous Lower Confidence Limit		Difference Between Means		Simultaneous Upper Confidence Limit	
	Lower Limit	Upper Limit	Lower Limit	Upper Limit	Lower Limit	Upper Limit
TRT2 - CONTROL	-10.192	1.891	1.891	13.974	13.974	
TRT2 - TRT1	-8.713	2.558	2.558	13.828	13.828	
TRT2 - TRT3	-2.032	9.593	9.593	21.219	21.219	
CONTROL - TRT2	-13.974	-1.891	-1.891	10.192	10.192	
CONTROL - TRT1	-10.860	0.667	0.667	12.193	12.193	
CONTROL - TRT3	-4.172	7.702	7.702	19.577	19.577	
TRT1 - TRT2	-13.828	-2.558	-2.558	8.713	8.713	
TRT1 - CONTROL	-12.193	-0.667	-0.667	10.860	10.860	
TRT1 - TRT3	-4.010	7.036	7.036	18.082	18.082	
TRT3 - TRT2	-21.219	-9.593	-9.593	2.032	2.032	
TRT3 - CONTROL	-19.577	-7.702	-7.702	4.172	4.172	
TRT3 - TRT1	-18.082	-7.036	-7.036	4.010	4.010	

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

7. ANALYSIS OF 14-DAY-OLD SURVIVORS

08:34 Friday, August 18, 1995

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= 51 MSE= 129.1675
Critical Value of Dunnnett's T= 2.100

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

LEVEL Comparison	Simultaneous Lower Confidence Limit		Difference Between Means		Simultaneous Upper Confidence Limit	
	Lower Limit	Upper Limit	Lower Limit	Upper Limit	Lower Limit	Upper Limit
TRT2 - CONTROL	-7.664	1.891	1.891	11.446	11.446	
TRT1 - CONTROL	-9.782	-0.667	-0.667	8.448	8.448	
TRT3 - CONTROL	-17.092	-7.702	-7.702	1.688	1.688	

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

8. ANALYSIS OF EGGS SET/EGGS LAID

08:34 Friday, August 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

8. ANALYSIS OF EGGS SET/EGGS LAID

08:34 Friday, August 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Coefficients

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

8. ANALYSIS OF EGGS SET/EGGS LAID

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: RESPONSE
Weight: EL

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	413.19862	137.73287	0.33	0.8060
Error	51	21497.05337	421.51085		
Corrected Total	54	21910.25199			

R-Square	C.V.	Root MSE	RESPONSE Mean
0.018859	27.68083	20.531	74.169

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	413.19862	137.73287	0.33	0.8060

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

8. ANALYSIS OF EGGS SET/EGGS LAID

08:34 Friday, August 18, 1995

General Linear Models Procedure

Least Squares Means

LEVEL	RESPONSE	Pr > T	H0: LSMEAN(I)=LSMEAN(J)	1	2	3	4
CONTROL	73.7851185	1	0.9731	0.5356	0.5356	0.4543	
TRT1	73.8216141	2	0.9731	0.5304	0.4458		
TRT2	74.4703440	3	0.5356	0.5304	0.8724		
TRT3	74.6475473	4	0.4543	0.4458	0.8724		

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

8. ANALYSIS OF EGGS SET/EGGS LAID

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 421.5109

Critical Value of Studentized Range= 3.756

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	-20.8241	0.1772	21.1786
TRT3	- TRT1	-19.1284	0.8259	20.7803
TRT3	- CONTROL	-20.5879	0.8624	22.3127
TRT2	- TRT3	-21.1786	-0.1772	20.8241
TRT2	- TRT1	-19.7108	0.6487	21.0083
TRT2	- CONTROL	-21.1425	0.6852	22.5130
TRT1	- TRT3	-20.7803	-0.8259	19.1284
TRT1	- TRT2	-21.0083	-0.6487	19.7108
TRT1	- CONTROL	-20.7858	0.0365	20.8588
CONTROL	- TRT3	-22.3127	-0.8624	20.5879
CONTROL	- TRT2	-22.5130	-0.6852	21.1425
CONTROL	- TRT1	-20.8588	-0.0365	20.7858

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

8. ANALYSIS OF EGGS SET/EGGS LAID

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 421.5109

Critical Value of Dunnett's T= 2.100

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

Simultaneous

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT3	- CONTROL	-16.1002	0.8624	17.8251
TRT2	- CONTROL	-16.5759	0.6852	17.9463
TRT1	- CONTROL	-16.4296	0.0365	16.5026

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

08:34 Friday, August 18, 1995

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

08:34 Friday, August 18, 1995

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Coefficients

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: RESPONSE

Weight:

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	3973.6298	1324.5433	0.31	0.8166
Error	51	216470.9268	4244.5280		
Corrected Total	54	220444.5566			
R-Square		C.V.	Root MSE	RESPONSE Mean	
0.018026		80.09994	65.150		81.336

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Source

LEVEL	DF	Type I SS	Mean Square	F Value	Pr > F
3	3	3973.6298	1324.5433	0.31	0.8166

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

08:34 Friday, August 18, 1995

General Linear Models Procedure Least Squares Means

LEVEL	RESPONSE	LSMEAN	Pr > t	H0: LSMEAN(i)=LSMEAN(j)
				1 2 3 4
CONTROL	82.4327281	1	0.4395	0.7192 0.9509
TRT1	79.659256	2	0.4395	0.6683 0.4007
TRT2	81.1208162	3	0.7192	0.6683 0.6710
TRT3	82.6663065	4	0.9509	0.4007 0.6710

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 4244.528
Critical Value of Studentized Range= 3.756

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

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT3	- CONTROL	-67.834	0.234	68.302
TRT3	- TRT2	-65.098	1.545	68.189
TRT3	- TRT1	-60.315	3.006	66.327
CONTROL	- TRT3	-68.302	-0.234	67.834
CONTROL	- TRT2	-67.954	1.312	70.578
CONTROL	- TRT1	-63.303	2.773	68.848
TRT2	- TRT3	-68.189	-1.545	65.098
TRT2	- CONTROL	-70.578	-1.312	67.954
TRT2	- TRT1	-63.146	1.461	66.068
TRT1	- TRT3	-66.327	-3.006	60.315
TRT1	- CONTROL	-68.848	-2.773	63.303
TRT1	- TRT2	-66.068	-1.461	63.146

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

08:34 Friday, August 18, 1995

File:A:\BOBWHITE.OUT Page 24
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= 51 MSE= 4244.528
Critical Value of Dunnnett's T= 2.100

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

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT3	- CONTROL	-53.594	0.234	54.061
TRT2	- CONTROL	-56.087	-1.312	53.463
TRT1	- CONTROL	-55.024	-2.773	49.479

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

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

08:34 Friday, August 18, 1995

General Linear Models Procedure Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

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

08:34 Friday, August 18, 1995

General Linear Models Procedure Type I Estimable Functions for: LEVEL

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

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

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: RESPONSE
Weight: VE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
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Model	3	3151.2363	1050.4121	1.19	0.3244
Error	51	45180.7900	885.8978		
Corrected Total	54	48332.0263			

R-Square	C.V.	Root MSE	RESPONSE Mean
0.065200	34.09305	29.764	87.302

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	3151.2363	1050.4121	1.19	0.3244

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIALE EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure
Least Squares Means

LEVEL	RESPONSE	Pr > t	H0: LSMEAN(i)=LSMEAN(j)
	LSMEAN	1/j	2 3 4
CONTROL	86.4444975	1	0.6274 0.1328 0.8856
TRT1	87.2565742	2	0.6274 0.2678 0.5223
TRT2	89.0377487	3	0.1328 0.2678 0.0982
TRT3	86.1900110	4	0.8856 0.5223 0.0982

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIALE EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 885.8978
Critical Value of Studentized Range= 3.756

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

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT2	- TRT1	-27.735	1.781	31.297
TRT2	- CONTROL	-29.051	2.593	34.238
TRT2	- TRT3	-27.599	2.848	33.294
TRT1	- TRT2	-31.297	-1.781	27.735
TRT1	- CONTROL	-29.375	0.812	30.999
TRT1	- TRT3	-27.862	1.067	29.995
CONTROL	- TRT2	-34.238	-2.593	29.051
CONTROL	- TRT1	-30.999	-0.812	29.375

CONTROL - TRT3	-30.843	0.254	31.352
TRT3 - TRT2	-33.294	-2.848	27.599
TRT3 - TRT1	-29.995	-1.067	27.862
TRT3 - CONTROL	-31.352	-0.254	30.843

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIALE EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 885.8978
Critical Value of Dunnett's T= 2.100

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	-22.431	2.593	27.617
TRT1	- CONTROL	-23.059	0.812	24.683
TRT3	- CONTROL	-24.846	-0.254	24.337

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: RESPONSE

Weight:

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	15173.295	5057.765	2.22	0.0967
Error	51	116017.643	2274.856		
Corrected Total	54	131190.938			

R-Square	C.V.	Root MSE	RESPONSE Mean
0.115658	61.09926	47.695	78.062

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	15173.295	5057.765	2.22	0.0967

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure

Least Squares Means

LEVEL	RESPONSE	LSMEAN	Pr > T	H0: LSMEAN(i)=LSMEAN(j)
CONTROL	82.0682145	1	0.1863	0.0564 0.0181
TRT1	78.4808021	2	0.1863	0.4977 0.2160
TRT2	76.7364634	3	0.0564	0.4977 0.5602
TRT3	75.1422813	4	0.0181	0.2160 0.5602

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 2274.856
Critical Value of Studentized Range= 3.756

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

LEVEL	Simultaneous Lower Confidence	Difference Between	Simultaneous Upper Confidence
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Comparison	Means	Limit	Limit
CONTROL - TRT1	3.587	-44.785	51.960
CONTROL - TRT2	5.332	-45.377	56.040
CONTROL - TRT3	6.926	-42.906	56.758
TRT1 - CONTROL	-3.587	-51.960	44.785
TRT1 - TRT2	1.744	-45.553	49.042
TRT1 - TRT3	3.339	-43.018	49.695
TRT2 - CONTROL	-5.332	-56.040	45.377
TRT2 - TRT1	-1.744	-49.042	45.553
TRT2 - TRT3	-1.594	-47.195	50.383
TRT3 - CONTROL	-6.926	-56.758	42.906
TRT3 - TRT1	-3.339	-49.695	43.018
TRT3 - TRT2	-1.594	-50.383	47.195

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 2274.856

Critical Value of Dunnnett's T= 2.100

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

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
TRT1	- CONTROL	-41.840	-3.587	34.665
TRT2	- CONTROL	-45.431	-5.332	34.768
TRT3	- CONTROL	-46.332	-6.926	32.480

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

08:34 Friday, August 18, 1995

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

08:34 Friday, August 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

*****08:34 Friday, August 18, 1995*****

General Linear Models Procedure

Dependent Variable: RESPONSE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	1957.4342	652.4781	0.28	0.8390
Error	51	118501.3205	2323.5553		
Corrected Total	54	120458.7547			

R-Square	C.V.	Root MSE	RESPONSE Mean
0.016250	73.15305	48.203	65.894

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	1957.4342	652.4781	0.28	0.8390

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

*****08:34 Friday, August 18, 1995*****

General Linear Models Procedure

Least Squares Means

LEVEL	RESPONSE	LSMEAN	Pr > T H0: LSMEAN(i)=LSMEAN(j)
CONTROL	67.2872136	1	0.5898 0.4934 0.3850
TRT1	65.9160343	2	0.5898 0.8662 0.6989
TRT2	65.5076325	3	0.5934 0.8662 0.8248
TRT3	64.9343768	4	0.3850 0.6989 0.8248

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

*****08:34 Friday, August 18, 1995*****

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: RESPONSE
NOTE: This test controls the type I experimentwise error rate.Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 2323.555
Critical Value of Studentized Range= 3.756

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	-47.517	1.371	50.259
CONTROL - TRT2	-49.469	1.780	53.028
CONTROL - TRT3	-48.009	2.353	52.715
TRT1 - CONTROL	-50.259	-1.371	47.517
TRT1 - TRT2	-47.593	0.408	48.210
TRT1 - TRT3	-45.868	0.982	47.832
TRT2 - CONTROL	-53.028	-1.780	49.469
TRT2 - TRT1	-48.210	-0.408	47.393
TRT2 - TRT3	-48.735	0.573	49.881
TRT3 - CONTROL	-52.715	-2.353	48.009
TRT3 - TRT1	-47.832	-0.982	45.868
TRT3 - TRT2	-49.881	-0.573	48.735

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

*****08:34 Friday, August 18, 1995*****

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 2323.555
Critical Value of Dunnnett's T= 2.100

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	-40.031	-1.371	37.289
TRT2 - CONTROL	-42.306	-1.780	38.747
TRT3 - CONTROL	-42.179	-2.353	37.473

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

*****08:34 Friday, August 18, 1995*****

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL 13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

*****08:34 Friday, August 18, 1995*****

General Linear Models Procedure Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL 13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

*****08:34 Friday, August 18, 1995*****

General Linear Models Procedure

Dependent Variable: RESPONSE
Weight: NH

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	4811.5050	1603.8350	0.64	0.5932
Error	51	127940.7951	2508.6430		
Corrected Total	54	132752.3000			

R-Square 0.036244
C.V. 67.13277
Root MSE 50.086
RESPONSE Mean 74.586

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	4811.5050	1603.8350	0.64	0.5932

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL 13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

*****08:34 Friday, August 18, 1995*****

General Linear Models Procedure Least Squares Means

LEVEL	RESPONSE LSMEAN	Pr > T i/j	H0: LSMEAN(i)=LSMEAN(j) 1 2 3 4
CONTROL	75.0309129	1	0.6114 0.5568 0.5387
TRT1	76.4987265	2	0.6114 0.2506 0.2503
TRT2	73.2913548	3	0.5568 0.2506 0.9572
TRT3	75.1316028	4	0.5387 0.2503 0.9572

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL 13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

*****08:34 Friday, August 18, 1995*****

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 2508.643
Critical Value of Studentized Range= 3.756

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	-49.330	1.468	52.266
TRT1 - TRT2	-46.461	3.207	52.876
TRT1 - TRT3	-45.313	3.367	52.047
CONTROL - TRT1	-52.266	-1.468	49.330
CONTROL - TRT2	-51.511	-1.740	54.990
CONTROL - TRT3	-50.430	1.899	54.229
TRT2 - TRT1	-52.876	-3.207	46.461
TRT2 - CONTROL	-54.990	-1.740	51.511
TRT2 - TRT3	-51.075	0.160	51.394
TRT3 - TRT1	-52.047	-3.367	45.313
TRT3 - CONTROL	-54.229	-1.899	50.430
TRT3 - TRT2	-51.394	-0.160	51.075

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL 13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS

*****08:34 Friday, August 18, 1995*****

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 2508.643
Critical Value of Dunnnett's T= 2.100

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	-38.702	1.468	41.638
TRT2 - CONTROL	-43.849	-1.740	40.370
TRT3 - CONTROL	-43.281	-1.899	39.482

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

*****08:34 Friday, August 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

*****08:34 Friday, August 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

*****08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: RESPONSE

Weight: EL

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	3861.3677	1287.1226	1.17	0.3308
Error	51	56171.5081	1101.4021		
Corrected Total	54	60032.8758			

Source	R-Square	C.V.	Root MSE	RESPONSE Mean
LEVEL	0.064321	38.32771	33.187	86.588

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	3861.3677	1287.1226	1.17	0.3308

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

08:34 Friday, August 18, 1995

General Linear Models Procedure
Least Squares Means

LEVEL	RESPONSE	Pr > T	H0: LSMEAN(1)=LSMEAN(J)
	LSMEAN	i/j	1 2 3 4
CONTROL	85.6135447	1	0.2072 0.3366 0.7640
TRT1	87.8363039	2	0.2072 0.7645 0.1157
TRT2	87.3364176	3	0.3366 0.7645 0.2043
TRT3	85.0555661	4	0.7640 0.1157 0.2043

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

*****08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 1101.402
Critical Value of Studentized Range= 3.756

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

LEVEL Comparison	Simultaneous		Difference Between Means		Simultaneous	
	Lower Limit	Upper Limit	Lower Limit	Upper Limit	Lower Limit	Upper Limit
TRT1 - TRT2	-32.411	0.500	0.500	33.411	0.500	33.411
TRT1 - CONTROL	-31.436	2.223	2.223	35.882	2.223	35.882
TRT1 - TRT3	-29.475	2.781	2.781	35.036	2.781	35.036
TRT2 - TRT1	-33.411	-0.500	-0.500	32.411	-0.500	32.411
TRT2 - CONTROL	-33.561	1.723	1.723	37.007	1.723	37.007
TRT2 - TRT3	-31.667	2.281	2.281	36.229	2.281	36.229
CONTROL - TRT1	-35.882	-2.223	-2.223	31.436	-2.223	31.436
CONTROL - TRT2	-37.007	-1.723	-1.723	33.561	-1.723	33.561
CONTROL - TRT3	-34.116	0.558	0.558	35.232	0.558	35.232
TRT3 - TRT1	-35.036	-2.781	-2.781	29.475	-2.781	29.475
TRT3 - TRT2	-36.229	-2.281	-2.281	31.667	-2.281	31.667
TRT3 - CONTROL	-35.232	-0.558	-0.558	34.116	-0.558	34.116

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID

*****08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 1101.402
Critical Value of Dunnnett's T= 2.100

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	TRT2	TRT3	CONTROL	TRT1
CONTROL	-24.394	2.223	28.840			
TRT1	-26.179	1.723	29.625			
TRT2	-27.978	-0.558	26.862			
TRT3						

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL
15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

08:34 Friday, August 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL
15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

08:34 Friday, August 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL
15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: RESPONSE					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	10633.653	3544.551	1.01	0.3971
Error	51	17944.815	3518.526		
Corrected Total	54	190078.468			
R-Square		C.V.	Root MSE	RESPONSE Mean	

0.055943 81.70146 59.317 72.602

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	10633.653	3544.551	1.01	0.3971

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL
15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

08:34 Friday, August 18, 1995

General Linear Models Procedure
Least Squares Means

LEVEL	RESPONSE LSMEAN	Pr > T 1/j	H0: LSMEAN(i)=LSMEAN(j) 2 3 4
CONTROL	76.1246936	1	0.2562 0.1800 0.1092
TRT1	72.4039369	2	0.2562 0.8041 0.5625
TRT2	71.6342770	3	0.1800 0.8041 0.7367
TRT3	70.5210073	4	0.1092 0.5625 0.7367

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL
15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 3518.526
Critical Value of Studentized Range= 3.756

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	TRT2	TRT3	CONTROL	TRT1
CONTROL - TRT1	-56.439	3.721	63.880			
CONTROL - TRT2	-58.574	4.490	67.555			
CONTROL - TRT3	-56.370	5.604	67.578			
TRT1 - TRT2	-63.880	-3.721	56.439			
TRT1 - TRT3	-58.053	0.770	59.592			
TRT2 - TRT3	-55.769	1.883	59.535			
TRT2 - TRT1	-67.555	-4.490	58.574			
TRT3 - TRT1	-59.592	-0.770	58.053			
TRT3 - TRT2	-59.564	1.113	61.790			
TRT3 - CONTROL	-67.578	-5.604	56.370			
TRT1 - CONTROL	-59.535	-1.883	55.769			
TRT2 - CONTROL	-61.790	-1.113	59.564			

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL
15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 3518.526
Critical Value of Dunnett's T= 2.100

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

LEVEL	Comparison	Simultaneous		
		Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1	- CONTROL	-51.294	-3.721	43.853
TRT2	- CONTROL	-54.361	-4.490	45.380
TRT3	- CONTROL	-54.612	-5.604	43.405

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

08:34 Friday, August 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

08:34 Friday, August 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: RESPONSE

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 2906.851
Critical Value of Studentized Range= 3.756

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

LEVEL	Comparison	Simultaneous		
		Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1	- CONTROL	-54.380	-0.301	54.982
TRT2	- CONTROL	-53.896	3.426	60.747
TRT3	- CONTROL	-51.777	4.553	60.883

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

08:34 Friday, August 18, 1995

General Linear Models Procedure
Least Squares Means

LEVEL	RESPONSE	LSMEAN	Pr > T H0: LSMEAN(i)=LSMEAN(j)
CONTROL	67.5815502	1	0.9190 0.2593 0.1512
TRT1	67.2806607	2	0.9190 0.2706 0.1536
TRT2	64.1559145	3	0.2593 0.2706 0.7079
TRT3	63.0282453	4	0.1512 0.1536 0.7079

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 2906.851
Critical Value of Studentized Range= 3.756

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

LEVEL	Comparison	Simultaneous		
		Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
CONTROL	- TRT1	-54.380	-0.301	54.982
CONTROL	- TRT2	-53.896	3.426	60.747
CONTROL	- TRT3	-51.777	4.553	60.883
TRT1	- CONTROL	-54.982	-0.301	54.380
TRT2	- CONTROL	-50.341	3.125	56.590
TRT3	- CONTROL	-48.149	4.252	56.654

TRT2 - CONTROL -60.747 -3.426 53.896
 TRT2 - TRT1 -56.590 -3.125 50.341
 TRT2 - TRT3 -54.023 1.128 56.279
 TRT3 - CONTROL -60.883 -4.553 51.777
 TRT3 - TRT1 -56.654 -4.252 48.149
 TRT3 - TRT2 -56.279 -1.128 54.023

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 2906.851
 Critical Value of Dunnett's T= 2.100

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		
TRT1	- CONTROL	-43.542	-0.301	-0.301	42.940		
TRT2	- CONTROL	-48.755	-3.426	-3.426	41.903		
TRT3	- CONTROL	-49.098	-4.553	-4.553	39.992		

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

17. ANALYSIS OF EGGSHELL THICKNESS

08:34 Friday, August 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 52 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

17. ANALYSIS OF EGGSHELL THICKNESS

08:34 Friday, August 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

LEVEL CONTROL L2

TRT1 L3
 TRT2 L4
 TRT3 -L2-L3-L4

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

17. ANALYSIS OF EGGSHELL THICKNESS

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: THICK

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	0.0013041	0.0004347	3.56	0.0208
Error	48	0.0058537	0.0001220		
Corrected Total	51	0.0071578			

R-Square	C.V.	Root MSE	THICK Mean
0.182191	4.732531	0.0110	0.2333

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	0.0013041	0.0004347	3.56	0.0208

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

17. ANALYSIS OF EGGSHELL THICKNESS

08:34 Friday, August 18, 1995

General Linear Models Procedure
Least Squares Means

LEVEL	THICK				Pr > T				H0: LSMEAN(i)=LSMEAN(j)			
	LSMEAN	i/j	1	2	3	4	1	2	3	4		
CONTROL	0.22958333	1	0.8557	0.2216	0.0122							
TRT1	0.22881250	2	0.8557	0.1384	0.0047							
TRT2	0.23516667	3	0.2216	0.1384	0.1777							
TRT3	0.24133333	4	0.0122	0.0047	0.1777							

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

17. ANALYSIS OF EGGSHELL THICKNESS

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 48 MSE= 0.000122
 Critical Value of Studentized Range= 3.764

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

Simultaneous

Simultaneous

08:34 Friday, August 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

Effect Coefficients

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

18. ANALYSIS OF HATCHLING WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: HATWT					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	0.2730175	0.0910058	0.58	0.6285
Error	53	8.2673333	0.1559874		
Corrected Total	56	8.5403509			

R-Square 0.031968 C.V. Root MSE 0.3950 HATWT Mean 7.0561

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	0.2730175	0.0910058	0.58	0.6285

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

18. ANALYSIS OF HATCHLING WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

Least Squares Means					
LEVEL	HATWT	Pr > t	H0: LSMEAN(i)=LSMEAN(j)		
	LSMEAN	i/j	1 2 3 4		
CONTROL	6.98461538	1	0.3455	0.3755	0.9891
TRT1	7.12500000	2	0.3455	0.9896	0.3342
TRT2	7.12307692	3	0.3755	0.9896	0.3662
TRT3	6.98666667	4	0.9891	0.3342	0.3662

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

18. ANALYSIS OF HATCHLING WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

LEVEL	Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
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TRT3	- TRT2	-0.005832	0.006167	0.018165
TRT3	- CONTROL	-0.000248	0.011750	0.023748
TRT3	- TRT1	0.001297	0.012521	0.023744 ***
TRT2	- TRT3	-0.018165	-0.006167	0.005832
TRT2	- CONTROL	-0.006415	0.005583	0.017582
TRT2	- TRT1	-0.004869	0.006354	0.017578
CONTROL	- TRT3	-0.023748	-0.011750	0.000248
CONTROL	- TRT2	-0.017582	-0.005583	0.006415
CONTROL	- TRT1	-0.010453	0.000771	0.011994
TRT1	- TRT3	-0.023744	-0.012521	-0.001297 ***
TRT1	- TRT2	-0.017578	-0.006354	0.004869
TRT1	- CONTROL	-0.011994	-0.000771	0.010453

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

17. ANALYSIS OF EGGSHELL THICKNESS

08:34 Friday, August 18, 1995

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= 48 MSE= 0.000122

Critical Value of Dunnett's T= 2.109

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

LEVEL	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
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TRT3	- CONTROL	0.002244	0.011750	0.021256
TRT2	- CONTROL	-0.003923	0.005583	0.015090
TRT1	- CONTROL	-0.009663	-0.000771	0.008122

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

18. ANALYSIS OF HATCHLING WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 57 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

18. ANALYSIS OF HATCHLING WEIGHT

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= 53 MSE= 0.155987
Critical Value of Studentized Range= 3.751

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 - TRT2	-0.3892	0.0019	0.3931	-0.3892	0.0019	0.3931
TRT1 - TRT3	-0.2382	0.1383	0.5148	-0.2382	0.1383	0.5148
TRT1 - CONTROL	-0.2508	0.1404	0.5315	-0.2508	0.1404	0.5315
TRT2 - TRT1	-0.3931	-0.0019	0.3892	-0.3931	-0.0019	0.3892
TRT2 - TRT3	-0.2605	0.1364	0.5334	-0.2605	0.1364	0.5334
TRT2 - CONTROL	-0.2724	0.1385	0.5494	-0.2724	0.1385	0.5494
TRT3 - TRT1	-0.5148	-0.1383	0.2382	-0.5148	-0.1383	0.2382
TRT3 - TRT2	-0.5334	-0.1364	0.2605	-0.5334	-0.1364	0.2605
TRT3 - CONTROL	-0.3949	0.0021	0.3990	-0.3949	0.0021	0.3990
CONTROL - TRT1	-0.5315	-0.1404	0.2508	-0.5315	-0.1404	0.2508
CONTROL - TRT2	-0.5494	-0.1385	0.2724	-0.5494	-0.1385	0.2724
CONTROL - TRT3	-0.3990	-0.0021	0.3949	-0.3990	-0.0021	0.3949

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

18. ANALYSIS OF HATCHLING WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 0.155987
Critical Value of Dunnnett's T= 2.102

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	-0.1696	0.1404	0.4504	-0.1696	0.1404	0.4504
TRT2 - CONTROL	-0.1872	0.1385	0.4641	-0.1872	0.1385	0.4641
TRT3 - CONTROL	-0.3126	0.0021	0.3167	-0.3126	0.0021	0.3167

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

Class Level Information

Class Levels Values

LEVEL

CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Coefficients

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: SURVWT

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	12.706142	4.235381	0.86	0.4654
Error	51	249.758221	4.897220		
Corrected Total	54	262.464364			

R-Square	C.V.	Root MSE	SURVWT Mean
0.048411	6.988582	2.2130	31.665

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	12.706142	4.235381	0.86	0.4654

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

Least Squares Means

LEVEL	SURVWT LSMEAN	Pr > T 1/j	H0: LSMEAN(i)=LSMEAN(j) 2 3 4
CONTROL	32.0384615	1	0.8635 0.2966 0.3386
TRT1	32.1812500	2	0.8635 0.2061 0.2405
TRT2	31.1230769	3	0.2966 0.2061 0.9297
TRT3	31.2000000	4	0.3386 0.2405 0.9297

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 4.89722
Critical Value of Studentized Range= 3.756

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

LEVEL Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1 - CONTROL	-2.0517	0.1428	2.3373
TRT1 - TRT3	-1.2133	0.9813	3.1758
TRT1 - TRT2	-1.1363	1.0582	3.2527
CONTROL - TRT1	-2.3373	-0.1428	2.0517
CONTROL - TRT3	-1.4668	0.8385	3.1437
CONTROL - TRT2	-1.3898	0.9154	3.2206
TRT3 - TRT1	-3.1758	-0.9813	1.2133
TRT3 - CONTROL	-3.1437	-0.8385	1.4668
TRT3 - TRT2	-2.2283	0.0769	2.3822
TRT2 - TRT1	-3.2527	-1.0582	1.1363
TRT2 - CONTROL	-3.2206	-0.9154	1.3898
TRT2 - TRT3	-2.3822	-0.0769	2.2283

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dunnett'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= 51 MSE= 4.89722
Critical Value of Dunnett's T= 2.107

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

LEVEL Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT1 - CONTROL	-1.5984	0.1428	1.8840
TRT3 - CONTROL	-2.6675	-0.8385	0.9905
TRT2 - CONTROL	-2.7444	-0.9154	0.9136

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

20. ANALYSIS OF FOOD CONSUMPTION

08:34 Friday, August 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

20. ANALYSIS OF FOOD CONSUMPTION

08:34 Friday, August 18, 1995

General Linear Models Procedure
Type I Estimable Functions for: LEVEL

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

20. ANALYSIS OF FOOD CONSUMPTION

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: FOOD				
Source	DF	Sum of Squares	Mean Square	F Value Pr > F
Model	3	1216806.5	405602.2	0.63 0.5972
Error	51	32680681.4	640797.7	
Corrected Total	54	33897487.9		
R-Square				
		C.V.	Root MSE	FOOD Mean
	0.035897	10.24997	800.50	7809.8
Source	DF	Type I SS	Mean Square	F Value Pr > F
LEVEL	3	1216806.5	405602.2	0.63 0.5972

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

20. ANALYSIS OF FOOD CONSUMPTION

08:34 Friday, August 18, 1995

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General Linear Models Procedure
Least Squares Means

LEVEL	FOOD LSMEAN	PR > T i/j	H0: LSMEAN(i)=LSMEAN(j) 1 2 3 4
CONTROL	7818.25000	1	0.5496 0.8956 0.4952
TRT1	7634.12500	2	0.5496 0.6371 0.1776
TRT2	7776.00000	3	0.8956 0.6371 0.4056
TRT3	8034.57143	4	0.4952 0.1776 0.4056

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

20. ANALYSIS OF FOOD CONSUMPTION

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 640797.7

Critical Value of Studentized Range= 3.756

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT3 - CONTROL	-620.0	216.3	1052.7
TRT3 - TRT2	-560.3	258.6	1077.4
TRT3 - TRT1	-377.6	400.4	1178.5
CONTROL - TRT3	-1052.7	-216.3	620.0
CONTROL - TRT2	-808.8	42.3	893.3
CONTROL - TRT1	-627.7	184.1	996.0
TRT2 - TRT3	-1077.4	-258.6	560.3
TRT2 - CONTROL	-893.3	-42.3	808.8
TRT2 - TRT1	-651.9	141.9	935.7
TRT1 - TRT3	-1178.5	-400.4	377.6
TRT1 - CONTROL	-996.0	-184.1	627.7
TRT1 - TRT2	-935.7	-141.9	651.9

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

20. ANALYSIS OF FOOD CONSUMPTION

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 51 MSE= 640797.7

Critical Value of Dunnnett's T= 2.100

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
TRT3 - CONTROL	-445.1	216.3	877.7
TRT2 - CONTROL	-715.3	-42.3	630.8
TRT1 - CONTROL	-826.1	-184.1	457.9

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: POSTM	Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
	Model	4	5184.4698	1296.1174	5.29	0.0012
	Error	50	12245.2757	244.9055		
	Corrected Total	54	17429.7455			
	R-Square		C.V.	Root MSE	POSTM Mean	
			0.297450	7.071312	15.649	221.31

Source	DF	Type III SS	Mean Square	F Value	Pr > F
LEVEL	3	971.4909	323.8303	1.32	0.2776
PREM	1	4212.9789	4212.9789	17.20	0.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
LEVEL	3	1110.9033	370.3011	1.51	0.2228
PREM	1	4212.9789	4212.9789	17.20	0.0001

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL

21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure
Least Squares Means

LEVEL	POSTM LSMEAN	Std Err LSMEAN	Pr > T H0:LSMEAN=0	LSMEAN Number
CONTROL	224.461930	4.534492	0.0001	1
TRT1	226.035992	3.927127	0.0001	2
TRT2	214.578758	4.346542	0.0001	3
TRT3	219.454079	4.185597	0.0001	4

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

i/j	1	2	3	4
1		0.7948	0.1211	0.4217
2	0.7948		0.0566	0.2561
3	0.1211	0.0566		0.4234
4	0.4217	0.2561	0.4234	

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL
21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 50 MSE= 244.9055
Critical Value of Studentized Range= 3.758

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	-14.424	1.458	17.341
CONTROL - TRT3	-9.064	7.298	23.659
CONTROL - TRT2	-6.104	10.545	27.194
TRT1 - CONTROL	-17.341	-1.458	14.424
TRT1 - TRT3	-9.381	5.839	21.060
TRT1 - TRT2	-6.443	9.087	24.616
TRT3 - CONTROL	-23.659	-7.298	9.064
TRT3 - TRT1	-21.060	-5.839	9.381
TRT3 - TRT2	-12.772	3.247	19.266
TRT2 - CONTROL	-27.194	-10.545	6.104
TRT2 - TRT1	-24.616	-9.087	6.443
TRT2 - TRT3	-19.266	-3.247	12.772

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL
21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

08:34 Friday, August 18, 1995

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= 50 MSE= 244.9055
Critical Value of Dunnnett's T= 2.101

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	-14.015	-1.458	11.099
TRT3 - CONTROL	-20.233	-7.298	5.638
TRT2 - CONTROL	-23.708	-10.545	2.619

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL
22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure
Class Level Information

Class	Levels	Values
LEVEL	4	CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

NOTE: Due to missing values, only 55 observations can be used in this analysis.

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWHITE QUAIL
22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

Dependent Variable: POSTF	DF	Sum of Squares	Mean Square	F Value	Pr > F
Source					
Model	4	11629.373	2907.343	6.98	0.0002
Error	50	20813.463	416.269		
Corrected Total	54	32442.836			
R-Square		C.V.	Root MSE	POSTF Mean	
0.358457		8.401193	20.403	242.85	
Source	DF	Type III SS	Mean Square	F Value	Pr > F
LEVEL	3	2668.3110	889.4370	2.14	0.1073
REF	1	8961.0620	8961.0620	21.53	0.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
LEVEL	3	3579.9745	1193.3248	2.87	0.0457

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWWHITE QUAIL
 22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure
 Least Squares Means

LEVEL	POSTF LSMEAN	Std Err LSMEAN	Pr > T HO: LSMEAN=0	LSMEAN Number
CONTROL	250.520233	5.890653	0.0001	1
TRT1	242.305278	5.160396	0.0001	2
TRT2	250.148889	5.839360	0.0001	3
TRT3	230.138371	5.464392	0.0001	4

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

i/j	1	2	3	4
1		0.2986	0.9645	0.0143
2	0.2986		0.3278	0.1101
3	0.9645	0.3278		0.0165
4	0.0143	0.1101	0.0165	

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

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWWHITE QUAIL
 22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 50 MSE= 416.2693
 Critical Value of Studentized Range= 3.758

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	-15.644	5.063	25.769
CONTROL - TRT2	-14.168	7.538	29.245
CONTROL - TRT3	-2.116	19.214	40.545
TRT1 - CONTROL	-25.769	-5.063	15.644
TRT1 - TRT2	-17.770	2.476	22.722
TRT1 - TRT3	-5.691	14.152	33.995
TRT2 - CONTROL	-29.245	-7.538	14.168
TRT2 - TRT1	-22.722	-2.476	17.770
TRT2 - TRT3	-9.209	11.676	32.560
TRT3 - CONTROL	-40.545	-19.214	2.116
TRT3 - TRT1	-33.995	-14.152	5.691
TRT3 - TRT2	-32.560	-11.676	9.209

EFFECTS OF SULFENTRAZONE ON REPRODUCTION OF BOBWWHITE QUAIL
 22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

08:34 Friday, August 18, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 50 MSE= 416.2693
 Critical Value of Dunnett's T= 2.101

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	-21.434	-5.063	11.309
TRT2 - CONTROL	-24.700	-7.538	9.623
TRT3 - CONTROL	-36.079	-19.214	-2.349

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