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

1.	CHEMICAL: Thiobencarb	PC Code No.:	108401
2.	TEST MATERIAL: Bolero Technical	Purity:	97.5%
3.	CITATION Authors: Beavers, J., K. Cha M. Jaber	fey, L. Mitchel	ll, and
<u>stu</u>	Bobwhite. Bobwhite. ady Completion Date: December 28, 1993	y with the Nort	Lnern
La	<u>Laboratory</u> : Wildlife Internation <u>Sponsor</u> : Valent U.S.A. Corporatory Report ID: 263-128 <u>MRID No.</u> : 430754-01 <u>DP Barcode</u> : D198764	nal Ltd. ration	
4.	REVIEWED BY: F. Nicholas Mastrota, Bio Signature: F. Nicholas Mastrota	logist, ERCB, I Date: $7/7/$	2FED 195
5.	SECONDARY REVIEW BY: Renée Costello, B	iologist, ERCB,	EFED
	signature: Perée Wetello	Date: 7 126	195
6.	STUDY PARAMETERS		
1 1 e	Scientific Name of Test Organism: Coli	nus virginianus	5

Age of Test Organisms at Test Initiation: 18 weeks Definitive Study Duration: 25 weeks This study is scientifically sound and fulfills 7. CONCLUSIONS: the guideline requirements for an avian reproduction study with an upland gamebird species. The results of this study show that thiobencarb may impair reproduction of the northern bobwhite, but only at relatively high dietary concentrations. A dietary concentration of 930 ppm (mean measured concentration) caused a significant decrease in the number of normal hatchlings as a percentage of live embryos, as well as in the weight of hatchlings. Dietary concentrations of 86.2 and 267 ppm ai caused no detrimental effect on the feed consumption, body weight gain, or reproductive success

of bobwhites.

Results Synopsis <u>Most sensitive endpoints</u>: hatchling weight, hatchlings/live embryos <u>NOEC</u>: 267 ppm ai <u>LOEC</u>: 930 ppm ai

8. ADEQUACY OF THE STUDY



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A. Classification: Core.

**B.** Rationale: Guideline deviations were minor and probably did not affect the results of this study.

C. Repairability: N/A.

### 9. <u>GUIDELINE DEVIATIONS</u>

1. The duration of exposure to the test chemical after the onset of egg-laying was 9 weeks, whereas the guidelines state that it should be at least 10 weeks.

2. Hatchlings were removed from the hatcher on day 25 or 26, whereas the guidelines state that they should be removed on day 24.

10. SUBMISSION PURPOSE: Miscellaneous Data Package

### 11. MATERIALS AND METHODS

A. Test Organisms

Guideline Criteria	Reported Information
<u>Species</u> A wild waterfowl species, pref- erably the mallard ( <i>Anas platy-</i> <i>rhynchos</i> ), or an upland game species, preferably the north- ern bobwhite ( <i>Colinus virgini-</i> <i>anus</i> )	Northern Bobwhite (Colinus virginianus)
Age at beginning of test Birds should be approaching their first breeding season.	18 weeks (birds were ap- proaching their first breed- ing season)
<u>Supplier</u> All birds should be from the same source.	Top Flight Quail Farm, Bel- videre, NJ
Were birds pen-reared?	Yes
Were birds phenotypically in- distinguishable from wild- birds?	Yes
Health observation period 2 to 6 weeks.	4 weeks

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Guideline Criteria	Reported Information
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 p- ractices?	Yes
Were pens for chicks of ade- quate size and designed to conform to good husbandry pra- ctices?	Yes
Where pens constructed of a nonbinding material such as galvanized or stainless steel?	Yes
Was adequate ventilation pro- vided?	Yes
<u>Temperature</u> Approx. 21°C (70°F)	Mean: 21.2°C SD: 3.4°C
Relative humidity Approx. 55%	Mean: 51% SD: 17%
Lighting First 8 weeks: 7 h per day. <u>Thereafter</u> : 16-17 h per day. At least 6 footcandles at bird level.	First 7 weeks: 8 h per day. Thereafter: 17 h per day.
Diet A commercial breeder feed (or its equivalent) that is appropriate for the test species.	A diet formulated to Wildlife International Ltd. by Agway Inc. This diet was designed to meet the nutritional needs of both bobwhites and mallards.

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Guideline Criteria	Reported Information
<b><u>Preparation of test diet</u></b> A premixed containing the test substance should be mechan- ically mixed with basal diet. If an evaporative vehicle is used, it must be completely evaporated prior to feeding.	A premix was prepared by mechanically mixing the test material, acetone, corn oil, and basal diet. The final diet was prepared by mechanically mixing 1000 g premix, 500 g limestone, and 8.50 kg basal diet.
Was the premix stored under conditions which maintain stability?	Yes
Was the diet analyzed to verify homogeneity and stability of the test substance?	Yes
Replenishment of feed	Fresh feed was provided on a weekly basis. Additional feed was prepared during the study when needed.

# C. Test Design

Guideline Criteria	Reported Information
Nominal concentrations 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: 100, 300, and 1000 ppm a.i. There were a significant effects at 1000 ppm a.i.
<u>Control</u> Vehicle control.	A vehicle control was used.
<u>Vehicle</u> Corn oil or other appropriate vehicle.	Corn oil and acetone
<u>Vehicle amount (% of diet by</u> <u>weight)</u> Not more than 2%.	2% corn oil 37 ml/kg acetone

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Guideline Criteria	Reported Information
<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.	1 male and 1 female per pen.
Number of pens per group 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.	16 pens per group.
<u>Pre-laying exposure duration</u> At least 10 weeks prior to the onset of egg-laying.	11 weeks
Exposure duration with egg- laying At least 10 weeks.	9 weeks
<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
Egg storage temperature Approximately 16°C (61°F)	12.6 °C
Egg storage humidity Approximately 65%	85%
Were eggs set weekly?	Yes
Were eggs candled for cracks prior to being set for incubation on Day 0?	Yes

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Guideline Criteria	Reported Information	
<u>Candling for fertility</u> Quail: approx. Day 11 Ducks: approx. Day 14	Eggs were candled on Day 11.	
Transfer of eggs to hatcher Bobwhite: Day 21 Mallard: Day 23	Eggs were transferred on Day 21.	
Hatching temperature 39°C (102°F) is recommended	37.5°C	
Hatching humidity 70% is recommended	56%	
Day after egg set that chicks were removed and counted Bobwhite: Day 24 Mallard: Day 27	Chicks were removed and counted on Day 25 or 26.	
E. Eggshell Thickness Measurement		

# E. Eggshell Thickness Measurement

Guideline Criteria	Reported Information
Collection Schedule At least once every two weeks (Week 1, 3, 5, 7 and 9).	One egg was collected in odd number pens during odd weeks and from even number pens during even number weeks.
Were shells opened, washed, and air dry for at least 48 hours before measuring?	Yes
Measurement 3-4 measurements per egg to the nearest 0.01 mm.	5 measurements per egg to the nearest 0.005 mm.

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### 12. <u>REPORTED RESULTS</u>

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

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Guideline Criteria	Reported Information
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 (reported weekly)
<pre>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</pre>	The following endpoints were measured: • 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 weights, by sex
Were data reported by pen for all endpoints?	Yes

<u>Significant Results</u>: There was a decrease in body weight of birds in the 930 ppm a.i. treatment group during the first two weeks of exposure. This was believed to be a treatment related effect. Normal increases in body weights were observed in all treatment groups from week 2 through the end of the study. There were no other treatment related effects or signs of toxicity in any of the treatment groups.

There were no negative effects on any reproductive parameter measured in the 86.2 and 267 ppm a.i. treatment groups. Compared to the control, the 930 ppm a.i. treatment group had a significant decrease in the percentage of live 3-week embryo as a percentage of viable embryos. There was also a slight but significant decrease in hatchling body weight in the 930 ppm a.i. group. There were also apparent reductions in the number of

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hatchlings and number of 14-day-old survivors per hen in the 930 ppm a.i. treatment group, but these parameters were not significantly different from the control group.

### VERIFIED STATISTICAL RESULTS 13.

<u>Means of Endpoints</u>

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Endpoint	Control			
Eggs loid (Dr)		86.2 ppm	267 ppm	930 ppm
Eggs Iaid (EL)	48.9	44.0	41.4	41 5
Eggs cracked (EC)	2.20	0.40	0.80	0.67
Eggs set (ES)	40.6	39.3	36.2	
Viable embryos (VE)	34.8	37.7	32.3	36.6
Live 3-wk embryos (LE)	34.4	37.2	32.1	30.4
Normal hatchlings (NH)	33.0	35.1	30.7	27.1
14-day-old survivors (HS)	27.1	30.3	24.9	21.3
Egg shell thick- ness (THICK)	0.23	0.23	0.22	0.21
Hatchling weight (HATWT)	5.47	5.60	5.67	5.00
14-day-old survivor weight (SURVWT)	21.5	21.9	20.5	19.6
Mean food con- sumption (FOOD)	21.7	21.5	21.5	21.1
Final weight of males (POSTM)	223	224	224	223
Final weight of females (POSTF)	242	234	232	228

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# Statistically Significant Endpoints

Endpoint	Statistical Method	Levels at which Effect Was Observed
Normal hatchlings/ live embryos	Fisher's protected t-test	930 ppm
Hatchling weight	Dunnett's test	mag 0.66

### 14. REVIEWER'S COMMENTS

Results are reported in terms of mean measured concentrations since they were considerably less than the nominal concentrations.

Compared to the control, a significant decrease was observed in the numbers of eggs cracked at the 86.2 and 930 ppm treatment levels. This result is considered inconsequential since it does not represent a detrimental effect.

The statistical significance of the decrease in live 3-week embryo as a percentage of viable embryos, which was reported by the authors at the 930 ppm level, could not be confirmed. An apparent decrease was observed, however, and the ANOVA F statistic was close to being significant (P=0.08). At the 930 ppm level, a statistically significant decrease was observed in the number of normal hatchlings as a percentage of live embryos, as well as in the body weight of hatchlings. Several other reproductive parameters showed a nonsignificant decrease at the 930 ppm level. There was no evidence of any effects on reproduction, body weight, or feed consumption at the 86.2 or 267

In conclusion, thiobencarb may impair reproduction of the northern bobwhite, but only at relatively high dietary concentrations. The NOEL and LOEL are 267 and 930 ppm ai, respectively.

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TROL 36 0 31 28 28 26 17 0.240 5 19 21.1 209 217 202 261 TROL 24 0 20 18 18 16 12 0.235 5 20 19 0 211 224 198 234 TROL 65 1 60 55 53 51 40 0.249 5 23 20.2 203 213 206 239 TROL 64 10 48 46 46 43 37 0.204 6 21 22.3 219 263 212 259 TROL 51 3 42 38 37 36 26 0.209 5 17 17.6 206 212 202 239 TROL 32 6 22 21 21 21 19 0.211 6 20 24.0 198 213 204 235 TROL 42 56 33 33 29 24 0.256 6 21 23.9 193 196 202 253 TROL 59 0 33 24 24 23 17 0.248 6 23 19.3 222 222 199 240 TROL 59 0 33 24 24 23 17 0.248 6 23 19.3 222 222 199 240 TROL 59 0 33 55 26 25 25 24 0.207 5 25 26.1 197 205 190 245 TROL 43 3 55 26 25 25 24 0.207 5 25 26.1 197 205 190 245 28 2 22 22 21 20 18 0.230 5 20 19.8 219 259 188 189 40 0 2 2 2 2 2 0.230 6 21 18.1 202 234 184 216 58 0 54 52 52 51 45 0.206 6 23 24.5 189 198 198 239 42 0 37 35 34 30 26 0.218 6 20 21.9 203 213 217 265 44 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 44 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 44 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 44 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 44 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 45 0 37 35 34 30 26 0.218 6 20 21.9 203 213 217 265 46 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 47 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 44 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 44 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 44 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 44 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 44 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 44 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 44 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 44 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 44 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 44 0 39 39 38 36 20 0.218 6 20 21.9 203 213 217 265 24 1 25 25 25 25 25 25 25 25 25 25 25 25 25	61 TRT3 5 62 TRT3 4 63 TRT3 5 64 TRT3 1 EFFECTS EFFECTS	7 4 47 40 35 3 6 3 36 25 21 1 9 0 54 51 44 3 0 11 10 10 1 OF THIOBENCARB CONTROL MEAN 48.87 2.20 40.60	4 22 0.237 5 2 3 23 0.231 5 2 1 5 0.201 4 1 6 25 0.243 5 1 0 7 0.205 5 2 DN THE REPRODU 16 LEVI TRT1   MEAN   44.00 0.40 39.27	21 25.2 193 20 20 22.1 228 24 7 24.6 193 21 8 22.5 186 20 3 23.4 198 22 CTION OF BOBW 29 Thursday, EL TRT2 MEAN 41.40 0.80 36.20	09 202 255 2 193 228 10 191 228 16 214 238 24 203 229 HITES June 22, 19 TRT3 MEAN 41.53 0.67 36.60	<b>95</b>
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	61 TRT3 5 62 TRT3 4 63 TRT3 5 64 TRT3 1 EFFECTS EFFECTS EE EC ES VE	7 4 47 40 35 3 6 3 36 25 21 1 9 0 54 51 44 3 3 0 11 10 10 1 OF THIOBENCARB 0 	4 22 0.237 5 2 3 23 0.231 5 2 1 5 0.201 4 1 6 25 0.243 5 1 0 7 0.205 5 2 DN THE REPRODU 16 LEVI TRT1 MEAN 44.00 0.40 39.27 37.67	21 25.2 193 20 20 22.1 228 24 7 24.6 193 21 8 22.5 186 20 03 23.4 198 22 CTION OF BOBW 29 Thursday, EL TRT2 MEAN 41.40 0.80 36.20 32.33	09 202 255 22 193 228 10 191 228 16 214 238 24 203 229 HITES June 22, 19 TRT3 MEAN 41.53 0.67 36.60 32.07	95
ONTROL 36       0       28       28       26       17       0.240       5       19       213       188       223         ONTROL 24       0       20       18       18       16       12       0.240       5       19       211       220       213       188       223         ONTROL 65       1       60       55       5       5       14       0.249       5       23       20.2       203       213       206       239         ONTROL 64       10       48       46       43       37       0.204       6       21       22.3       219       263       212       239       DMTROL 51       3       42       38       37       36       20       240       198       213       204       235       DMTROL 42       256       33       33       29       24       0.223       5       22       21       21       21       19       0.211       6       20       24.0       198       213       204       235       DMTROL 42       26       23       33       29       24       0.223       5       22       219       240       22       239       DMTROL 52       0 <td>61 TRT3 5 62 TRT3 4 63 TRT3 5 64 TRT3 1 EFFECTS 6 </td> <td>7 4 47 40 35 3 6 3 36 25 21 1 9 0 54 51 44 3 3 0 11 10 10 1 OF THIOBENCARB 0 </td> <td>4 22 0.237 5 2 3 23 0.231 5 2 1 5 0.201 4 1 6 25 0.243 5 1 0 7 0.205 5 2 DN THE REPRODU 16 LEVI TRT1 MEAN 44.00 0.40 39.27 37.67 37.20</td> <td>21 25.2 193 20 20 22.1 228 24 7 24.6 193 21 8 22.5 186 20 3 23.4 198 22 CTION OF BOBW 29 Thursday, EL TRT2 MEAN 41.40 0.80 36.20 32.33 32.07</td> <td>09 202 255 2 193 228 10 191 228 10 191 228 10 229 11 1 238 24 203 229 11 1 TES June 22, 19 TRT3 MEAN 41.53 0.67 36.60 32.07 30.40</td> <td><b>95</b></td>	61 TRT3 5 62 TRT3 4 63 TRT3 5 64 TRT3 1 EFFECTS 6 	7 4 47 40 35 3 6 3 36 25 21 1 9 0 54 51 44 3 3 0 11 10 10 1 OF THIOBENCARB 0 	4 22 0.237 5 2 3 23 0.231 5 2 1 5 0.201 4 1 6 25 0.243 5 1 0 7 0.205 5 2 DN THE REPRODU 16 LEVI TRT1 MEAN 44.00 0.40 39.27 37.67 37.20	21 25.2 193 20 20 22.1 228 24 7 24.6 193 21 8 22.5 186 20 3 23.4 198 22 CTION OF BOBW 29 Thursday, EL TRT2 MEAN 41.40 0.80 36.20 32.33 32.07	09 202 255 2 193 228 10 191 228 10 191 228 10 229 11 1 238 24 203 229 11 1 TES June 22, 19 TRT3 MEAN 41.53 0.67 36.60 32.07 30.40	<b>95</b>
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	61 TRT3 5 62 TRT3 4 63 TRT3 5 64 TRT3 1 EFFECTS EFFECTS EE EE ES VE LE NH	7 4 47 40 35 3 6 3 36 25 21 1 9 0 54 51 44 3 3 0 11 10 10 1 OF THIOBENCARB CONTROL MEAN 48.87 2.20 40.60 34.80 34.40 33.00	4 22 0.237 5 2 3 23 0.231 5 2 1 5 0.201 4 1 6 25 0.243 5 1 0 7 0.205 5 2 DN THE REPRODU 16 LEVI TRT1   MEAN   44.00  0.40  39.27  37.67  37.67  35.13	21 25.2 193 20 20 22.1 228 24 7 24.6 193 21 8 22.5 186 20 3 23.4 198 22 CTION OF BOBW 29 Thursday, EL TRT2 MEAN 41.40 0.80 36.20 32.33 32.07 30.67	09 202 255 22 193 228 10 191 228 16 214 238 24 203 229 HITES June 22, 19 TRT3 MEAN 41.53 0.67 36.60 32.07 30.40 27.07	95
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	61 TRT3 5 62 TRT3 4 63 TRT3 5 64 TRT3 1 EFFECTS EFFECTS EE EE ES VE LE NH HS	7 4 47 40 35 3 6 3 36 25 21 1 9 0 54 51 44 3 3 0 11 10 10 1 OF THIOBENCARB 0 	4 22 0.237 5 2 3 23 0.231 5 2 1 5 0.201 4 1 6 25 0.243 5 1 0 7 0.205 5 2 DN THE REPRODU 16 16 LEVI TRT1 MEAN 44.00 0.40 39.27 37.67 37.20 35.13 30.33	21 25.2 193 20 20 22.1 228 24 7 24.6 193 21 8 22.5 186 20 3 23.4 198 22 CTION OF BOBW 29 Thursday, EL TRT2 MEAN 41.40 0.80 36.20 32.33 32.07 30.67 24.93	09 202 255 2 193 228 10 191 228 10 191 228 10 229 HITES June 22, 19 TRT3 MEAN 41.53 0.67 36.60 32.07 30.40 27.07 21 27	95
TROL 36 0 31 28 28 26 17 0.246 0 25 19 44 195 213 188 223 TROL 24 0 20 18 18 16 12 0.235 5 20 19 0.211 224 198 234 TROL 65 1 60 55 53 51 40 0.249 5 23 20.2 203 213 206 239 TROL 64 10 48 46 46 43 37 0.204 6 21 22.3 219 263 212 259 TROL 51 1 3 42 38 37 36 26 0.209 5 17 17.6 206 212 202 239 TROL 51 3 42 38 37 36 26 0.209 5 17 17.6 206 212 202 239 TROL 51 3 42 38 37 35 26 20 .209 5 17 17.6 206 212 202 239 TROL 51 3 42 38 37 35 37 24 0.256 6 21 23.9 193 196 202 253 TROL 52 40 40 40 39 35 0.223 5 22 21.8 228 245 196 239 TROL 52 40 40 40 39 35 0.223 5 22 21.8 228 245 196 239 TROL 52 0 48 47 47 47 32 0.212 5 19 23.1 213 254 202 235 ROL 59 0 33 24 24 23 17 0.248 6 23 19.3 222 222 199 240 ROL 59 0 43 43 43 43 40 0.223 6 26 0.6 221 230 213 250 ROL 63 3 55 26 25 25 24 0.207 5 25 26.1 197 205 190 245 28 2 22 22 21 20 18 0.230 5 20 19.8 219 259 188 189 40 2 2 2 2 2 0.230 6 21 18.1 202 234 184 216 58 0 54 52 52 51 45 0.206 6 23 24.5 189 198 198 239 42 0 37 35 34 30 26 0.218 5 20 21.9 203 213 217 265 58 0 53 50 48 47 38 0.226 6 22 23.1 201 21.3 217 265 58 0 53 50 48 47 38 0.226 6 22 23.1 207 211 205 241 57 2 48 41 41 37 37 0.236 6 29 22.5 197 228 219 278 31 0 28 28 28 27 25 0.211 5 23 19.1 217 234 193 254 58 0 53 50 48 47 38 0.226 6 22 23.0 215 247 197 226 58 0 53 50 48 47 38 0.226 5 23 23.7 194 205 181 227 10 0 8 8 7 2 0.276 5 21 20.1 196 205 215 210 245 58 0 53 50 50 46 39 0.226 5 23 23.7 194 205 181 227 10 0 8 8 7 2 0.276 5 21 20.1 196 205 215 210 47 0 43 41 40 39 36 0.226 5 23 23.7 194 205 181 227 10 0 1 8 8 7 2 0.276 5 21 20.1 196 205 215 210 47 0 43 41 40 39 36 0.226 5 23 23.7 194 205 181 227 10 0 1 8 8 7 2 0.276 5 21 20.1 196 205 215 210 47 0 43 41 40 39 36 0.226 5 23 23.7 194 205 181 227 10 0 1 8 8 7 2 0.276 5 21 20.1 196 205 215 210 47 0 43 41 40 39 36 0.226 5 23 23.7 194 205 181 227 10 0 1 8 8 7 2 0.276 5 21 20.1 196 205 215 210 47 0 43 41 40 39 36 0.226 5 23 23.7 194 205 181 227 10 0 1 8 8 7 2 0.276 5 21 20.1 196 205 215 210 47 0 44 42 42 39 28 0.224 6 23 22.3 198 217 187 222	61 TRT3 5 62 TRT3 4 63 TRT3 5 64 TRT3 1 EFFECTS EE EL EC ES VE LE NH HS ES/EL (%)	7 4 47 40 35 3 6 3 36 25 21 1 9 0 54 51 44 3 3 0 11 10 10 1 OF THIOBENCARB CONTROL MEAN 48.87 2.20 40.60 34.80 34.40 33.00 27.13 83.07	4 22 0.237 5 2 3 23 0.231 5 2 1 5 0.201 4 1 6 25 0.243 5 1 0 7 0.205 5 2 DN THE REPRODU 16 LEVI TRT1   MEAN   44.00 0.40 39.27 37.67 37.67 37.20 35.13 30.33 86.47	21 25.2 193 20 20 22.1 228 24 7 24.6 193 21 8 22.5 186 20 3 23.4 198 22 CTION OF BOBW 29 Thursday, EL TRT2 MEAN 41.40 0.80 36.20 32.33 32.07 30.67 24.93 88.07	09 202 255 2 193 228 10 191 228 16 214 238 24 203 229 HITES June 22, 19 TRT3 MEAN 41.53 0.67 36.60 32.07 30.40 27.07 21.27 87.32	<b>95</b>
RoL 36 0 31 28 28 26 17 0.240 5 19 2.4 195 213 188 223 ROL 24 0 20 18 18 16 12 0.235 5 20 19.0 211 224 198 234 ROL 65 1 60 55 53 51 40 0.249 5 23 20.2 203 213 206 239 ROL 51 3 42 38 37 36 26 0.209 5 17 17.6 206 212 202 239 ROL 51 3 42 38 37 35 26 20 209 5 17 17.6 206 212 202 239 ROL 51 3 42 38 37 35 20 24 0.256 6 21 23.9 193 196 202 253 ROL 42 56 33 33 29 24 0.256 6 21 23.9 193 196 202 253 ROL 52 0 48 47 47 47 32 0.212 5 19 23.1 213 254 202 235 ROL 52 0 48 47 47 47 32 0.212 5 19 23.1 213 254 202 235 ROL 52 0 48 47 47 47 32 0.212 5 19 23.1 213 254 202 235 ROL 53 355 26 25 25 24 0.207 5 25 26 2.1 18.1 202 234 184 216 28 22 22 21 20 18 0.230 5 20 19.8 219 259 188 189 4 0 2 2 2 2 2 2 2 0.230 6 21 18.1 202 234 184 216 72 1 6 6 56 46 25 50 .251 5 20 23.1 203 221 207 238 4 0 2 2 2 2 2 2 0.230 6 21 18.1 202 234 184 216 78 1 66 64 42 55 0.251 5 20 23.1 203 221 207 238 4 0 2 2 2 2 2 0.230 6 21 18.1 202 234 184 216 58 0 54 52 52 51 45 0.206 6 23 24.5 189 198 198 239 42 0 37 35 34 30 26 0.218 6 20 21.9 203 213 217 265 57 2 48 41 41 37 7 0.236 6 29 22.5 197 228 219 278 31 0 28 28 28 27 25 0.211 5 23 19.1 217 234 193 254 58 0 53 50 0 48 47 38 0.226 6 22 23.0 215 247 197 226 58 0 53 50 0 48 47 38 0.226 6 22 23.0 215 247 197 226 58 0 53 50 0 48 47 38 0.226 6 22 23.0 215 247 197 226 58 0 53 50 0 48 47 38 0.226 6 22 23.0 215 247 197 226 58 0 53 50 0 48 47 38 0.226 6 22 23.0 215 247 197 226 58 0 53 50 0 48 47 38 0.226 6 22 23.0 215 247 197 226 58 0 53 50 0 48 47 38 0.226 6 22 23.0 215 247 197 226 58 0 53 50 0 48 47 38 0.226 6 22 23.0 215 247 197 226 58 0 53 50 0 48 47 38 0.226 6 22 23.0 215 247 197 226 58 0 53 50 0 48 47 38 0.226 6 22 23.0 215 247 197 226 59 0 44 42 42 39 28 0.224 6 23 23.7 194 205 181 227 10 0 9 8 8 7 2 0.276 5 21 20.1 196 205 215 210 47 0 44 42 42 39 28 0.224 6 23 23.7 194 205 181 227 10 0 9 8 8 7 2 0.276 5 21 20.1 196 205 215 210 50 1 45 45 45 42 37 0.211 5 19 22.5 204 259 185 214 59 7 47 38 38 35 35 0.214 7 31 21.7 228 267 217 288	61 TRT3 5 62 TRT3 4 63 TRT3 5 64 TRT3 1 EFFECTS EL EC ES VE LE NH HS ES/EL (%) EC/EL (%)	7 4 47 40 35 3 6 3 36 25 21 1 9 0 54 51 44 3 3 0 11 10 10 1 OF THIOBENCARB 	4 22 0.237 5 2 3 23 0.231 5 2 1 5 0.201 4 1 6 25 0.243 5 1 0 7 0.205 5 2 N THE REPRODU 16 LEVI TRT1 MEAN 44.00 0.40 39.27 37.67 37.20 35.13 30.33 86.47 0.94	21 25.2 193 20 20 22.1 228 24 7 24.6 193 21 8 22.5 186 20 3 23.4 198 22 CTION OF BOBW 29 Thursday, EL TRT2 MEAN 41.40 0.80 36.20 32.33 32.07 30.67 24.93 88.07 1.40	09 202 255 22 193 228 10 191 228 16 214 238 24 203 229 HITES June 22, 19 TRT3 MEAN 41.53 0.67 36.60 32.07 30.40 27.07 21.27 87.32 1 52	95
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	61 TRT3 5 62 TRT3 4 63 TRT3 5 64 TRT3 1 EFFECTS EL EL EC ES VE LE NH HS ES/EL (%) EC/EL (%) EC/EL (%)	7 4 47 40 35 3 6 3 36 25 21 1 9 0 54 51 14 3 3 0 11 10 10 1 OF THIOBENCARB CONTROL MEAN 48.87 2.20 40.60 34.80 34.40 33.00 27.13 83.07 4.45 87.33	4 22 0.237 5 2 3 23 0.231 5 2 1 5 0.201 4 1 6 25 0.243 5 1 0 7 0.205 5 2 DN THE REPRODU 16 LEVI TRT1   MEAN   44.00 0.40 39.27 37.67 37.67 37.20 35.13 30.33 86.47 0.94 96.07	21 25.2 193 20 20 22.1 228 24 7 24.6 193 21 8 22.5 186 20 3 23.4 198 22 CTION OF BOBW 29 Thursday, EL TRT2 MEAN 41.40 0.80 36.20 32.33 32.07 30.67 24.93 88.07 1.40 90.81	09 202 255 2 193 228 10 191 228 10 2191 228 10 2191 228 10 229 HITES June 22, 194 TRT3 MEAN 41.53 0.67 36.60 32.07 30.40 27.07 21.27 87.32 1.52 85.73	95

File:C:\SASWIN\CHICKS.OUT Page 5 OSTM 15 1 223.067 14.180 6.357 PREF 16 0 204.500 10.985 5.372 OSTF 15 1 5.372	File:C:\SASWIN\CHICKS.OUT Page 6
SEL ES/EL (%) 15 1 87.319 4.760 5.451	Source DF Type I SS Mean Square F Value Pr > F
HH_EL       NH/EL (%) 15       1       64.089       21.804       34.022         CC_EL       EC/EL (%) 15       1       1.518       2.518       165.851         EE S       VE/ES (%) 15       1       85.732       16.845       19.649         HH_ES       NH/ES (%) 15       1       72.821       23.388       32.117         IS ES       HS/ES (%) 15       1       56.224       23.379       41.582         E-VE       LE/VE (%) 15       1       94.513       7.179       7.595         HH_LE       NH/LE (%) 15       1       88.243       14.130       16.013	LEVEL 3 547.78333 182.59444 0.70 0.5539 EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 1. AMALYSIS OF EL DATA
IS_NH HS/NH (%) 15 1 74.900 13.675 18.257	16:29 Thursday, June 22, 1995
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES	General Linear Models Procedure Least Squares Means
16:29 Thursday, June 22, 1995	LEVEL EL Pr > [T] HO: LSMEAN(1)=LSMEAN(1)
General Linear Models Procedure	LSMEAN i/j '1 Z 3 4
Class Levels Values	LUNTROL 48.8666667 1 . 0.4116 0.2096 0.2177 TRT1 44.0000000 2 0.4116 . 0.6602 0.6766
LEVEL 4 CONTROL TRT1 TRT2 TRT3	TRT3 41.400000 5 0.2096 0.6602 0.9820 41.5333333 4 0.2177 0.6766 0.9820
Number of observations in data set = 64	NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.
OTE: Due to missing values, only 60 observations can be used in this analysis.	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES	16:29 Thursdaý, June 22, 1995 General Linear Models Procedure
16:29 Thursday, June 22, 1995	Tukey's Studentized Range (HSD) Test for variable: EL
General Linear Models Procedure Type I Estimable Functions for: LEVEL	NOTE: This test controls the type I experimentwise error rate.
ffect ITERCEPT 0	Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 259.5548 Critical Value of Studentized Range= 3.745 Minimum Significant Difference= 15.577
VEL CONTROL L2	Comparisons significant at the 0.05 level are indicated by /***/.
TRT1 L3 TRT2 L4 TRT3 -L2-L3-L4	Simultaneous Simultaneous Lower Difference Upper LEVEL Confidence Between Confidence Comparison Limit Means Limit
1. ANALYSIS OF EL DATA ***********************************	CONTROL         TRT1         -10.711         4.867         20.444           CONTROL         TRT3         -8.244         7.333         22.911           CONTROL         TRT2         -8.111         7.467         23.044
General Linear Models Procedure pendent Variable: EL Sum of Mean	TRT1         - CONTROL         -20.444         -4.867         10.711           TRT1         - TRT3         -13.111         2.467         18.044           TRT1         - TRT2         - 12.977         2.600         18.177
del 3 547.78333 182.59444 0.70 0.5539	TRT3         - CONTROL         -22.911         -7.333         8.244           TRT3         - TRT1         -18.044         -2.467         13.111           TRT3         - TRT2         -15.444         0.133         15.711
ron 56 14535.06667 259.55476	TRT2 - CONTROL -23.044 -7.467 8.111
rrected Total 59 15082.85000	TRT2 - TRT3 -15.711 -0.133 15.444
R-Square C.V. Root MSE EL Mean 0.036318 36.65689 16.111 43.950	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 1. ANALYSIS OF EL DATA

File:C:\SASWIN\CHICKS.OUT Page 9	File: C: \SASUTN\CHICKS OUT Down to
TRT1 - CONTROL -3.5984 -1.8000 -0.0016 ***	16:29 Thursday, June 22, 1995
TRT1 - TRT3 -2.0651 -0.2667 1.5317	General Linear Models Procedure
	Dependent Variable: ES
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 2. ANALYSIS OF EC DATA	Sum of Mean DF Squares Square F Value Pr > F
16:29 Thursday, June 22, 1995	Model 3 201.80000 67.26667 0.31 0.8103
General Linear Models Procedure	Error 56 12214.53333 218 11667
Dunnett's One-tailed T tests for variable: EC	Corrected Total 59 12416 33333
NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.	R-Square C.V. Root MSE ES Mean
Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 3.459524 Critical Value of Dunnett's T= 2.107	0.016253 38.69548 14.769 38.167
Minimum Significant Difference= 1.431	Source
Comparisons significant at the 0.05 level are indicated by '***'.	LEVEL 3 201 80000 47 2447 0 34
Simultaneous Simultaneous Lover Difference Upper	0.8192
Comparison Limit Means Limit	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBUHITES
TRT2 - CONTROL -2.8310 -1.4000 0.0310	3. ANALYSIS OF ES DATA
TRT3         - CONTROL         -2.9643         -1.5333         -0.1023         ***           TRT1         - CONTROL         -3.2310         -1.8000         -0.3690         ***	General Linear Models Procedure Least Squares Means
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES	LEVEL ES Pr >  T  HO: LSMEAN(i)=LSMEAN(j)
16:29 Thursday, June 22, 1995	CONTROL 40.6000000 1 0.8054 0.400
General Linear Models Procedure Class Level Information	TRT1         39.2666667         2         0.8056         0.4180         0.4614           TRT2         36.2000000         3         0.4180         0.5719         0.6229           TRT2         36.2000000         3         0.4180         0.5719         0.6229
Class Levels Values	JOINTE T-
LEVEL 4 CONTROL TRT1 TRT2 TRT3	with pre-planned comparisons should be used.
Number of observations in data set = 64	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES
	3. ANALYSIS OF ES DATA 16:29 Thursday June 22 1005
analysis.	General Linear Models Procedure
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF POPULATED	Tukey's Studentized Range (HCh) Tast for which the
3. ANALYSIS OF ES DATA	NOTE: This test controls the time t
General Linear Wadel	Alpha= 0.05 Continues the type I experimentwise error rate.
Type I Estimable Functions for: LEVEL	Critical Value of Studentized Range= 3.745 Minimum Significant Difference= 14.28
rect	Comparisons significant at the 0.05 level and indiana indiana
<pre>/ERCEPT</pre>	Simultane
/EL CONTROL L2 TRT1 L3 TRT2 L4	LEVEL Confidence Between Confidence Comparison Limit Means Limit
₩ <b>1K13</b>	CONTROL - TRT1 -12.946 1 333 45 447
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 3. ANALYSIS OF ES DATA	CONTROL - TRT3 -10.280 4.000 18.280 CONTROL - TRT2 -9.880 4.400 18.680

LEVEL Confidence Between Confidence Comparison Limit Means Limit	File:C:\SASWIN\CHICKS.OUT Page 14 General Linear Models Procedure
TRT1     - CONTROL     -10.747     2.867     16.481       TRT1     - TRT2     -8.281     5.333     18.947       TRT1     - TRT3     -8.014     5.600     19.214	Type I Estimable Functions for: LEVEL Effect Coefficients
CONTROL - TRT1 -16.481 -2.867 10.747 CONTROL - TRT2 -11.147 2.467 16.081 CONTROL - TRT3 -10.881 2.777 16.081	INTERCEPT 0 LEVEL CONTROL L2 TRT1
TRT2         - TRT1         -18.947         -5.333         8.281           TRT2         - CONTROL         -16.081         -2.467         11.147           TRT2         - TRT3         -13.347         -0.467         17.147	TRT2 L4 TRT3 -L2-L3-L4
TRT3         TRT1         -19.214         -5.600         8.014           TRT3         - CONTROL         -16.347         -2.733         10.881           TRT3         - TRT2         -13.881         -13.881         -13.881	5. ANALYSIS OF LE DATA 16:29 Thursday, June 22, 1995
	Dependent Variable: LE
4. ANALYSIS OF VE DATA 16:29 Thursday, June 22, 1995	Source DF Squares Square F Value Pr > F
General Linear Models Procedure Dunnett's One tailed I tests for venichles wr	3         392.45000         130.81667         0.68         0.5673           Error         56         10754.53333         192.04524
NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control for	Corrected Total 59 11146.98333
Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 198.25 Critical Value of Dunnett's T= 2.107	0.035207 41.34671 13.858 LE Mean
mparisons significant at the 0.05 level are indicated by /***/.	Source DF Type I SS Mean Square F Value Pr > F
Simultaneous Simultaneous Lower Difference Upper Comparison Limit Means Limit TRT1 - CONTROL -7 966 2 967 17 1000	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 5. ANALYSIS OF LE DATA
TRT2         -         CONTROL         -13.299         -2.467         8.366           TRT3         -         CONTROL         -13.566         -2.733         8.099	16:29 Thursday, June 22, 1995 General Linear Models Procedure Least Squares Means
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 5. ANALYSIS OF LE DATA 14:20 Thursday	$\begin{array}{c c} LE & Pr >  T  \\ LSMEAN & i/j \\ \end{array} \begin{array}{c} I \\ 1 \\ 2 \\ \end{array} \begin{array}{c} LSMEAN(j) \\ 3 \\ \end{array} \begin{array}{c} LSMEAN(j) \\ 4 \\ \end{array}$
General Linear Models Procedure Class Level Information	CONTROL         34.4000000         1         0.5822         0.6465         0.4326           TRT1         37.2000000         2         0.5822         0.3147         0.1844           TRT2         32.0666667         3         0.6465         0.3147         0.1844           TRT3         30.4000000         0.57431         0.7431         0.7431
Class Levets Values	NOTE: To ensure overall protection level, only probabilities ensure
4 CUNIKUL IRT1 IRT2 IRT3	with pre-planned comparisons should be used.
Number of observations in data set = 64	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 5. ANALYSIS OF LE DATA 16:29 Thursday, June 22, 1995
EFFECTS OF THIORENCAPE ON THE REDDOCTOR	General Linear Models Procedure
5. ANALYSIS OF LE DATA 16:29 Thursday, 14-20 40-	NOTE: This test controls the time t
	Alpha= 0.05 Confidence= 0.95 df= 54 MSE- 100 AVE

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Tukey's Studentized Range (HSD) Test for variable: NH	LEVEL 4 CONTROL TRT1 TRT2 TRT3	
NOTE: This test controls the type I experimentwise error rate.	Number of observations in the	
Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 178.5 Critical Value of Studentized Range= 3.745 Minimum Significant Difference= 12.918	NOTE: Due to missing values, only 60 observations can be used in this	
mparisons significant at the 0.05 level are indicated by /***/.		1
Simultaneous Simultaneous Lower Difference Upper Comparison Confidence Between Confidence	7. ANALYSIS OF HS DATA 16:29 Thursday, June 22, 1995	
TRT1 - CONTROL 10 TOP	Géneral Linear Models Procedure Type I Estimable Functions for: LEVEL	
TRT1 - TRT2 -8.451 4.467 17.385	Effect Coefficients	
CONTROL - TPT1 15 or -	INTERCEPT 0	
CONTROL - TRT2 -10.585 2.333 10.785 CONTROL - TRT3 -6.985 5.933 18.851	LEVEL CONTROL L2 TRT1 L3 TRT2 L4	
IRT2 - TRT1 -17.385 -4.467 8.451 IRT2 - CONTROL -15.251 -2.333 10.595	TRT3 -L2-L3-L4	-
IRT2 - TRT3 -9.318 3.600 16.518 IRT3 - TRT1 -20.985 -8.067 4.851	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 7. ANALYSIS OF HS DATA 16:29 Thursday, the option	
RT3 - TRT2 -18.851 -5.933 6.985 -16.518 -3.600 9.318	General Linear Models Proceeding	
ELECTION OF THE ADDRESS OF THE ADDRE	Dependent Variable: HS	
6. ANALYSIS OF NH DATA	Source DF Squares Square	st ligh
16:29 Thursday, June 22, 1995	Model $3$ 653.65000 217 88322 1 57	
Dumpattie	Error 56 8006.93333 142 08005	,
DTE: This tests controls the type I opposite the type I	Corrected Total 59 8660.58333	, ·
comparisons of all treatments against a control.	R-Square C.V. Root MSE HS Mean	in di Second
Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 178.5 Critical Value of Dunnett's T= 2.107 Minimum Significant Difference= 10.279	0.075474 46.13813 11.957 25.917	
risons significant at the 0.05 level are indicated by /***/	DF Type I SS Mean Square F Value Pr > F	u liter Vite
Simultaneous Simultaneous	<sup>LEVEL</sup> 3 653.65000 217.88333 1.52 0.2183	
LEVEL Confidence Difference Upper Comparison Limit Means Limit	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES	
T2 - CONTROL -12.612 -2.133 12.412 -2.333 7.946	16:29 Thursday, June 22, 1995	
	General Linear Models Procedure Least Squares Means	
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 7. ANALYSIS OF HS DATA 16:29 Thursday, June 22, 1005	$\begin{array}{c} \text{LEVEL} \\ \text{LSMEAN} \\ \text{LSMEAN} \\ \text{i/j} \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 2 \\ 3 \\ 4 \\ 1 \\ 3 \\ 4 \\ 1 \\ 1 \\ 3 \\ 4 \\ 1 \\ 1 \\ 3 \\ 4 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$	• • • • • • •
General Linear Models Procedure Class Level Information	CONTROL         27.1333333         1         0.4667         0.6163         0.1845           TRT1         30.3333333         2         0.4667         0.2213         0.0424           TRT2         24.9333333         3         0.6163         0.2213         0.0424	
Class Levels Values	IKIS 21.26666667 4 0.1845 0.0424 0.4046	1994) 1994)
	INVIE: To ensure overall protection level, only probabilities associated	,

Least Sources Manna	Page 22
LEVEL RESPONSE Pr > [T] HO. I CHEANCEN - I CHEANCEN	Comparisons significant at the 0.05 level are indicated by /***/
LSMEAN $1/j$ 1 2 3 4 CONTROL 66.3670222 1 0.0094 0.0936 0.0376 TRT1 71.0570283 2 0.0094 0.3619 0.6136 TRT2 69.3880701 3 0.0936 0.3619 0.6822	Simultaneous Simultaneous Level Lower Difference Upper Comparison Limit Means Limit
To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.	IRT1       - CONTROL       -20.293       4.690       29.673         TRT3       - CONTROL       -21.214       3.769       28.752         TRT2       - CONTROL       -21.962       3.021       28.004
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 8. ANALYSIS OF ES/EL DATA ********************************	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 9. ANALYSIS OF VE/ES DATA ***********************************
16:29 Thursday, June 22, 1995 General Linear Models Procedure	General Linear Models Procedure Class Level Information
NOTE: This test of the test of tes	Class Levels Values
Alpha= 0.05. Confidence of a	LEVEL 4 CONTROL TRT1 TRT2 TRT3
Critical Value of Studentized Range= 3.745 Minimum Significant Difference= 31.397	Number of observations in data set = 64
parisons significant at the 0.05 level are indicated by '***'.	NOTE: Due to missing values, only 60 observations can be used in this analysis.
Simultaneous Simultaneous Lower Difference Upper Comparison Limit Means Limit	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 9. ANALYSIS OF VE/ES DATA
IRT1 - TRT3 -30.476 0.921 32.318 IRT1 - TRT2 -29.728 1.669 33.066 IRT1 - CONTROL -26.707 4.690 36.087	16:29 Thursday, June 22, 1995 General Linear Models Procedure Type I Estimable Functions for: LEVEL
RT3       - TRT1       -32.318       -0.921       30.476         RT3       - TRT2       -30.649       0.748       32.145         RT3       - CONTROL       -27.628       3.769       35.166	Effect Coefficients INTERCEPT 0
RT2       - TRT1       -33.066       -1.669       29.728         RT2       - TRT3       -32.145       -0.748       30.649         RT2       - CONTROL       -28.376       3.021       34.418	LEVEL CONTROL L2 TRT1 L3 TRT2 L4 TRT3 -L2-L3-L4
UNTROL - TRT1 -36.087 -4.690 26.707 ONTROL - TRT3 -35.166 -3.769 27.628 ONTROL - TRT2 -34.418 -3.021 28.376	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 9. ANALYSIS OF VE/ES DATA
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES	16:29 Thursday, June 22, 1995 General Linear Models Procedure
16:29 Thursday, June 22, 1995 General Linear Models Procedure	Weight: Source
Dunnett's One-tailed T tests for variable: RESPONSE	Model 3 23458 297 2040 400
comparisons of all treatments against a control	Error 56 338628.024 6044 020
Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 1054.441 Critical Value of Dunnett's T= 2.107 Minimum Significant Difference= 24.983	Corrected Total 59 362086.311 R-Square C.V. Poot Mcc Prono

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Dependent Varia	ole: RESPONSE	: 영상 : 2 : 2 : 4			
Weight:	VE	Sim of	Hoon		
Source	DF	Squares	Square	F Value	Pr > F
Model	3	10759.910	3586.637	2.37	0.0802
Error	56	84748.087	1513.359		
Corrected Total	59	95507.997			
	R-Square	c.v.	Root MSE	RESPON	SE Mean
	0.112660	45.66705	38.902		85.186
Source	DF	Type I SS M	lean Square	Value	Pr > F
LEVEL	3	10759.910	3586.637	2.37	0.0802
					CICCUL
	10. AN/	ALYSIS OF LE/V	/E DATA ******* 16:29 Thursda	y, June 2	2, 1995
	General L Leas	inear Models P st Squares Mea	rocedure		
LEVEL	RESPONSE LSMEAN	Pr > [T] HO: i/j 1	LSMEAN(i)=LS 2 3	MEAN(j) 4	
CONTROL TRT1 TRT2 TRT3	86.5379774 85.7546264 87.0821875 81.1386553	1 . 0 2 0.7414 3 0.8253 0 4 0.0323 0	.7414 0.8253 0.5836 .5836 .0609 0.0210	0.0323 0.0609 0.0210	
OTE: To ensure of with pre-pl	overall protectanned compari	tion level, o sons should b	nly probabili e used.	ties assoc	iated
EFFECTS C	)F THIOBENCARB 10. ANA	ON THE REPRO	DUCTION OF BOI	BWHITES	
			16:29 Thursday	, June 22	, 1995
	General Li	near Models P	rocedure	4	
Tukey's Stu	dentized Rang	e (HSD) Test	for variable:	RESPONSE	
NOTE: This	test controls	the type I ex	xperimentwise	error rat	e.
Alpha= Cr	0.05 Confide itical Value Minimum Signi	nce= 0.95 df= of Studentized ficant Differe	56 MSE= 151 Range= 3.745 Ence= 37.614	3.359	
Comparisons si	gnificant at	the 0.05 level	are indicate	d by /***	<b>.</b> .
	Sim	ultaneous	Simult	aneous	
	<b>U</b> This				
LEVEL Compar i	Cor	Lower Diff nfidence Be Limit M	erence Up tween Confi leans Li	per dence mit	11.11.11.11.1 24.11.11.11.11.11.11.11.11.11.11.11.11.11

E:C:\SASWIN\CHICKS.OUT CONTROL - TRT2 CONTROL - TRT1 CONTROL - TRT3	Page 26 -38.158 -36.831 -32.215	-0.544 0.783 5.399	37.070 38.397 43.013
TRT1 - TRT2	-38.941	-1.328	36.286
TRT1 - CONTROL	-38.397	-0.783	36.831
TRT1 - TRT3	-32.998	4.616	42.230
TRT3 - TRT2	-43.557	-5.944	31.670
TRT3 - CONTROL	-43.013	-5.399	32.215
TRT3 - TRT1	-42.230	-4.616	32.998

### EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 10. ANALYSIS OF LE/VE DATA

16:29 Thursday, June 22, 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= 56 MSE= 1513.359 Critical Value of Dunnett's T= 2.107 Minimum Significant Difference= 29.929

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneou Upper Confidence Limit
RT2 - CONTROL	-29.385	0.544	30.474
RT1 - CONTROL	-30.713	-0.783	29.146
RT3 - CONTROL	-35.329	-5.399	24.530

EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES

16:29 Thursday, June 22, 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 60 observations can be used in this analysis.

EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 11. ANALYSIS OF NH/LE DATA

16:29 Thursday, June 22, 1995

General Linear Models Procedure Type I Estimable Functions for: LEVEL

Effect

Fil

Coefficients

I ITE. C. (SASWIN (CH	ILCKS.DUT Page 29	File:C:\SASWIN\CHICKS.OUT Page 30
NOTE: Due to miss analysis. EFFECTS O	ing values, only 60 observations can be used in this F THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 12. ANALYSIS OF NH/EL DATA	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 12. ANALYSIS OF NH/EL DATA ***********************************
	16:29 Thursday, June 22 1005	General Linear Models Procedure
	General Linear Models Procedure	Tukey's Studentized Range (HSD) Test for weight a pre-
	Type I Estimable Functions for: LEVEL	NOTE: This test controls the type I amande: RESPONSE
ETTECT	Coefficients	Alpha= 0.05 Confidence 0.05
INTERCEPT LEVEL CONTROL	0 L2	Critical Value of Studentized Range= 3.745 Minimum Significant Difference= 63.716
TRT2		Comparisons significant at the 0.05 level are indicated by /***/.
EFFECTS OF	-L2-L3-L4 THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 12. ANALYSIS OF NH/EL DATA	LEVEL Confidence Between Confidence Limit Means Limit
	16:29 Thursday, June 22, 1995 General Linear Models Procedure	TRT1       - TRT2       -60.059       3.657       67.373         TRT1       - CONTROL       -56.155       7.561       71.277         TRT1       - TRT3       -54.724       8.992       72.708
Dependent Variable: Veight: Source	EL Sum of Mean DF Suriares	IRT2       - TRT1       -67.373       -3.657       60.059         TRT2       - CONTROL       -59.813       3.903       67.619         TRT2       - TRT3       -58.382       5.334       69.050
1odel Tror	3         32332.139         10777.380         2.48         0.0703           56         24380.601         4740.802         56         24380.601         4740.802	CONTROL         - TRT1         -71.277         -7.561         56.155           CONTROL         - TRT2         -67.619         -3.903         59.813           CONTROL         - TRT3         -62.285         1.431         65.147
Orrected Total	59 275512.830	TRT3         - TRT1         -72.708         -8.992         54.724           TRT3         - TRT2         -69.050         -5.334         58.382           TRT3         - CONTROL         -65.147         -1.431         62.285
0	.117353 112.6622 65.898 58.491	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES
ource EVEL	DF Type I SS Mean Square F Value Pr > F 3 32332.139 10777.380 2.48 0.0703	General Linear Models Procedure
		Dunnett's One-tailed I tests for voriables
EFFECTS OF 1	HIOBENCARB ON THE REPRODUCTION OF BOBWHITES	NOTE: This tests controls the type I experimentwise error for comparisons of all treatments against a control.
	16:29 Thursday, June 22, 1995 General Linear Models Procedure	Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 4342.512 Critical Value of Dunnett's T= 2.107 Minimum Significant Difference= 50.699
LEVEL	RESPONSE $Pr >  T $ HO: LSMEAN(i)=LSMEAN(j) LSMEAN $i/j$ 1 2 3 4	Comparisons significant at the 0.05 level are indicated by "***". Simultaneous
CONTROL 56 TRT1 63 TRT2 59	.0179064 1 . 0.0369 0.2821 0.6918 .5786331 2 0.0369 . 0.3251 0.0178 .9212984 3 0.2821 0.3251 0.1500	LEVEL Lower Difference Upper Confidence Between Confidence Comparison Limit Means Limit
TE: To ensure overa with pre-planne	5870341 4 0.6918 0.0178 0.1590 all protection level, only probabilities associated	TRT1       - CONTROL       -43.138       7.561       58.260         TRT2       - CONTROL       -46.795       3.903       54.602         TRT3       - CONTROL       -52.130       -1.431       49.268

File:C:\SASWIN\CHICKS.OUT Page 33 Minimum Significant Difference= 38.252	File:C:\SASWIN\CHICKS.OUT Page 34	1. my
Comparisons significant at the 0.05 level are indicated by /***/	0.124210 845.3256 45.261 5.3542	્યું છે. દુલ્લા મુ
Simultaneous Simultaneous Lower Difference Upper LEVEL Confidence Between Confidence Comparison Limit Meane Limit	Source DF Type I SS Mean Square F Value Pr > F LEVEL 3 16269 010 5623 707 0 45	• )
TRT1         - CONTROL         -34.825         3.427         41.678           TRT2         - CONTROL         -38.508         -0.257         37.995           TRT3         - CONTROL         -40.998         -2.746         35.505	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES	
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 14. ANALYSIS OF EC/EL DATA ***********************************	16:29 Thursday, June 22, 1995 General Linear Models Procedure Least Squares Means	
General Linear Models Procedure Class Level Information	LEVEL RESPONSE Pr > $ T $ HO: LSMEAN(i)=LSMEAN(j) LSMEAN $i/j$ 1 2 3 4	· ·
Class Levels Values LEVEL 4 CONTROL TRT1 TRT2 TRT3	CONTROL         9.24696828         1         0.0120         0.0612         0.0434           TRT1         2.94310812         2         0.0120         0.5330         0.6351           TRT2         4.53049083         3         0.0612         0.5330         0.6351           TRT3         4.14952625         4         0.0434         0.6351         0.8825	
Number of observations in data set = 64	NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.	
NOTE: Due to missing values, only 60 observations can be used in this analysis.	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES	
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES	16:29 Thursday, June 22, 1995	
16:29 Thursday, June 22, 1995	General Linear Models Procedure	
General Linear Models Procedure Type I Estimable Functions for: LEVEL	Tukey's Studentized Range (HSD) Test for variable: RESPONSE NOTE: This test controls the type I experimentation and the state of the st	
Effect Coefficients INTERCEPT 0	Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 2048.518 Critical Value of Studentized Range= 3.745 Minimum Significant Difference= 43.762	
TRT1 L3 TRT2 L4 TRT3 L4	Comparisons significant at the 0.05 level are indicated by '***'.	
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES	Lower Difference Upper LEVEL Confidence Between Confidence Comparison Limit Means Limit	
16:29 Thursday, June 22, 1995 General Linear Models Procedure	CONTROL         - TRT2         - 39.046         4.716         48.479           CONTROL         - TRT3         - 38.665         5.097         48.859           CONTROL         - TRT1         - 37.458         6.304         50.066	
Dependent Variable: RESPONSE Weight:	TRT2     - CONTROL     -48.479     -4.716     39.046       TRT2     - TRT3     -43.381     0.381     44.143	
Source DF Squares Square F Value Pr > F	TRT3 - CONTROL -48.859 -5.097 38.665	
5 10269.910 5423.303 2.65 0.0578	TRT3 - TRT1 -44.143 -0.381 43.381 - TRT1 -42.556 1.206 44.968	
Corrected Total 59 130986.934	TRT1         -         CONTROL         -50.066         -6.304         37.458           TRT1         -         TRT2         -45.349         -1.587         42.175           TRT1         -         TRT3         -44.968         -1.206         42.556	
K-Square C.V. Root MSE RESPONSE Mean		

File:C:\SASWIN\CHICKS.OUT Page 37	File:C:\SASWIN\CHICKS.OUT Page 38
1K12       - 1K11       -76.869       -2.229       72.411         TRT2       - CONTROL       -72.738       1.902       76.542         TRT2       - TRT3       -66.892       7.749       82.389	INTERCEPT 0
CONTROL         TRT1         -78.771         -4.131         70.509           CONTROL         TRT2         -76.542         -1.902         72.738           CONTROL         TRT3         -68.794         5.846         80.486	LEVEL CONTROL L2 TRT1 L3 TRT2 L4 TRT3 -L2-L3-L4
TRT3       - TRT1       -84.617       -9.977       64.663         TRT3       - TRT2       -82.389       -7.749       66.892         TRT3       - CONTROL       -80.486       -5.846       68.794	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 16. ANALYSIS OF HS/ES DATA
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES	16:29 Thursday, June 22, 1995 General Linear Models Procedure
16:29 Thursday, June 22, 1995	Dependent Variable: RESPONSE Weight:
General Linear Models Procedure	Source DF Squares Square F Value Pr > 5
Dunnett's One-tailed T tests for variable: RESPONSE	Model 3 38937.227 12979.076 3.11 0.0335
comparisons of all treatments against a control.	Error 56 233833.519 4175.599
Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 5959.201 Critical Value of Dunnett's T= 2.107	Corrected Total 59 272770.745
Minimum Significant Difference= 59.391 Comparisons significant at the 0.05 level are indicated by '***'.	R-Square C.V. Root MSE RESPONSE Mean 0.142747 115.1144 64.619 56.134
Simultaneous Simultaneous Lower Difference Upper LEVEL Confidence Between Confidence Comparison Limit Means Limit	Source         DF         Type I SS         Mean         Square         F         Value         Pr > F           LEVEL         3         38937.227         12979.076         3.11         0.0335
TRT1         - CONTROL         -55.260         4.131         63.522           TRT2         - CONTROL         -57.489         1.902         61.293           TRT3         - CONTROL         -65.237         -5.846         53.545	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES	General Linear Models Proceeding
16:29 Thursday, June 22, 1995	Least Squares Means
General Linear Models Procedure Class Level Information	LEVEL RESPONSE Pr >  T  HO: LSMEAN(i)=LSMEAN(j) LSMEAN i/j 1 2 3 4
Class Levels Values LEVEL 4 CONTROL TRT1 TRT2 TRT3	CONTROL         55.5792297         1         0.0998         0.7880         0.1605           TRT1         61.8291145         2         0.0998         0.1800         0.0036           TRT2         56.6098236         3         0.7880         0.1800         0.0036           TRT3         50.1706885         4         0.1605         0.0036         0.1053
Number of observations in data set = 64	NOTE: To ensure overall protection level, only probabilities associated with pre-planned comparisons should be used.
: Due to missing values, only 60 observations can be used in this analysis.	EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES
EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 16. ANALYSIS OF HS/ES DATA	10: http://www.second.com/ ************************************
16:29 Thursday, June 22, 1995	General Linear Models Procedure
Type I Estimable Functions for: LEVEL	NOTE: This test controls the type I experimentwise error rate

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# EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 17. ANALYSIS OF EGGSHELL THICKNESS DATA

16:29 Thursday, June 22, 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= 55 MSE= 0.000291 Critical Value of Studentized Range= 3.747

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

LEVEL Comparison	Simultaneou Lower Confidence Limit	s Difference Between Means	Simultaneous Upper Confidence Limit
CONTROL - TRT1	-0.016165	0.000333	0.016831
CONTROL - TRT2	-0.009766	0.007024	0.023814
CONTROL - TRT3	-0.004831	0.011667	0.028165
TRT1 - CONTROL	-0.016831	-0.000333	0.016165
TRT1 - TRT2	-0.010100	0.006690	0.023481
TRT1 - TRT3	-0.005165	0.011333	0.027831
TRT2 - CONTROL	-0.023814	-0.007024	0.009766
TRT2 - TRT1	-0.023481	-0.006690	0.010100
TRT2 - TRT3	-0.012147	0.004643	0.021433
TRT3 - CONTROL	-0.028165	-0.011667	0.004831
TRT3 - TRT1	-0.027831	-0.011333	0.005165
TRT3 - TRT2	-0.021433	-0.004643	0.012147

EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 17. ANALYSIS OF EGGSHELL THICKNESS DATA

16:29 Thursday, June 22, 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= 55 MSE= 0.000291 Critical Value of Dunnett's T= 2.109

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

L Com	EVEL Iparison	Simultaneou Lower Confidence Limit	s Difference Between Means	Simultaneous Upper Confidence	
TRT1	- CONTROL	-0.013468	-0.000333	0.012801	
TRT2	- CONTROL	-0.020391	-0.007024	0.006343	
TRT3	- CONTROL	-0.024801	-0.011667	0.001468	

EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 18. ANALYSIS OF HATCHLING WEIGHT DATA

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\*\*\*\*\*\* 16:29 Thursday, June 22, 1995

General Lineár 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 60 observations can be used in this

EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 18. ANALYSIS OF HATCHLING WEIGHT DATA

16:29 Thursday, June 22, 1995

	General Linear Type I Estimable	Models Procedure Functions for: LEVE
	Coefficients	
	0	
CONTROL TRT1	L2 L3	
TRT2 TRT3	L4 -L2-L3-L4	

# EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 18. ANALYSIS OF HATCHLING WEIGHT DATA

16:29 Thursday, June 22, 1995

General Linear Models Procedure

Dependent Variable: HATWT

TRT1 TRT2 TRT3

Effect INTERCEPT LEVEL

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	4.0666667	1.3555556	4.55	0.0063
Error	56	16.6666667	0.2976190		
Corrected Total	59	20.7333333			
	R-Square	C.V.	Root MSE	HA	TWT Mean
	0.196141	10.04070	0.5455		5.4333
Source	DF	• Type I SS	Mean Square	F Value	Pr > F
LEVEL	3	4.0666667	1.3555556	4.55	0.0063

#### EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 18. ANALYSIS OF HATCHLING WEIGHT DATA \*\*\*\*\*\*\*\*\*\*\*

16:29 Thursday, June 22, 1995

General Linear Models Procedure Least Squares Means

Source	DF	Type I SS	Mean Sou	are F	Value Pr> =		File:C
LEVEL	3	48.933333	16.311	111	2.51 0.0680		
EFFECT	S OF THIOBENCAR 19. ANALYSIS OF	B ON THE REP		OF BOB	HITES		
	*****	******	16:29 T	*******	lune 22 1005		
	General L Lea	inear Models st Squares M	Procedur leans	е			Com
LEVEL	SURVWT LSMEAN	Pr >  T  H i/i 1	0: LSMEAN	(i)=LSME	AN(j)		LOW
CONTROL	21.4666667	1	0.6181	0.2874	0.0498		
TRT2 TRT3	20.4666667	2 0.6181 3 0.2874 4 0.0498	0.1208	0.1208 1 <sup>°</sup> 3550	0.0151 0.3559		
NOTE: To ensure	e overall prote	ction level,	only prof	). Dabiliti	es associated		
HICH Pre	pranied compar-	Isons should	be used.				. / `
EFFECTS	OF THIOBENCAR	ON THE REPR 14-DAY SURV	RODUCTION	OF BOBW	HITES		r
	************	**********	16:29 Th	ursday,	June 22, 1995		
	General Li	near Models	Procedure				د د د ایک <sup>بع</sup> ان
Tukey's	Studentized Rar	nge (HSD) Tes	t for var	iable:	SURVWT		
NOTE: Thi	s test controls	the type I	expérimen	twise e	ror rate.		
Alp	ha= 0.05 Confi Critical Value	dence= 0.95 of Studentiz	df= 56 ed Range=	MSE= 6.5 3.745	5		
				/ 451			
Comparisons	significant at	the 0.05 lev	el are in	4651 dicated	bv /***/	N	DTE: D
Comparisons :	significant at Sim	the 0.05 lev	el are∘in	4651 dicated Simultar	by (***/.	N	OTE: D a
Comparisons LEVI Compa	significant at Sim Sim Co	the 0.05 lev ultaneous Lower Di nfidence	el are in fference Between Means	4651 dicated Simultar Uppe Confide	by (***/. neous nce	N	OTE: D a
Comparisons LEVI Compa TRT1	Significant at Sim EL Co tison	the 0.05 lev ultaneous Lower Di nfidence Limit 1.9984	el are in fference Between Means 0.4667	4651 dicated Simultar Uppe Confide Limi 2 931	by /***/ Prince t	N	OTE: D a
Comparisons LEVI Compar TRT1 TRT1 TRT1 TRT1	significant at Sim EL Co tison CONTROL TRT2 TRT3	the 0.05 lev ultaneous Lower Di nfidence Limit 1.9984 J.9984 J.1318	fference Between Means 0.4667 1.4667 2.3333	4651 dicated Simultar Uppe Confide Limi 2.931 3.931 4.798	by (**** Neous Ince t 8 8 8	N	OTE: D a
Comparisons LEVI Compar TRT1 TRT1 TRT1 CONTROL CONTROL	rinnidan signi significant at Sim EL Co rison CONTROL TRT2 TRT3 TRT1 TRT1	the 0.05 lev Lower Di nfidence Di Limit 1.9984 0.9984 0.1318 2.9318 -(	el are in fference Between Means 0.4667 1.4667 2.3333 ).4667	4651 dicated Simultar Uppe Confide Limi 2.931 3.931 4.798 1.998	by (****/ heous ince t 8 8 8 4 4	N Ef	OTE: D a fect
Comparisons LEVI Compar TRT1 - TRT1 - TRT1 - TRT1 - CONTROL - CONTROL -	Finitian Signi Significant at Sim EL Co tison CONTROL TRT2 TRT3 TRT1 TRT2 TRT3 CO TRT3 CO TRT1 TRT2 TRT3 CO CO CO CO CO CO CO CO CO CO CO CO CO	the 0.05 lev Ultaneous Lower Di nfidence Di Limit 1.9984 0.9984 0.1318 2.9318 1.4651 1.5984	fference Between Means 0.4667 1.4667 2.3333 0.4667 1.0000 1.8667	4651 dicated Simultar Uppe Confide Limi 3.931 4.798 1.998 3.465 4.331	by (***/. neous r nce t 8 8 4 4 1 	N Ef IN	OTE: D a fect TERCEF
Comparisons LEVI Comparisons TRT1 - TRT1 - TRT1 - CONTROL - CONTROL - CONTROL - TRT2 - TRT2 -	rinnidan Signi Significant at Sim EL Co tison CONTROL TRT2 TRT3 TRT1 TRT3 TRT1 TRT3 TRT1 TRT3 CONTROL	the 0.05 lev Lower Di nfidence Di 1.9984 0.9984 0.1318 2.9318 1.4651 0.5984 1.9318 1.4651 1.9318 1.4651 1.9318 1.4651 1.9318 1.9318 1.4651 1.9318 1	el are in fference Between Means 0.4667 1.4667 2.3333 0.4667 1.0000 1.8667	4651 dicated Simultar Uppe Confide Limi 2.931 3.931 4.798 3.465 4.331 0.998	by (****. neous in t t 8 8 8 4 4 4 4 4 4 4 4 4	N Ef TN	OTE: D a fect TERCEF VEL
Comparisons LEVI Comparisons TRT1 - TRT1 - TRT1 - CONTROL - CONTROL - CONTROL - TRT2 - TRT2 - TRT2 - TRT2 -	ritinicant at significant at Sim EL Co rison CONTROL - TRT2 - TRT1 - TRT3 - TRT1 - TRT3 - TRT1 - TRT3 - TRT1 - TRT3 - TRT3 -	the 0.05 lev ultaneous Lower Di nfidence Limit 1.9984 0.9984 0.1318 2.9318 -1 1.4651 -1 5.984 C	el are in fference Between Means 0.4667 1.4667 2.3333 0.4667 1.0000 1.8667 1.4667 1.0000 1.8667	4651 dicated Simultar Uppe Confide Limi 3.931 4.798 3.465 4.331 0.998 1.465 3.331	by /***/. neous r nce t 8 8 8 4 4 4 1 8 8 4 4 1 8	N Ef TN	OTE: D a fect ITERCEF VEL
Comparisons LEVI Comparisons TRT1 - TRT1 - TRT1 - CONTROL - CONTROL - CONTROL - TRT2 - TRT2 - TRT2 - TRT2 - TRT3 - TRT3 -	rinnican signi significant at Sim EL Co tison CONTROL TRT2 TRT3 TRT1 TRT3 TRT1 CONTROL TRT3 TRT3 TRT3 TRT1 CONTROL TRT1 CONTROL TRT1 CONTROL CONTROL CONTROL CONTROL CONTROL	the 0.05 lev Lower Di nfidence Di Limit 1.9984 0.9984 0.1318 2.9318 1.4651 1.5984 1.5984 0.7984 2.7984 1.7984 1.7984 1.7984 1.4651 1.5984 1.5984 1.4651 1.5984 1.	el are in fference Between Means 0.4667 1.4667 2.3333 0.4667 1.0000 1.8667 1.4667 1.0000 1.8667 2.3333 8667	4651 dicated Simultar Uppe Confide Limi 2.931 3.931 4.798 3.465 4.331 0.998 1.465 3.3318 0.1318 0.1318	by (****/ neous in ince t 8 8 4 4 4 1 8 8 4 4 1 3 3	N F T N	OTE: D a fect ITERCEF VEL

19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT DATA

16:29 Thursday, June 22, 1995

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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= 56 MSE= 6.5 Critical Value of Dunnett's T= 2.107 Minimum Significant Difference= 1.9615

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

LEVEL Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
RT1 - CONTROL	-1.4948	0.4667	2.4281
RT2 - CONTROL	-2.9615	-1.0000	0.9615
RT3 - CONTROL	-3.8281	-1.8667	0.0948

EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 20. ANALYSIS OF FOOD CONSUMPTION DATA

16:29 Thursday, June 22, 1995

68.7

General Linear Models Procedure Class Level Information

Class Levels Values

LEVEL 4 CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 64

OTE: Due to missing values, only 63 observations can be used in this analysis.

EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 20. ANALYSIS OF FOOD CONSUMPTION DATA

16:29 Thursday, June 22, 1995

General Linear Models Procedure Type I Estimable Functions for: LEVEL

	- 14 L T			Coet	110	ients
_				1.1		- S
P	I		1	0	Ч. I	1.11
	CON	ITROL		12	- 11	deg på

TRT1 L3 TRT2 L4 TRT3 -L2-L3-L4

### EFFECTS OF THIOBENCARB ON THE REPRODUCTION OF BOBWHITES 20. ANALYSIS OF FOOD CONSUMPTION DATA

16:29 Thursday, June 22, 1995

General Linear Models Procedure

Dependent Variable: FOOD

Corrected Total 59	20830.933		File:C:\SASWIN	CHICKS.OUT	Page 50		
R-Square	C.V. Root M	SE POSTM Mean	IRT1 TRT1 TPT1	- TRT2 - TRT3	-11.342 -10.808	0.867	13.075
0.579529、	5.645455 12,6	19 223,53	TRT2	- TRT1	-10.742	1.467	13.675
ource DF	Type I SS Mean Squa	re F Value Pr > F	TRT2 TRT2	- TRT3 - CONTROL	-13.075 -11.675 -11.608	-0.867 0.533	11.342 12.742
EVEL 3 REM 1	20.667 12051.454 12051.40	<b>39</b> 0.04 0.9879	TRT3 TRT3	- TRT1	-13.608	-1.400	12.808
ource DF	Type III SS Mean Squar	e F Value Dr 5	TRT3	- CONTROL	-12.742 -12.142	-0.533 0.067	11.675 12.275
EVEL REM 1	864-596 288.19 12051.454 12051.45	9 1.81 0.1561 4 75.68 0.0001	CONTROL CONTROL CONTROL	TRT1 TRT2 TRT3	-13.675 -12.808 -12.275	-1.467 -0.600 -0.067	10.742 11.608 12.142
EFFECTS OF THIOBENCA 21. COVARIATE AN	RE ON THE REPRODUCTION O	F BOBWHITES HT DATA	EFFECTS 21. ***	OF THIOBEN COVARIATE **********	ICARB ON THE RI ANALYSIS OF MA	EPRODUCTION	DF BOBWHITES SHT DATA
General L	inear Models Procedure	rsday, June 22, 1995		Genera	l Linear Model	s Procedure	Irsday, June 22, 1995
LEVEL	st Squares Means		Duni	nett's One-	tailed T tests	for variabl	e: POSTM
LSMEAN	Std Err Pr > LSMEAN HO:LSMEA	T   LSMEAN N=0 Number	NOTE: This com	s tests cont parisons of	trols the type	I experimen	twise error for
CONTROL         219.689421           TRT1         228.723125           TRT2         225.878710           TRT3         219.842077	3.280483 0.0 3.294867 0.0 3.268847 0.0 3.279351 0.0	001 1 001 2 001 3 001 4	Alpha=	0.05 Conf Critical Minimum Si	idence= 0.95 Value of Dunn gnificant Dif	df= 55 MSE ett's T= 2.1 ference= 9.7	= 159.2511 28 127
Pr > [T] 1	10: LSMEAN(i)=LSMEAN(j)		Comparisons s	ignificant	at the 0.05 le	evel are ind	cated by /***/
i/j 1 2 0.0592 3 0.1889 4 0.9737	2 3 0.0592 0.1889 0.973 0.5401 0.0634 0.5401 0.1998		LÉVE Compar	İson	Simultaneous Lower D Confidence Limit	Si ifference Between ( Means	multaneous Upper onfidence Limit
E: To ensure overall protec with pre-planned compari	tion level, only probabi sons should be used.	lities associated	IRT1 - ( TRT2 - ( TRT3 - (	CONTROL CONTROL CONTROL	-8.246 -9.113 -9.646	1.467 0.600 0.067	11.179 10.313 9.779
EFFECTS OF THIOBENCARB 21. COVARIATE ANAL	ON THE REPRODUCTION OF SIS OF MALE BODY WEIGHT	BOBWHITES DATA *****	EFFECTS 0 22. CO ******	F THIOBENCA VARIATE ANA **********	RB ON THE REPR LYSIS OF FEMAL	RODUCTION OF E BODY WEIG	BOBWHITES
General Lir	16:29 Thurso	day, June 22, 1995		General	Linear Models	16:29 Thurs	day, June 22, 1995
Tukey's Studentized Ran	ge (HSD) Test for variat		<b>n</b>	Class	s Level Inform	ation	
NOTE: This test controls	the type I experimentwic	e error rate		155 Level /Fl	s Values		
Alpha= 0.05 Confiden Critical Value o Minimum Signif	ce= 0.95 df= 55 MSE= 1 f Studentized Range= 3.7 cant Difference= 42 200	59.2511 47	Nu	mber of obs	ervations in d	IRT1 TRT2 TR data set = 4	<b>13</b>
omparisons significant at th	e 0.05 level are indica	ted by /***/	NOTE: Due to missi	ng values	only 40		
Simul	taneous Simul	taneous	analysis.		onry ou observ	ations can b	e used in this
LEVEL Conf Comparison L	idence Between Cont imit Means L	Ipper Idence Imit	EFFECTS OF 22. COV/ *******	THIOBENCARE	3 ON THE REPRO	DUCTION OF B BODY WEIGHT	OBWHITES DATA *****