

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

1. **CHEMICAL:** Azoxystrobin PC Code No.: 129081  
2. **TEST MATERIAL:** ICIA55404 Purity: 96.2%  
3. **CITATION:**

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

Title: ICIA55404: Effects on Reproduction in  
Bobwhite Quail After Dietary  
Administration

Study Completion Date: June 1, 1994

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

Sponsor: Zeneca Ag Products, Wilmington, DE

Laboratory Report ID: ISN 314/942363

MRID No.: 436781-12

4. **REVIEWED BY:**

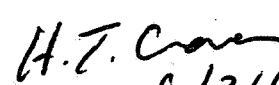
William Erickson  
Biologist  
EEB/EFED/EPA

Signature: 

Date: 4/01/96

5. **APPROVED BY:**

Harry Craven  
Section Head 4  
EEB/EFED/EPA

Signature: 

Date: 6/21/96

6. **STUDY PARAMETERS:**

**Scientific Name of Test Organism:** *Colinus virginianus*

**Age of Test Organisms at Test Initiation:** 11 months

**Definitive Study Duration:** 22 weeks

7. **CONCLUSIONS:** This study is not scientifically sound and does not meet the guideline requirements for an avian reproduction study using bobwhite quail.

MRID No. 436781-12

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2. **TEST MATERIAL:** ICIA55404 **Purity:** 96.2%

3. **CITATION:**

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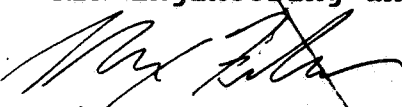
**Sponsor:** Zeneca Ag Products, Wilmington, DE

**Laboratory Report ID:** ISN 314/942363

**MRID No.:** 436781-12

**DP Barcode:** ~~D217072, D217078~~

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

**Signature:** 

**Date:** 1/22/96

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

**Signature:** P. Kosalwat

**Date:** 1/22/96

5. **APPROVED BY:**

**Signature:**

**Date:**

6. **STUDY PARAMETERS**

**Scientific Name of Test Organism:** *Colinus virginianus*

**Age of Test Organisms at Test Initiation:** 11 months

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7. **CONCLUSIONS:** This study is not scientifically sound and does not meet the guideline requirements for an avian reproduction study using bobwhite quail. When compared to the control, there were no statistically significant effects on any of the parameters measured at any concentrations tested (500, 1200, and 3000 ppm).

**Results Synopsis**

**Most sensitive endpoints:** None were affected.

**NOEC:** 3000 ppm

**LOEC:** Not determined.

**8. ADEQUACY OF THE STUDY:**

- A. Classification:** Invalid.
- B. Rationale:** Seven of 20 control pens were eliminated due to mortality of the birds. In addition, no eggs were produced in 2 of the 13 remaining pens. This high mortality and infertility of some control birds cast doubt on the acceptability of the control used in this test. The toxic effects of the test chemical could not be evaluated due to the questionable control group.
- C. Repairability:** No.

**9. GUIDELINE DEVIATIONS:**

1. The birds in this study were approximately 11 months old; although, typically, the first breeding season begins between 22 to 25 weeks of age.
2. Neither the highest test concentration showed any significant effect nor the maximum field residue level was reported.
3. The humidity in the egg storage unit and egg hatcher was not reported.
4. Body weights were recorded biweekly up to week 6, but not to week 8 as recommended.

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

| Guideline Criteria                                                                                                                                                                                  | Reported Information                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| <b><u>Species</u></b><br>A wild waterfowl species, preferably the mallard ( <i>Anas platyrhynchos</i> ), or an upland game species, preferably the northern bobwhite ( <i>Colinus virginianus</i> ) | Northern bobwhite ( <i>Colinus virginianus</i> ) |

| Guideline Criteria                                                                                 | Reported Information                                               |
|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| <b><u>Age at beginning of test</u></b><br>Birds should be approaching their first breeding season. | 11 months old; birds were approaching their first breeding season. |
| <b><u>Supplier</u></b><br>All birds should be from the same source.                                | Obtained from Mr. B. Potter, Huntingdon, Cambridgeshire, UK        |
| <b>Were birds pen-reared?</b>                                                                      | Yes.                                                               |
| <b>Were birds phenotypically indistinguishable from wild birds?</b>                                | Yes.                                                               |
| <b><u>Health observation period</u></b><br>2 to 6 weeks.                                           | 2 weeks                                                            |
| <b>Were birds healthy and without excessive mortality prior to the test?</b>                       | Yes.                                                               |

**B. Test System**

| Guideline Criteria                                                                                     | Reported Information               |
|--------------------------------------------------------------------------------------------------------|------------------------------------|
| <b>Were pens for adult birds of adequate size and designed to conform to good husbandry practices?</b> | Yes.                               |
| <b>Were pens for chicks of adequate size and designed to conform to good husbandry practices?</b>      | Yes.                               |
| <b>Where pens constructed of a nonbinding material such as galvanized or stainless steel?</b>          | Yes.                               |
| <b>Was adequate ventilation provided?</b>                                                              | Yes.                               |
| <b><u>Temperature</u></b><br>Approx. 21°C (70°F)                                                       | Mean: maximum 21°C<br>minimum 19°C |
| <b><u>Relative humidity</u></b><br>Approx. 55%                                                         | Mean: 53%                          |

| Guideline Criteria                                                                                                                                                                                                            | Reported Information                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b><u>Lighting</u></b><br/> <b>First 8 weeks:</b> 7 h per day.<br/> <b>Thereafter:</b> 16-17 h per day.<br/> At least 6 footcandles at bird level.</p>                                                                     | <p>First 4 weeks: 7 h per day.<br/> Weeks 5-11: 16 h per day.<br/> Thereafter: 17 h per day.<br/> Illumination: 5-11 foot-candles</p>                                                                    |
| <p><b><u>Diet</u></b><br/> A commercial breeder feed (or its equivalent) that is appropriate for the test species.</p>                                                                                                        | <p>Adults received avian layer diet manufactured by Special Diets Services, Witham, Essex, UK</p> <p>Chicks were fed Standard HRC chick diet supplied by Parker Brothers Ltd, Mildenhall Suffolk, UK</p> |
| <p><b><u>Preparation of test diet</u></b><br/> A premix containing the test substance should be mechanically mixed with basal diet. If an evaporative vehicle is used, it must be completely evaporated prior to feeding.</p> | <p>The test material was mixed with basal diet into a premix that was used for weekly preparation of the final diet.</p>                                                                                 |
| <p><b>Was the premix stored under conditions which maintain stability?</b></p>                                                                                                                                                | <p>Not reported.</p>                                                                                                                                                                                     |
| <p><b>Was the diet analyzed to verify homogeneity and stability of the test substance?</b></p>                                                                                                                                | <p>Yes.</p>                                                                                                                                                                                              |
| <p><b><u>Replenishment of feed</u></b></p>                                                                                                                                                                                    | <p>Adult diets were prepared weekly. Additional diets were prepared when necessary.</p> <p>Feed and water were provided <i>ad libitum</i> for the adults and offspring.</p>                              |

**C. Test Design**

| Guideline Criteria                                                                                                                                                                                                                                                   | Reported Information                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <u><b>Nominal concentrations</b></u><br>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:<br>Control, 500, 1200, 3000 ppm.<br><br>Max. residue level: Not reported. |
| <u><b>Control</b></u><br>Vehicle control.                                                                                                                                                                                                                            | Negative control.                                                                                 |
| <u><b>Vehicle</b></u><br>Corn oil or other appropriate vehicle.                                                                                                                                                                                                      | None was used.                                                                                    |
| <u><b>Vehicle amount (% of diet by weight)</b></u><br>Not more than 2%.                                                                                                                                                                                              | N/A                                                                                               |
| <u><b>Number of birds per pen</b></u><br>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.                                                                      |
| <u><b>Number of pens per group</b></u><br>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.                          | 20 pens per group.                                                                                |
| <u><b>Pre-laying exposure duration</b></u><br>At least 10 weeks prior to the onset of egg-laying.                                                                                                                                                                    | 10 weeks.                                                                                         |
| <u><b>Exposure duration with egg-laying</b></u><br>At least 10 weeks.                                                                                                                                                                                                | 12 weeks.                                                                                         |

| Guideline Criteria                                                                                                                          | Reported Information |
|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <b><u>Withdrawal period</u></b><br>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                                                                                                            |
|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Were eggs collected daily?</b>                                                                           | Yes.                                                                                                                            |
| <b><u>Egg storage temperature</u></b><br>Approximately 16°C (61°F)                                          | 16°C                                                                                                                            |
| <b><u>Egg storage humidity</u></b><br>Approximately 65%                                                     | Not reported.                                                                                                                   |
| <b>Were eggs set weekly?</b>                                                                                | Yes.                                                                                                                            |
| <b>Were eggs candled for cracks prior to being set for incubation on Day 0?</b>                             | Yes.                                                                                                                            |
| <b><u>Candling for fertility</u></b><br>Quail: approx. Day 11<br>Ducks: approx. Day 14                      | Eggs were candled on days 11 and 18.                                                                                            |
| <b><u>Transfer of eggs to hatcher</u></b><br>Bobwhite: Day 21<br>Mallard: Day 23                            | Eggs were transferred on Day 22.                                                                                                |
| <b><u>Hatching temperature</u></b><br>39°C (102°F) is recommended                                           | 37.5°C                                                                                                                          |
| <b><u>Hatching humidity</u></b><br>70% is recommended                                                       | Not reported.                                                                                                                   |
| <b><u>Day after egg set that chicks were removed and counted</u></b><br>Bobwhite: Day 24<br>Mallard: Day 27 | Chicks that had hatched were removed and counted on Day 24. All remaining hatchlings and unhatched eggs were removed on Day 25. |

**E. Eggshell Thickness Measurement**

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

**12. REPORTED RESULTS**

| Guideline Criteria                                                                                                    | Reported Information                                                        |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| <b>Quality assurance and GLP compliance statements were included in the report?</b>                                   | Yes.                                                                        |
| <b>Did diet analysis verify the concentrations of test material?</b>                                                  | Yes.                                                                        |
| <b>Did diet analysis show that the test substance was stable and homogeneous?</b>                                     | Yes.                                                                        |
| <b>Were body weights of adults reported for test initiation and biweekly up to week 8 or the onset of egg laying?</b> | No, body weights were reported biweekly up to week 6 and on the final week. |
| <b>Was average food consumption of adults reported at least biweekly?</b>                                             | Yes.                                                                        |

| Guideline Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Reported Information                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| <b>Reproductive Endpoints</b><br>The following endpoints should be reported: <ul style="list-style-type: none"> <li>• Eggs laid</li> <li>• Eggs cracked</li> <li>• Eggs set</li> <li>• Viable embryos</li> <li>• Live 3-week embryos</li> <li>• Normal hatchlings</li> <li>• 14-day-old survivors</li> <li>• Weights of 14-day-old survivors</li> <li>• Egg shell thickness</li> <li>• Total food consumption</li> <li>• Initial and final body weights, by sex</li> </ul> | All endpoints listed at left plus hatchling weight. |
| Were data reported by pen for all endpoints?                                                                                                                                                                                                                                                                                                                                                                                                                               | Yes.                                                |

**Significant Results:** There were no reductions in reproduction parameters, food consumption, or body weights at any test concentrations tested (i.e., 500, 1200, and 3000 ppm) when compared to the control.

### 13. VERIFIED STATISTICAL RESULTS

#### Means of Endpoints

| Endpoint                  | Control   | 500 ppm   | 1200 ppm  | 3000 ppm  |
|---------------------------|-----------|-----------|-----------|-----------|
| Eggs laid (EL)            | 38 (25)   | 40 (18)   | 48 (22)   | 36 (25)   |
| Eggs cracked (EC)         | 2.1 (4.1) | 3.2 (4.4) | 2.3 (2.4) | 1.4 (2.0) |
| Eggs set (ES)             | 32 (21)   | 33 (14)   | 42 (20)   | 31 (22)   |
| Viable embryos (VE)       | 26 (18)   | 29 (12)   | 37 (22)   | 27 (21)   |
| Live 3-wk embryos (LE)    | 25 (19)   | 28 (11)   | 35 (22)   | 26 (20)   |
| Normal hatchlings (NH)    | 23 (18)   | 26 (11)   | 31 (22)   | 24 (20)   |
| 14-day-old survivors (HS) | 20 (16)   | 22 (11)   | 29 (22)   | 22 (18)   |

| Endpoint                                | Control        | 500 ppm        | 1200 ppm       | 3000 ppm       |
|-----------------------------------------|----------------|----------------|----------------|----------------|
| Egg shell thickness (THICK)             | 0.21<br>(0.01) | 0.21<br>(0.01) | 0.21<br>(0.01) | 0.21<br>(0.01) |
| Hatchling weight (HATWT)                | 6.6 (0.3)      | 6.7 (0.5)      | 6.6 (0.6)      | 6.6 (0.5)      |
| 14-day-old survivor weight (SURVWT)     | 21.2 (7.3)     | 23.6 (1.6)     | 23.8 (2.9)     | 23.9 (1.7)     |
| Mean food consumption (FOOD) g/bird/day | 19.2<br>(2.1)  | 18.6<br>(1.5)  | 18.9<br>(1.9)  | 19.2<br>(2.1)  |
| Final weight of males (POSTM)           | 192 (16)       | 188 (18)       | 191 (14)       | 197 (13)       |
| Final weight of females (POSTF)         | 203 (23)       | 202 (18)       | 216 (15)       | 209 (30)       |

**Statistically Significant Endpoints:** There were no statistically significant effects on any of the parameters measured at the nominal concentrations tested (500, 1200 and 3000 ppm) when compared to the control.

| Endpoint       | Statistical Method | Levels at which Effect Was Observed |
|----------------|--------------------|-------------------------------------|
| All parameters | Dunnett's          | None                                |

14. **REVIEWER'S COMMENTS:** This study is not scientifically sound and does not meet the guideline requirements for an avian reproduction study using bobwhite quail. Seven of 20 control pens were eliminated due to mortality of the birds. In addition, no eggs were produced in 2 of the 13 remaining pens. This high mortality and infertility of some control birds cast doubt on the acceptability of the control used in this test. The toxic effects of the test chemical could not be evaluated due to the questionable control group. This study is classified as invalid.

[illegible]

|                | LEVEL   |  |       |  |       |  |       |  |
|----------------|---------|--|-------|--|-------|--|-------|--|
|                | CONTROL |  | TRT1  |  | TRT2  |  | TRT3  |  |
|                | MEAN    |  | MEAN  |  | MEAN  |  | MEAN  |  |
| EL             | 37.69   |  | 39.79 |  | 48.17 |  | 35.56 |  |
| EC             | 2.08    |  | 3.16  |  | 2.28  |  | 1.44  |  |
| ES             | 31.77   |  | 32.68 |  | 41.67 |  | 30.50 |  |
| VE             | 25.69   |  | 29.11 |  | 37.39 |  | 27.39 |  |
| LE             | 24.92   |  | 28.05 |  | 35.44 |  | 25.78 |  |
| NH             | 22.62   |  | 25.53 |  | 31.44 |  | 24.33 |  |
| HS             | 19.85   |  | 22.42 |  | 28.72 |  | 22.00 |  |
| ES/EL (%)      | 84.42   |  | 81.29 |  | 82.72 |  | 85.10 |  |
| (EL-EC)/EL (%) | 95.68   |  | 92.22 |  | 92.52 |  | 95.51 |  |
| VE/ES (%)      | 86.72   |  | 90.71 |  | 84.56 |  | 88.19 |  |
| LE/VE (%)      | 88.87   |  | 96.51 |  | 81.75 |  | 93.71 |  |
| NH/EL (%)      | 64.39   |  | 64.81 |  | 56.56 |  | 66.92 |  |
| NH/ES (%)      | 75.65   |  | 79.34 |  | 65.01 |  | 77.41 |  |
| NH/LE (%)      | 89.15   |  | 90.43 |  | 81.62 |  | 93.02 |  |

| Variable | Label     | N  | Mean    | Std Dev | CV      |
|----------|-----------|----|---------|---------|---------|
| EL       | ES/EL (%) | 13 | 37.692  | 24.672  | 65.458  |
| EC       | NH/EL (%) | 13 | 2.077   | 4.092   | 197.017 |
| ES       | THICK     | 13 | 31.769  | 20.661  | 65.033  |
| VE       | HATWT     | 13 | 25.692  | 18.377  | 71.529  |
| LE       | SURWT     | 13 | 24.923  | 18.513  | 74.282  |
| NH       | FOOD      | 13 | 22.615  | 17.863  | 78.986  |
| HS       | POSTM     | 13 | 19.846  | 15.826  | 79.745  |
| THICK    | PREF      | 11 | 0.209   | 0.012   | 5.789   |
| HATWT    | POSTF     | 10 | 6.840   | 0.344   | 5.178   |
| SURWT    | ES_EL     | 11 | 21.236  | 7.325   | 34.492  |
| FOOD     | NH_EL     | 13 | 19.223  | 2.109   | 10.970  |
| POSTM    | ENC_EL    | 13 | 181.923 | 13.512  | 7.427   |
| POSTF    | VE_ES     | 13 | 191.615 | 16.312  | 8.513   |
|          | NH_ES     | 13 | 180.615 | 8.894   | 4.919   |
|          | HS_ES     | 13 | 203.077 | 23.250  | 11.449  |
|          | LE_VE     | 11 | 84.415  | 4.810   | 5.698   |
|          | NH_LE     | 11 | 64.394  | 25.045  | 38.894  |
|          | HS_NH     | 11 | 95.675  | 5.831   | 6.094   |
|          | ES_EL     | 11 | 86.721  | 28.117  | 32.422  |
|          | NH_EL     | 11 | 75.651  | 29.598  | 39.125  |
|          | VE_ES     | 11 | 66.083  | 25.566  | 38.688  |
|          | NH_ES     | 11 | 88.870  | 29.791  | 33.522  |
|          | HS_ES     | 11 | 89.149  | 12.359  | 13.863  |
|          | LE_VE     | 10 | 88.134  | 9.700   | 11.006  |
|          | NH_LE     | 10 |         |         |         |
|          | HS_NH     | 10 |         |         |         |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
14:50 Friday, December 22, 1995

LEVEL=CONTROL

| Variable | Label     | N  | Mean    | Std Dev | CV      |
|----------|-----------|----|---------|---------|---------|
| EL       | ES/EL (%) | 13 | 37.692  | 24.672  | 65.458  |
| EC       | NH/EL (%) | 13 | 2.077   | 4.092   | 197.017 |
| ES       | THICK     | 13 | 31.769  | 20.661  | 65.033  |
| VE       | HATWT     | 13 | 25.692  | 18.377  | 71.529  |
| LE       | SURWT     | 13 | 24.923  | 18.513  | 74.282  |
| NH       | FOOD      | 13 | 22.615  | 17.863  | 78.986  |
| HS       | POSTM     | 13 | 19.846  | 15.826  | 79.745  |
| THICK    | PREF      | 11 | 0.209   | 0.012   | 5.789   |
| HATWT    | POSTF     | 10 | 6.840   | 0.344   | 5.178   |
| SURWT    | ES_EL     | 11 | 21.236  | 7.325   | 34.492  |
| FOOD     | NH_EL     | 13 | 19.223  | 2.109   | 10.970  |
| POSTM    | ENC_EL    | 13 | 181.923 | 13.512  | 7.427   |
| PREF     | VE_ES     | 13 | 191.615 | 16.312  | 8.513   |
| POSTF    | NH_ES     | 13 | 180.615 | 8.894   | 4.919   |
| ES_EL    | HS_ES     | 13 | 203.077 | 23.250  | 11.449  |
| NH_EL    | LE_VE     | 11 | 84.415  | 4.810   | 5.698   |
| ENC_EL   | NH_LE     | 11 | 64.394  | 25.045  | 38.894  |
| VE_ES    | HS_NH     | 11 | 95.675  | 5.831   | 6.094   |
| NH_ES    | ES_EL     | 11 | 86.721  | 28.117  | 32.422  |
| HS_ES    | NH_EL     | 11 | 75.651  | 29.598  | 39.125  |
| LE_VE    | VE_ES     | 11 | 66.083  | 25.566  | 38.688  |
| NH_LE    | NH_ES     | 11 | 88.870  | 29.791  | 33.522  |
| HS_NH    | LE_VE     | 10 | 89.149  | 12.359  | 13.863  |
|          | HS_NH     | 10 | 88.134  | 9.700   | 11.006  |

LEVEL=TRT1

| Variable | Label     | N  | Mean    | Std Dev | CV      |
|----------|-----------|----|---------|---------|---------|
| EL       | ES/EL (%) | 19 | 39.789  | 17.526  | 44.048  |
| EC       | NH/EL (%) | 19 | 3.158   | 4.425   | 140.140 |
| ES       | THICK     | 19 | 32.684  | 14.357  | 43.926  |
| VE       | HATWT     | 19 | 29.105  | 11.695  | 40.181  |
| LE       | SURWT     | 19 | 28.053  | 11.247  | 40.093  |
| NH       | FOOD      | 19 | 25.526  | 10.658  | 41.754  |
| HS       | POSTM     | 19 | 22.421  | 10.848  | 48.388  |
| THICK    | PREF      | 19 | 0.206   | 0.014   | 6.973   |
| HATWT    | POSTF     | 19 | 6.647   | 0.504   | 7.578   |
| SURWT    | ES_EL     | 19 | 23.584  | 1.578   | 6.690   |
| FOOD     | NH_EL     | 19 | 18.626  | 1.493   | 8.013   |
| PREF     | VE_ES     | 19 | 184.000 | 12.279  | 6.673   |
| POSTM    | NH_ES     | 19 | 188.421 | 18.437  | 9.785   |
| POSTF    | ENC_EL    | 19 | 183.053 | 12.869  | 7.030   |

|        |                |    |         |        |        |
|--------|----------------|----|---------|--------|--------|
| POSTF  | ES/EL (%)      | 19 | 202.474 | 17.806 | 8.794  |
| ES_EL  | NH/EL (%)      | 19 | 81.290  | 9.623  | 11.838 |
| NH_EL  | (EL-EC)/EL (%) | 19 | 64.814  | 15.631 | 24.117 |
| ENC_EL | VE_ES (%)      | 19 | 92.222  | 8.208  | 8.900  |
| VE_ES  | NH_ES (%)      | 19 | 90.709  | 11.374 | 12.539 |
| NH_ES  | HS_ES (%)      | 19 | 79.345  | 14.928 | 18.815 |
| HS_ES  | LE_VE (%)      | 19 | 69.056  | 20.819 | 30.148 |
| LE_VE  | NH_LE (%)      | 19 | 96.511  | 3.286  | 3.405  |
| NH_LE  | HS_NH (%)      | 19 | 90.429  | 10.111 | 11.181 |
| HS_NH  |                | 19 | 85.890  | 16.374 | 19.064 |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
14:50 Friday, December 22, 1995

LEVEL=TRT2

| Variable | Label          | N  | Mean    | Std Dev | CV      |
|----------|----------------|----|---------|---------|---------|
| EL       | ES/EL (%)      | 18 | 48.167  | 21.853  | 45.370  |
| EC       | NH/EL (%)      | 18 | 2.278   | 2.445   | 107.333 |
| ES       | THICK          | 18 | 41.667  | 20.413  | 48.992  |
| VE       | HATWT          | 18 | 37.389  | 22.435  | 60.003  |
| LE       | SURWT          | 18 | 35.444  | 22.364  | 63.096  |
| NH       | FOOD           | 18 | 31.444  | 21.691  | 68.982  |
| HS       | POSTM          | 18 | 28.722  | 21.954  | 76.436  |
| THICK    | PREF           | 17 | 0.212   | 0.011   | 5.191   |
| HATWT    | POSTF          | 15 | 6.600   | 0.611   | 9.252   |
| SURWT    | ES_EL          | 15 | 23.780  | 2.864   | 12.045  |
| FOOD     | NH_EL          | 18 | 18.878  | 1.896   | 10.043  |
| PREF     | VE_ES          | 18 | 183.944 | 9.656   | 5.269   |
| POSTM    | NH_ES          | 18 | 191.278 | 14.183  | 7.415   |
| POSTF    | HS_ES          | 18 | 188.611 | 6.545   | 3.470   |
| ES_EL    | LE_VE          | 18 | 215.611 | 15.089  | 6.998   |
| NH_EL    | NH_LE          | 18 | 82.720  | 15.488  | 18.724  |
| ENC_EL   | HS_NH          | 18 | 56.559  | 29.702  | 52.515  |
| VE_ES    | (EL-EC)/EL (%) | 18 | 92.520  | 11.968  | 12.936  |
| NH_ES    | VE_ES (%)      | 18 | 84.564  | 27.700  | 32.756  |
| HS_ES    | NH_ES (%)      | 18 | 65.007  | 33.822  | 52.029  |
| LE_VE    | HS_ES (%)      | 18 | 57.499  | 33.777  | 58.744  |
| NH_LE    | LE_VE (%)      | 18 | 81.747  | 32.064  | 39.224  |
| HS_NH    | NH_LE (%)      | 16 | 81.620  | 24.444  | 29.948  |
|          | HS_NH (%)      | 15 | 85.919  | 17.824  | 20.745  |

LEVEL=TRT3

| Variable | Label          | N  | Mean    | Std Dev | CV      |
|----------|----------------|----|---------|---------|---------|
| EL       | ES/EL (%)      | 18 | 35.556  | 25.192  | 70.851  |
| EC       | NH/EL (%)      | 18 | 1.444   | 2.007   | 138.913 |
| ES       | THICK          | 18 | 30.500  | 22.266  | 73.005  |
| VE       | HATWT          | 18 | 27.389  | 20.632  | 75.328  |
| LE       | SURWT          | 18 | 25.778  | 20.403  | 79.151  |
| NH       | FOOD           | 18 | 24.333  | 19.991  | 82.156  |
| HS       | POSTM          | 18 | 22.000  | 17.948  | 81.580  |
| THICK    | PREF           | 16 | 0.207   | 0.011   | 5.125   |
| HATWT    | POSTF          | 17 | 6.641   | 0.500   | 7.530   |
| SURWT    | ES_EL          | 17 | 23.888  | 1.655   | 6.929   |
| FOOD     | NH_EL          | 18 | 19.222  | 2.101   | 10.929  |
| PREF     | VE_ES          | 18 | 191.278 | 11.575  | 6.051   |
| POSTM    | NH_ES          | 18 | 197.000 | 13.079  | 6.639   |
| POSTF    | HS_ES          | 18 | 191.444 | 15.382  | 8.035   |
| ES_EL    | LE_VE          | 18 | 208.556 | 29.746  | 14.263  |
| NH_EL    | NH_LE          | 18 | 85.096  | 7.454   | 8.759   |
| ENC_EL   | HS_NH          | 17 | 66.917  | 21.859  | 32.665  |
| VE_ES    | (EL-EC)/EL (%) | 17 | 95.506  | 5.227   | 5.473   |
|          | VE_ES (%)      | 17 | 88.191  | 19.568  | 21.961  |

|    | NH ES  | HS/ES (%) | LE/VE  | NH/LE (%) | HS/NH (%) |
|----|--------|-----------|--------|-----------|-----------|
| 17 | 77.410 | 22.006    | 28.428 |           |           |
| 17 | 70.944 | 21.082    | 29.717 |           |           |
| 17 | 93.709 | 9.568     | 10.210 |           |           |
| 17 | 93.022 | 6.169     | 6.632  |           |           |
| 17 | 91.888 | 8.617     | 9.378  |           |           |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 1. ANALYSIS OF EGGS LAID

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

## Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 68 observations can be used in this analysis.

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 1. ANALYSIS OF EGGS LAID

\*\*\*\*\*

14:50 Friday, December 22, 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  |         |    |    |    |           |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 1. ANALYSIS OF EGGS LAID

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

Dependent Variable: EL

| Source          | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|----|----------------|-------------|---------|--------|
| Model           | 3  | 1610.1137      | 536.7046    | 1.08    | 0.3631 |
| Error           | 64 | 31740.8716     | 495.9511    |         |        |
| Corrected Total | 67 | 33350.9853     |             |         |        |

| R-Square | C.V.     | Root MSE | EL Mean |
|----------|----------|----------|---------|
| 0.048278 | 55.00753 | 22.270   | 40.485  |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 1610.1137 | 536.7046    | 1.08    | 0.3631 |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 1. ANALYSIS OF EGGS LAID

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

## Least Squares Means

| LEVEL   | EL         | Pr >  T | H0: LSMEAN(i)=LSMEAN(j) |
|---------|------------|---------|-------------------------|
|         | LSMEAN     | 1/j     | 2                       |
| CONTROL | 37.6923077 | 1       | 0.7944                  |
| TRT1    | 39.7894737 | 2       | 0.7944                  |
| TRT2    | 48.1666667 | 3       | 0.2009                  |
| TRT3    | 35.5555556 | 4       | 0.7929                  |

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

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 1. ANALYSIS OF EGGS LAID

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 64 MSE= 495.9511

Critical Value of Studentized Range= 3.730

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     | -10.945                             | 8.377                    | 27.699                              |
| TRT2    | - CONTROL  | -10.907                             | 10.474                   | 31.856                              |
| TRT2    | - TRT3     | -6.970                              | 12.611                   | 32.193                              |
| TRT1    | - TRT2     | -27.699                             | -8.377                   | 10.945                              |
| TRT1    | - CONTROL  | -19.047                             | 2.097                    | 23.242                              |
| TRT1    | - TRT3     | -15.088                             | 4.234                    | 23.556                              |
| CONTROL | - TRT2     | -31.856                             | -10.474                  | 10.907                              |
| CONTROL | - TRT1     | -23.242                             | -2.097                   | 19.047                              |
| CONTROL | - TRT3     | -19.245                             | 2.137                    | 23.518                              |
| TRT3    | - TRT2     | -32.193                             | -12.611                  | 6.970                               |
| TRT3    | - TRT1     | -23.556                             | -4.234                   | 15.088                              |
| TRT3    | - CONTROL  | -23.518                             | -2.137                   | 19.245                              |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 1. ANALYSIS OF EGGS LAID

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

## Dunnnett's One-tailed T tests for variable: EL

NOTE: This test controls the type I experimentwise error for

Alpha= 0.05 Confidence= 0.95 df= 64 MSE= 495.9511  
Critical Value of Dunnett's T= 2.078

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

| LEVEL<br>Comparison | Simultaneous                 |                                |                              |
|---------------------|------------------------------|--------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
| TRT2 - CONTROL      | -6.370                       | 10.474                         | 27.319                       |
| TRT1 - CONTROL      | -14.560                      | 2.097                          | 18.755                       |
| TRT3 - CONTROL      | -18.981                      | -2.137                         | 14.708                       |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
2. ANALYSIS OF EGGS CRACKED  
\*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure  
Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 68 observations can be used in this analysis.

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
2. ANALYSIS OF EGGS CRACKED  
\*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure  
Type I Estimable Functions for: LEVEL

Coefficients

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
2. ANALYSIS OF EGGS CRACKED  
\*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure

| Dependent Variable: EC |    |                   |                |
|------------------------|----|-------------------|----------------|
| Source                 | DF | Sum of<br>Squares | Mean<br>Square |
| Model                  | 3  | 27.730346         | 9.243449       |
| Error                  | 64 | 723.504948        | 11.304765      |
| Corrected Total        | 67 | 751.235294        |                |

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R-Square  
0.036913

C.V.  
148.4632

Root MSE  
3.3623

EC Mean  
2.2647

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 27.730346 | 9.243449    | 0.82    | 0.4889 |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
2. ANALYSIS OF EGGS CRACKED  
\*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure  
Least Squares Means

| LEVEL   | EC<br>LSMEAN | Pr >  T  H0: LSMEAN(i)=LSMEAN(j) |        |        |        |
|---------|--------------|----------------------------------|--------|--------|--------|
|         |              | 1/j                              | 2      | 3      | 4      |
| CONTROL | 2.07692308   | 1                                | 0.3751 | 0.8701 | 0.6071 |
| TRT1    | 3.15789474   | 2                                | 0.3751 | 0.4291 | 0.1262 |
| TRT2    | 2.27777778   | 3                                | 0.8701 | 0.4291 | 0.4599 |
| TRT3    | 1.44444444   | 4                                | 0.6071 | 0.1262 | 0.4599 |

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
2. ANALYSIS OF EGGS CRACKED  
\*\*\*\*\*

14:50 Friday, December 22, 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= 64 MSE= 11.30476  
Critical Value of Studentized Range= 3.730

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

| LEVEL<br>Comparison | Simultaneous                 |                                |                              |
|---------------------|------------------------------|--------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
| TRT1 - TRT2         | -2.037                       | 0.880                          | 3.797                        |
| TRT1 - CONTROL      | -2.111                       | 1.081                          | 4.273                        |
| TRT1 - TRT3         | -1.204                       | 1.713                          | 4.631                        |
| TRT2 - TRT1         | -3.797                       | -0.880                         | 2.037                        |
| TRT2 - CONTROL      | -3.027                       | 0.201                          | 3.429                        |
| TRT2 - TRT3         | -2.123                       | 0.833                          | 3.790                        |
| CONTROL - TRT1      | -4.273                       | -1.081                         | 2.111                        |
| CONTROL - TRT2      | -3.429                       | -0.201                         | 3.027                        |
| CONTROL - TRT3      | -2.596                       | 0.632                          | 3.861                        |
| TRT3 - TRT1         | -4.631                       | -1.713                         | 1.204                        |
| TRT3 - TRT2         | -3.790                       | -0.833                         | 2.123                        |
| TRT3 - CONTROL      | -3.861                       | -0.632                         | 2.596                        |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
3. ANALYSIS OF EGGS SET

14:50 Friday, December 22, 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= 64 MSE= 11.30476  
Critical Value of Dunnnett's T= 2.078

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

| LEVEL<br>Comparison | Simultaneous Lower Confidence Limit |        |        | Difference Between Means |       |        | Simultaneous Upper Confidence Limit |       |       |
|---------------------|-------------------------------------|--------|--------|--------------------------|-------|--------|-------------------------------------|-------|-------|
|                     | CONTROL                             | TRT1   | TRT2   | CONTROL                  | TRT1  | TRT2   | CONTROL                             | TRT1  | TRT2  |
| - CONTROL           |                                     | -1.434 | -2.342 | 1.081                    | 0.201 | -0.632 | 3.596                               | 2.744 | 1.911 |
| - CONTROL           |                                     | -3.176 | -0.632 |                          |       |        |                                     |       |       |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
3. ANALYSIS OF EGGS SET

14:50 Friday, December 22, 1995

General Linear Models Procedure  
Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 68 observations can be used in this analysis.

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
3. ANALYSIS OF EGGS SET

14:50 Friday, December 22, 1995

General Linear Models Procedure  
Type I Estimable Functions for: LEVEL

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
3. ANALYSIS OF EGGS SET

14:50 Friday, December 22, 1995

General Linear Models Procedure

Dependent Variable: ES

| Source          | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|----|----------------|-------------|---------|--------|
| Model           | 3  | 1369.6018      | 456.5339    | 1.20    | 0.3169 |
| Error           | 64 | 24344.9130     | 380.3893    |         |        |
| Corrected Total | 67 | 25714.5147     |             |         |        |

|          |          |          |         |
|----------|----------|----------|---------|
| R-Square | C.V.     | Root MSE | ES Mean |
| 0.053262 | 56.84710 | 19.504   | 34.309  |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 1369.6018 | 456.5339    | 1.20    | 0.3169 |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
3. ANALYSIS OF EGGS SET

14:50 Friday, December 22, 1995

General Linear Models Procedure  
Least Squares Means

| LEVEL   | ES         | LSMEAN | i/j    | Pr >  T | HO: LSMEAN(i)=LSMEAN(j) |
|---------|------------|--------|--------|---------|-------------------------|
| CONTROL | 31.7692308 | 1      | 0.8967 | 0.1681  | 0.8587                  |
| TRT1    | 32.6842105 | 2      | 0.8967 | 0.1663  | 0.7346                  |
| TRT2    | 41.6666667 | 3      | 0.1681 | 0.1663  | 0.0907                  |
| TRT3    | 30.5000000 | 4      | 0.8587 | 0.7346  | 0.0907                  |

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
3. ANALYSIS OF EGGS SET

14:50 Friday, December 22, 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= 64 MSE= 380.3893  
Critical Value of Studentized Range= 3.730

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

| LEVEL<br>Comparison | Simultaneous Lower Confidence Limit |        |         | Difference Between Means |        |        | Simultaneous Upper Confidence Limit |      |      |
|---------------------|-------------------------------------|--------|---------|--------------------------|--------|--------|-------------------------------------|------|------|
|                     | TRT1                                | TRT2   | TRT3    | CONTROL                  | TRT1   | TRT2   | CONTROL                             | TRT1 | TRT2 |
| - TRT1              |                                     | -7.939 | -8.828  | 8.982                    | 25.904 | 28.623 |                                     |      |      |
| - CONTROL           |                                     | -8.828 | -5.982  | 9.897                    | 28.316 |        |                                     |      |      |
| - TRT3              |                                     | -5.982 | -25.904 | 11.167                   |        |        |                                     |      |      |
| - TRT2              |                                     |        | -8.982  |                          |        |        |                                     |      |      |

```

TRT1 - CONTROL      -17.603      0.915      19.433
TRT1 - TRT3         -14.758      2.184      19.106

CONTROL - TRT2      -28.623      -9.897      8.828
CONTROL - TRT1      -19.433     -0.915     17.603
CONTROL - TRT3      -17.456      1.269     19.995

TRT3 - TRT2        -28.316     -11.167      5.982
TRT3 - TRT1        -19.106     -2.184     14.758
TRT3 - CONTROL     -19.995     -1.269     17.456

```

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 3. ANALYSIS OF EGGS SET

\*\*\*\*\*  
14:50 Friday, December 22, 1995

## General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 64 MSE= 380.3893  
Critical Value of Dunnnett's T= 2.078

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

| LEVEL<br>Comparison | Simultaneous                 |                                |                              |
|---------------------|------------------------------|--------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
| TRT2 - CONTROL      | -4.854                       | 9.897                          | 24.649                       |
| TRT1 - CONTROL      | -13.673                      | 0.915                          | 15.503                       |
| TRT3 - CONTROL      | -16.021                      | -1.269                         | 13.483                       |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 4. ANALYSIS OF VIABLE EMBRYOS

\*\*\*\*\*  
14:50 Friday, December 22, 1995

General Linear Models Procedure  
Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 68 observations can be used in this analysis.

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 4. ANALYSIS OF VIABLE EMBRYOS

\*\*\*\*\*  
14:50 Friday, December 22, 1995

General Linear Models Procedure  
Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT

0

```

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

```

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 4. ANALYSIS OF VIABLE EMBRYOS

\*\*\*\*\*  
14:50 Friday, December 22, 1995

## General Linear Models Procedure

Dependent Variable: VE

| Source          | DF | Sum of<br>Squares | Mean<br>Square | F Value | Pr > F |
|-----------------|----|-------------------|----------------|---------|--------|
| Model           | 3  | 1359.4004         | 453.1335       | 1.30    | 0.2821 |
| Error           | 64 | 22307.1143        | 348.5487       |         |        |
| Corrected Total | 67 | 23666.5147        |                |         |        |

| R-Square | C.V.     | Root MSE | VE Mean |
|----------|----------|----------|---------|
| 0.057440 | 61.83746 | 18.669   | 30.191  |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 1359.4004 | 453.1335    | 1.30    | 0.2821 |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 4. ANALYSIS OF VIABLE EMBRYOS

\*\*\*\*\*  
14:50 Friday, December 22, 1995

General Linear Models Procedure  
Least Squares Means

| LEVEL   | VE         |     |        |        | Pr >  T  H0: LSMEAN(I)=LSMEAN(J) |
|---------|------------|-----|--------|--------|----------------------------------|
|         | LSMEAN     | i/j | 1      | 2      |                                  |
| CONTROL | 25.6923077 | 1   | 0.6133 | 0.0900 | 0.8036                           |
| TRT1    | 29.1052632 | 2   | 0.6133 | 0.1821 | 0.7808                           |
| TRT2    | 37.3888889 | 3   | 0.0900 | 0.1821 | 0.1130                           |
| TRT3    | 27.3888889 | 4   | 0.8036 | 0.7808 | 0.1130                           |

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

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 4. ANALYSIS OF VIABLE EMBRYOS

\*\*\*\*\*  
14:50 Friday, December 22, 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= 64 MSE= 348.5487  
Critical Value of Studentized Range= 3.730

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

| LEVEL<br>Comparison | Simultaneous                 |                              | Difference<br>Between<br>Means | Simultaneous                 |                              |
|---------------------|------------------------------|------------------------------|--------------------------------|------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Upper<br>Confidence<br>Limit |                                | Lower<br>Confidence<br>Limit | Upper<br>Confidence<br>Limit |
| TRT2 - TRT1         | -7.915                       | 8.284                        | 10.000                         | 24.482                       | 26.416                       |
| TRT2 - TRT3         | -6.228                       | 11.697                       | 11.697                         | 29.621                       |                              |
| TRT1 - TRT2         | -24.482                      | -8.284                       | -10.000                        | 6.416                        |                              |
| TRT1 - TRT3         | -14.582                      | 1.716                        | -1.716                         | 14.482                       |                              |
| TRT1 - CONTROL      | -14.313                      | 3.413                        | 1.697                          | 19.621                       |                              |
| TRT3 - TRT2         | -26.416                      | -10.000                      | -1.697                         | 6.228                        |                              |
| TRT3 - TRT1         | -17.915                      | -3.413                       | -1.697                         | 14.313                       |                              |
| TRT3 - CONTROL      | -16.228                      | -1.697                       | -1.697                         | 16.228                       |                              |
| CONTROL - TRT2      | -29.621                      | -11.697                      | -11.697                        | 6.228                        |                              |
| CONTROL - TRT1      | -21.139                      | -3.413                       | -3.413                         | 14.313                       |                              |
| CONTROL - TRT3      | -19.621                      | -1.697                       | -1.697                         | 16.228                       |                              |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 4. ANALYSIS OF VIABLE EMBRYOS

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 64 MSE= 348.5487

Critical Value of Dunnnett's T= 2.078

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

| LEVEL<br>Comparison | Simultaneous                 |                              | Difference<br>Between<br>Means | Simultaneous                 |                              |
|---------------------|------------------------------|------------------------------|--------------------------------|------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Upper<br>Confidence<br>Limit |                                | Lower<br>Confidence<br>Limit | Upper<br>Confidence<br>Limit |
| TRT2 - CONTROL      | -2.424                       | 11.697                       | 11.697                         | 25.818                       |                              |
| TRT1 - CONTROL      | -10.551                      | 3.413                        | 3.413                          | 17.377                       |                              |
| TRT3 - CONTROL      | -12.424                      | 1.697                        | 1.697                          | 15.818                       |                              |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

## Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 68 observations can be used in this analysis.

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

\*\*\*\*\*

14:50 Friday, December 22, 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 |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

## Dependent Variable: LE

| Source          | DF | Sum of<br>Squares | Mean<br>Square | F Value | Pr > F |
|-----------------|----|-------------------|----------------|---------|--------|
| Model           | 3  | 1165.0887         | 388.3629       | 1.13    | 0.3431 |
| Error           | 64 | 21969.4260        | 343.2723       |         |        |
| Corrected Total | 67 | 23134.5147        |                |         |        |

R-Square

C.V.

Root MSE

0.050361

64.31227

18.528

LE Mean

28.809

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

## Least Squares Means

| LEVEL   | LE<br>LSMEAN | Pr >  T <br>i/j | NO: LSMEAN(1)=LSMEAN(J) |
|---------|--------------|-----------------|-------------------------|
| CONTROL | 24.9230769   | 1               | 0.6405 0.1236 0.8995    |
| TRT1    | 28.0526316   | 2               | 0.6405 0.2296 0.7102    |
| TRT2    | 35.4444444   | 3               | 0.1236 0.2296 0.1225    |
| TRT3    | 25.7777778   | 4               | 0.8995 0.7102 0.1225    |

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

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

\*\*\*\*\*

14:50 Friday, December 22, 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= 64 MSE= 343.2723  
Critical Value of Studentized Range= 3.730

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

| LEVEL<br>Comparison | Simultaneous                 |                                |                              |
|---------------------|------------------------------|--------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
| TRT2 - TRT1         | -8.683                       | 7.392                          | 23.467                       |
| TRT2 - TRT3         | -6.624                       | 9.667                          | 25.958                       |
| TRT2 - CONTROL      | -7.267                       | 10.521                         | 28.310                       |
| TRT1 - TRT2         | -23.467                      | -7.392                         | 8.683                        |
| TRT1 - TRT3         | -13.800                      | 2.275                          | 18.350                       |
| TRT1 - CONTROL      | -14.462                      | 3.130                          | 20.721                       |
| TRT3 - TRT2         | -25.958                      | -9.667                         | 6.624                        |
| TRT3 - TRT1         | -18.350                      | -2.275                         | 13.800                       |
| TRT3 - CONTROL      | -16.934                      | 0.855                          | 18.643                       |
| CONTROL - TRT2      | -28.310                      | -10.521                        | 7.267                        |
| CONTROL - TRT1      | -20.721                      | -3.130                         | 14.462                       |
| CONTROL - TRT3      | -18.643                      | -0.855                         | 16.934                       |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 5. ANALYSIS OF LIVE 3-WEEK EMBRYOS

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

Dunnnett'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= 64 MSE= 343.2723  
Critical Value of Dunnnett's T= 2.078

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

| LEVEL<br>Comparison | Simultaneous                 |                                |                              |
|---------------------|------------------------------|--------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
| TRT2 - CONTROL      | -3.492                       | 10.521                         | 24.535                       |
| TRT1 - CONTROL      | -10.729                      | 3.130                          | 16.988                       |
| TRT3 - CONTROL      | -13.159                      | 0.855                          | 14.868                       |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 6. ANALYSIS OF NORMAL HATCHLINGS

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

Class Level Information

File:b:\43678112.out Page 16

Class Levels Values

LEVEL 4 CONTROL TRT1 TRT2 TRT3

Number of observations in data set = 80

NOTE: Due to missing values, only 68 observations can be used in this analysis.

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 6. ANALYSIS OF NORMAL HATCHLINGS

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

LEVEL CONTROL L2

TRT1 L3

TRT2 L4

TRT3 -L2-L3-L4

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 6. ANALYSIS OF NORMAL HATCHLINGS

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

Dependent Variable: NH

| Source          | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|----|----------------|-------------|---------|--------|
| Model           | 3  | 733.43297      | 244.47766   | 0.76    | 0.5223 |
| Error           | 64 | 20666.25821    | 322.91028   |         |        |
| Corrected Total | 67 | 21399.69118    |             |         |        |

R-Square

0.034273

C.V.

68.53281

Root MSE

17.970

NH Mean

26.221

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 733.43297 | 244.47766   | 0.76    | 0.5223 |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 6. ANALYSIS OF NORMAL HATCHLINGS

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

Least Squares Means

| LEVEL   | NH<br>LSMEAN | Pr >  T <br>1/j | NO: LSMEAN(i)=LSMEAN(j)<br>2 3 4 |
|---------|--------------|-----------------|----------------------------------|
| CONTROL | 22.6153846   | 1               | 0.6542 0.1818 0.7937             |
| TRT1    | 25.5263158   | 2               | 0.6542 0.3205 0.8407             |

File:b:\43678112.out Page 17  
 TRT2 31.442444 3 0.1818 0.3205 0.2395  
 TRT3 24.333333 4 0.7937 0.8407 0.2395

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 6. ANALYSIS OF NORMAL HATCHLINGS  
 \*\*\*\*\*  
 14:50 Friday, December 22, 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= 64 MSE= 322.9103  
 Critical Value of Studentized Range= 3.730

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

| LEVEL<br>Comparison | Simultaneous                 |                                |                              |
|---------------------|------------------------------|--------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
| TRT2 - TRT1         | -9.673                       | 5.918                          | 21.509                       |
| TRT2 - TRT3         | -8.689                       | 7.111                          | 22.912                       |
| TRT2 - CONTROL      | -8.424                       | 8.829                          | 26.082                       |
| TRT1 - TRT2         | -21.509                      | -5.918                         | 9.673                        |
| TRT1 - TRT3         | -14.398                      | 1.193                          | 16.784                       |
| TRT1 - CONTROL      | -14.151                      | 2.911                          | 19.972                       |
| TRT3 - TRT2         | -22.912                      | -7.111                         | 8.689                        |
| TRT3 - TRT1         | -16.784                      | -1.193                         | 14.398                       |
| TRT3 - CONTROL      | -15.535                      | 1.718                          | 18.971                       |
| CONTROL - TRT2      | -26.082                      | -8.829                         | 8.424                        |
| CONTROL - TRT1      | -19.972                      | -2.911                         | 14.151                       |
| CONTROL - TRT3      | -18.971                      | -1.718                         | 15.535                       |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 6. ANALYSIS OF NORMAL HATCHLINGS  
 \*\*\*\*\*  
 14:50 Friday, December 22, 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= 64 MSE= 322.9103  
 Critical Value of Dunnnett's T= 2.078

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

| LEVEL<br>Comparison | Simultaneous                 |                                |                              |
|---------------------|------------------------------|--------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
| TRT2 - CONTROL      | -4.763                       | 8.829                          | 22.421                       |
| TRT1 - CONTROL      | -10.530                      | 2.911                          | 16.352                       |

File:b:\43678112.out Page 18  
 TRT3 - CONTROL -11.874 1.718 15.310

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 7. ANALYSIS OF 14-DAY-OLD SURVIVORS  
 \*\*\*\*\*  
 14:50 Friday, December 22, 1995

General Linear Models Procedure  
 Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 68 observations can be used in this analysis.

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 7. ANALYSIS OF 14-DAY-OLD SURVIVORS  
 \*\*\*\*\*  
 14:50 Friday, December 22, 1995

General Linear Models Procedure  
 Type I Estimable Functions for: LEVEL

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 7. ANALYSIS OF 14-DAY-OLD SURVIVORS  
 \*\*\*\*\*  
 14:50 Friday, December 22, 1995

General Linear Models Procedure

Dependent Variable: HS

| Source          | DF | Sum of<br>Squares | Mean<br>Square | F Value | Pr > F |
|-----------------|----|-------------------|----------------|---------|--------|
| Model           | 3  | 727.05030         | 242.35010      | 0.83    | 0.4848 |
| Error           | 64 | 18793.93500       | 293.65523      |         |        |
| Corrected Total | 67 | 19520.98529       |                |         |        |

R-Square C.V. Root MSE  
 0.037245 72.96639 17.136

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 727.05030 | 242.35010   | 0.83    | 0.4848 |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 7. ANALYSIS OF 14-DAY-OLD SURVIVORS

\*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure  
Least Squares Means

| LEVEL   | LSMEAN     | HS<br>1/J | Pr >  T  H0: LSMEAN(I)=LSMEAN(J) | 4             |
|---------|------------|-----------|----------------------------------|---------------|
| CONTROL | 19.8461538 | 1         | 0.6777                           | 0.1596 0.7310 |
| TRT1    | 22.4210526 | 2         | 0.6777                           | 0.2678 0.9407 |
| TRT2    | 28.7222222 | 3         | 0.1596                           | 0.2678 0.2436 |
| TRT3    | 22.0000000 | 4         | 0.7310                           | 0.9407 0.2436 |

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

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

7. ANALYSIS OF 14-DAY-OLD SURVIVORS  
\*\*\*\*\*

14:50 Friday, December 22, 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= 64 MSE= 293.6552  
Critical Value of Studentized Range= 3.730

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

| LEVEL<br>Comparison | Simultaneous<br>Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
|---------------------|----------------------------------------------|--------------------------------|------------------------------|
| TRT2 - TRT1         | -8.567                                       | 6.301                          | 21.169                       |
| TRT2 - TRT3         | -8.345                                       | 6.722                          | 21.790                       |
| TRT2 - CONTROL      | -7.577                                       | 8.876                          | 25.329                       |
| TRT1 - TRT2         | -21.169                                      | -6.301                         | 8.567                        |
| TRT1 - TRT3         | -14.447                                      | 0.421                          | 15.289                       |
| TRT1 - CONTROL      | -13.695                                      | 2.575                          | 18.845                       |
| TRT3 - TRT2         | -21.790                                      | -6.722                         | 8.345                        |
| TRT3 - TRT1         | -15.289                                      | -0.421                         | 14.447                       |
| TRT3 - CONTROL      | -14.299                                      | 2.154                          | 18.607                       |
| CONTROL - TRT2      | -25.329                                      | -8.876                         | 7.577                        |
| CONTROL - TRT1      | -18.845                                      | -2.575                         | 13.695                       |
| CONTROL - TRT3      | -18.607                                      | -2.154                         | 14.299                       |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

7. ANALYSIS OF 14-DAY-OLD SURVIVORS  
\*\*\*\*\*

14:50 Friday, December 22, 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= 64 MSE= 293.6552

Critical Value of Dunnnett's T= 2.078

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

| LEVEL<br>Comparison | Simultaneous<br>Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
|---------------------|----------------------------------------------|--------------------------------|------------------------------|
| TRT2 - CONTROL      | -4.085                                       | 8.876                          | 21.837                       |
| TRT1 - CONTROL      | -10.243                                      | 2.575                          | 15.392                       |
| TRT3 - CONTROL      | -10.808                                      | 2.154                          | 15.115                       |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

8. ANALYSIS OF EGGS SET/EGGS LAID  
\*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure  
Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 65 observations can be used in this analysis.

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

8. ANALYSIS OF EGGS SET/EGGS LAID  
\*\*\*\*\*

14:50 Friday, December 22, 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 |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

8. ANALYSIS OF EGGS SET/EGGS LAID  
\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

Dependent Variable: RESPONSE  
Weight: EL

| Source          | DF | Sum of<br>Squares | Mean<br>Square | F Value | Pr > F |
|-----------------|----|-------------------|----------------|---------|--------|
| Model           | 3  | 4989.8354         | 1663.2785      | 1.58    | 0.2029 |
| Error           | 61 | 64128.0146        | 1051.2789      |         |        |
| Corrected Total | 64 | 69117.8499        |                |         |        |

R-Square C.V. Root MSE RESPONSE Mean

|        |    |           |             |         |        |
|--------|----|-----------|-------------|---------|--------|
| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
| LEVEL  | 3  | 4989.8354 | 1663.2785   | 1.58    | 0.2029 |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 8. ANALYSIS OF EGGS SET/EGGS LAID

\*\*\*\*\*  
14:50 Friday, December 22, 1995

General Linear Models Procedure  
Least Squares Means

| LEVEL   | RESPONSE   | Pr >  T | H0: LSMEAN(I)=LSMEAN(J) |
|---------|------------|---------|-------------------------|
|         | LSMEAN     | 1/j     | 2 3 4                   |
| CONTROL | 66.8685565 | 1       | 0.4545 0.2992 0.5271    |
| TRT1    | 65.4530330 | 2       | 0.4545 0.0430 0.1328    |
| TRT2    | 68.7872401 | 3       | 0.2992 0.0430 0.6884    |
| TRT3    | 68.1064256 | 4       | 0.5271 0.1328 0.6884    |

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

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 8. ANALYSIS OF EGGS SET/EGGS LAID

\*\*\*\*\*  
14:50 Friday, December 22, 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= 61 MSE= 1051.279  
Critical Value of Studentized Range= 3.735

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

| LEVEL   | Comparison | Simultaneous Lower Confidence Limit | Difference Between Means | Simultaneous Upper Confidence Limit |
|---------|------------|-------------------------------------|--------------------------|-------------------------------------|
| TRT2    | - TRT3     | -28.283                             | 0.681                    | 29.644                              |
| TRT2    | - CONTROL  | -30.856                             | 1.919                    | 34.694                              |
| TRT2    | - TRT1     | -24.834                             | 3.334                    | 31.503                              |
| TRT3    | - TRT2     | -29.644                             | -0.681                   | 28.283                              |
| TRT3    | - CONTROL  | -31.901                             | 1.238                    | 34.376                              |
| TRT3    | - TRT1     | -25.937                             | 2.653                    | 31.244                              |
| CONTROL | - TRT2     | -34.694                             | -1.919                   | 30.856                              |
| CONTROL | - TRT3     | -34.376                             | -1.238                   | 31.901                              |
| CONTROL | - TRT1     | -31.031                             | 1.416                    | 33.862                              |
| TRT1    | - TRT2     | -31.503                             | -3.334                   | 24.834                              |
| TRT1    | - TRT3     | -31.244                             | -2.653                   | 25.937                              |
| TRT1    | - CONTROL  | -33.862                             | -1.416                   | 31.031                              |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 8. ANALYSIS OF EGGS SET/EGGS LAID

\*\*\*\*\*  
14:50 Friday, December 22, 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= 61 MSE= 1051.279  
Critical Value of Dunnnett's T= 2.069

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  | -23.749                             | 1.919                    | 27.587                              |
| TRT3  | - CONTROL  | -24.715                             | 1.238                    | 27.191                              |
| TRT1  | - CONTROL  | -26.826                             | -1.416                   | 23.995                              |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

\*\*\*\*\*  
14:50 Friday, December 22, 1995

General Linear Models Procedure  
Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 65 observations can be used in this analysis.

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

\*\*\*\*\*  
14:50 Friday, December 22, 1995

General Linear Models Procedure  
Type I Estimable Functions for: LEVEL

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

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS

\*\*\*\*\*  
14:50 Friday, December 22, 1995

## General Linear Models Procedure

File:b:\43678112.out Page 23  
Dependent Variable: RESPONSE  
Weight: ES

| Source          | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|----|----------------|-------------|---------|--------|
| Model           | 3  | 12610.856      | 4203.619    | 0.41    | 0.7459 |
| Error           | 61 | 624407.051     | 10236.181   |         |        |
| Corrected Total | 64 | 637017.908     |             |         |        |

| R-Square | C.V.     | Root MSE | RESPONSE Mean |
|----------|----------|----------|---------------|
| 0.019797 | 136.4588 | 101.17   | 74.143        |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 12610.856 | 4203.619    | 0.41    | 0.7459 |

#### ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS  
\*\*\*\*\*

14:50 Friday, December 22, 1995

#### General Linear Models Procedure Least Squares Means

| LEVEL   | RESPONSE<br>LSMEAN | Pr >  T  H0:<br>1/j | LSMEAN(i)=LSMEAN(j)<br>2 3 4 |
|---------|--------------------|---------------------|------------------------------|
| CONTROL | 69.3488604         | 1                   | 0.4617 0.3216 0.3260         |
| TRT1    | 74.1069901         | 2                   | 0.4617 0.7944 0.7666         |
| TRT2    | 75.5440750         | 3                   | 0.3216 0.7944 0.9539         |
| TRT3    | 75.8742588         | 4                   | 0.3260 0.7666 0.9539         |

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

#### ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS  
\*\*\*\*\*

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#### 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= 61 MSE= 10236.18  
Critical Value of Studentized Range= 3.735

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

| LEVEL<br>Comparison | Simultaneous<br>Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Simultaneous<br>Upper<br>Confidence<br>Limit |
|---------------------|----------------------------------------------|--------------------------------|----------------------------------------------|
| TRT3 - TRT2         | -90.047                                      | 0.330                          | 90.707                                       |
| TRT3 - TRT1         | -87.447                                      | 1.767                          | 90.982                                       |
| TRT3 - CONTROL      | -96.880                                      | 6.525                          | 109.931                                      |
| TRT2 - TRT3         | -90.707                                      | -0.330                         | 90.047                                       |
| TRT2 - TRT1         | -86.460                                      | 1.437                          | 89.334                                       |

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| TRT2 - CONTROL | 6.195    | 108.466 |
|----------------|----------|---------|
| TRT1 - TRT3    | -90.982  | 87.447  |
| TRT1 - TRT2    | -89.334  | 86.460  |
| TRT1 - CONTROL | -96.487  | 106.003 |
| CONTROL - TRT3 | -109.931 | 96.880  |
| CONTROL - TRT2 | -108.466 | 96.076  |
| CONTROL - TRT1 | -106.003 | 96.487  |

#### ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

9. ANALYSIS OF VIABLE EMBRYOS/EGGS SETS  
\*\*\*\*\*

14:50 Friday, December 22, 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= 61 MSE= 10236.18  
Critical Value of Dunnnett's T= 2.069

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

| LEVEL<br>Comparison | Simultaneous<br>Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Simultaneous<br>Upper<br>Confidence<br>Limit |
|---------------------|----------------------------------------------|--------------------------------|----------------------------------------------|
| TRT3 - CONTROL      | -74.458                                      | 6.525                          | 87.509                                       |
| TRT2 - CONTROL      | -73.900                                      | 6.195                          | 86.290                                       |
| TRT1 - CONTROL      | -74.533                                      | 4.758                          | 84.049                                       |

#### ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

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

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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 = 80

NOTE: Due to missing values, only 65 observations can be used in this analysis.

#### ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

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

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#### General Linear Models Procedure Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIALE EMBRYOS  
\*\*\*\*\*  
14:50 Friday, December 22, 1995

General Linear Models Procedure

Dependent Variable: RESPONSE

| Source          | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|----|----------------|-------------|---------|--------|
| Model           | 3  | 8774.4299      | 2924.8100   | 1.12    | 0.3461 |
| Error           | 61 | 158615.8653    | 2600.2601   |         |        |
| Corrected Total | 64 | 167390.2953    |             |         |        |

| R-Square | C.V.     | Root MSE | RESPONSE Mean |
|----------|----------|----------|---------------|
| 0.052419 | 63.26588 | 50.993   | 80.601        |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 8774.4299 | 2924.8100   | 1.12    | 0.3461 |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIALE EMBRYOS  
\*\*\*\*\*  
14:50 Friday, December 22, 1995

General Linear Models Procedure  
Least Squares Means

| LEVEL   | RESPONSE<br>LSMEAN | Pr >  T  H0: LSMEAN(i)=LSMEAN(j) | i/j                  |
|---------|--------------------|----------------------------------|----------------------|
| CONTROL | 84.7591014         | 1                                | 0.2926 0.0745 0.2026 |
| TRT1    | 81.0073422         | 2                                | 0.2926 0.4075 0.7761 |
| TRT2    | 78.5660163         | 3                                | 0.0745 0.4075 0.6125 |
| TRT3    | 80.1049168         | 4                                | 0.2026 0.7761 0.6125 |

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIALE EMBRYOS  
\*\*\*\*\*  
14:50 Friday, December 22, 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= 61 MSE= 2600.26  
Critical Value of Studentized Range= 3.735

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

| LEVEL<br>Comparison | Simultaneous<br>Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Simultaneous<br>Upper<br>Confidence<br>Limit |
|---------------------|----------------------------------------------|--------------------------------|----------------------------------------------|
| CONTROL - TRT1      | -47.277                                      | 3.752                          | 54.780                                       |
| CONTROL - TRT3      | -47.463                                      | 4.654                          | 56.772                                       |
| CONTROL - TRT2      | -45.352                                      | 6.193                          | 57.739                                       |
| TRT1 - CONTROL      | -54.780                                      | -3.752                         | 47.277                                       |
| TRT1 - TRT3         | -44.063                                      | 0.902                          | 45.867                                       |
| TRT1 - TRT2         | -41.860                                      | 2.441                          | 46.742                                       |
| TRT3 - CONTROL      | -56.772                                      | -4.654                         | 47.463                                       |
| TRT3 - TRT1         | -45.867                                      | -0.902                         | 44.063                                       |
| TRT3 - TRT2         | -44.012                                      | 1.539                          | 47.090                                       |
| TRT2 - CONTROL      | -57.739                                      | -6.193                         | 45.352                                       |
| TRT2 - TRT1         | -46.742                                      | -2.441                         | 41.860                                       |
| TRT2 - TRT3         | -47.090                                      | -1.539                         | 44.012                                       |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
10. ANALYSIS OF LIVE 3-WEEK EMBRYOS/VIALE EMBRYOS  
\*\*\*\*\*  
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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= 61 MSE= 2600.26  
Critical Value of Dunnnett's T= 2.069

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

| LEVEL<br>Comparison | Simultaneous<br>Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Simultaneous<br>Upper<br>Confidence<br>Limit |
|---------------------|----------------------------------------------|--------------------------------|----------------------------------------------|
| TRT1 - CONTROL      | -43.715                                      | -3.752                         | 36.212                                       |
| TRT3 - CONTROL      | -45.471                                      | -4.654                         | 36.162                                       |
| TRT2 - CONTROL      | -46.562                                      | -6.193                         | 34.176                                       |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS  
\*\*\*\*\*  
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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 = 80

NOTE: Due to missing values, only 62 observations can be used in this analysis.

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS  
\*\*\*\*\*

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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 -L2-L3-L4

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS  
\*\*\*\*\*

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## General Linear Models Procedure

Dependent Variable: RESPONSE

Weight: LE

| Source          | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|----|----------------|-------------|---------|--------|
| Model           | 3  | 12010.707      | 4003.569    | 1.44    | 0.2402 |
| Error           | 58 | 161156.391     | 2778.558    |         |        |
| Corrected Total | 61 | 173167.097     |             |         |        |

| R-Square | C.V.     | Root MSE | RESPONSE Mean |
|----------|----------|----------|---------------|
| 0.069359 | 70.49602 | 52.712   | 74.773        |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 12010.707 | 4003.569    | 1.44    | 0.2402 |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS  
\*\*\*\*\*

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## General Linear Models Procedure

Least Squares Means

| LEVEL   | RESPONSE   | LSMEAN | Pr >  T | H0: LSMEAN(I)=LSMEAN(J) |
|---------|------------|--------|---------|-------------------------|
| CONTROL | 74.0241401 | 1      | 0.7649  | 0.5814 0.2308           |
| TRT1    | 75.1397597 | 2      | 0.7649  | 0.3190 0.2992           |
| TRT2    | 72.0305774 | 3      | 0.5814  | 0.3190 0.0442           |
| TRT3    | 78.6457030 | 4      | 0.2308  | 0.2992 0.0442           |

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS  
\*\*\*\*\*

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## 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= 58 MSE= 2778.558  
Critical Value of Studentized Range= 3.741

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

| LEVEL Comparison | Simultaneous Lower Confidence Limit | Difference Between Means | Simultaneous Upper Confidence Limit |
|------------------|-------------------------------------|--------------------------|-------------------------------------|
| TRT3 - TRT1      | -43.042                             | 3.506                    | 50.054                              |
| TRT3 - CONTROL   | -50.945                             | 4.622                    | 60.188                              |
| TRT3 - TRT2      | -41.950                             | 6.615                    | 55.180                              |
| TRT1 - TRT3      | -50.054                             | -3.506                   | 43.042                              |
| TRT1 - CONTROL   | -53.357                             | 1.116                    | 55.588                              |
| TRT1 - TRT2      | -44.201                             | 3.109                    | 50.419                              |
| CONTROL - TRT3   | -60.188                             | -4.622                   | 50.945                              |
| CONTROL - TRT1   | -55.588                             | -1.116                   | 53.357                              |
| CONTROL - TRT2   | -54.212                             | 1.994                    | 58.199                              |
| TRT2 - TRT3      | -55.180                             | -6.615                   | 41.950                              |
| TRT2 - TRT1      | -50.419                             | -3.109                   | 44.201                              |
| TRT2 - CONTROL   | -58.199                             | -1.994                   | 54.212                              |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
11. ANALYSIS OF NORMAL HATCHLINGS/3-WEEK LIVE EMBRYOS  
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## 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= 58 MSE= 2778.558  
Critical Value of Dunnnett's T= 2.066

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   | -38.782                             | 4.622                    | 48.025                              |
| TRT1 - CONTROL   | -41.833                             | 1.116                    | 43.665                              |
| TRT2 - CONTROL   | -45.897                             | -1.994                   | 41.909                              |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID  
\*\*\*\*\*

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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 = 80

NOTE: Due to missing values, only 65 observations can be used in this analysis.

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

\*\*\*\*\*

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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  |         |    |    |    |           |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

\*\*\*\*\*

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## General Linear Models Procedure

Dependent Variable: RESPONSE

Weight:

| Source          | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|----|----------------|-------------|---------|--------|
| Model           | 3  | 16910.403      | 5636.801    | 0.54    | 0.6571 |
| Error           | 61 | 637411.810     | 10449.374   |         |        |
| Corrected Total | 64 | 654322.213     |             |         |        |

| R-Square | C.V.     | Root MSE | RESPONSE Mean |
|----------|----------|----------|---------------|
| 0.025844 | 191.4561 | 102.22   | 53.392        |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 16910.403 | 5636.801    | 0.54    | 0.6571 |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

\*\*\*\*\*

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## General Linear Models Procedure

Least Squares Means

| RESPONSE | Pr >  T | LSMEAN(i)=LSMEAN(j) |
|----------|---------|---------------------|
| LSMEAN   | i/j     | 1 2 3 4             |

| CONTROL | 1 | 0.4260 | 0.4334 | 0.2088 |
|---------|---|--------|--------|--------|
| TRT1    | 2 | 0.4260 | 0.9695 | 0.5815 |
| TRT2    | 3 | 0.4334 | 0.9695 | 0.5455 |
| TRT3    | 4 | 0.2088 | 0.5815 | 0.5455 |

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

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

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## 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= 61 MSE= 10449.37  
Critical Value of Studentized Range= 3.735

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

| LEVEL   | Comparison | Simultaneous Lower Confidence Limit | Difference Between Means | Simultaneous Upper Confidence Limit |
|---------|------------|-------------------------------------|--------------------------|-------------------------------------|
| TRT3    | - TRT1     | -87.096                             | 3.043                    | 93.182                              |
| TRT3    | - TRT2     | -88.075                             | 3.238                    | 94.552                              |
| TRT3    | - CONTROL  | -96.683                             | 7.794                    | 112.271                             |
| TRT1    | - TRT3     | -93.182                             | -3.043                   | 87.096                              |
| TRT1    | - TRT2     | -88.612                             | 0.195                    | 89.003                              |
| TRT1    | - CONTROL  | -97.543                             | 4.751                    | 107.045                             |
| TRT2    | - TRT3     | -94.552                             | -3.238                   | 88.075                              |
| TRT2    | - TRT1     | -89.003                             | -0.195                   | 88.612                              |
| TRT2    | - CONTROL  | -98.774                             | 4.556                    | 107.886                             |
| CONTROL | - TRT3     | -112.271                            | -7.794                   | 96.683                              |
| CONTROL | - TRT1     | -107.045                            | -4.751                   | 97.543                              |
| CONTROL | - TRT2     | -107.886                            | -4.556                   | 98.774                              |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 12. ANALYSIS OF NORMAL HATCHLINGS/EGGS LAID

\*\*\*\*\*

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## 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= 61 MSE= 10449.37  
Critical Value of Dunnnett's T= 2.069

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

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS  
 \*\*\*\*\*  
 14:50 Friday, December 22, 1995

General Linear Models Procedure  
 Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 61 observations can be used in this analysis.

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS  
 \*\*\*\*\*  
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General Linear Models Procedure  
 Type I Estimable Functions for: LEVEL

Effect Coefficients

| INTERCEPT | 0                           |
|-----------|-----------------------------|
| LEVEL     | L2<br>L3<br>L4<br>-L2-L3-L4 |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS  
 \*\*\*\*\*  
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General Linear Models Procedure

Dependent Variable: RESPONSE

Weight: NH

| Source          | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|----|----------------|-------------|---------|--------|
| Model           | 3  | 7453.0246      | 2484.3415   | 0.85    | 0.4738 |
| Error           | 57 | 167141.1768    | 2932.3013   |         |        |
| Corrected Total | 60 | 174594.2014    |             |         |        |

| R-Square | C.V.     | Root MSE | RESPONSE Mean |
|----------|----------|----------|---------------|
| 0.042688 | 73.81833 | 54.151   | 73.357        |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 7453.0246 | 2484.3415   | 0.85    | 0.4738 |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS  
 \*\*\*\*\*  
 14:50 Friday, December 22, 1995

General Linear Models Procedure  
 Least Squares Means

| LEVEL   | RESPONSE   | LSMEAN | Pr >  T | NO: LSMEAN(i)=LSMEAN(j) |
|---------|------------|--------|---------|-------------------------|
|         |            | 1/j    | 1       | 2 3 4                   |
| CONTROL | 71.0505571 | 1      | 0.8962  | 0.1973 0.5845           |
| TRT1    | 71.5752192 | 2      | 0.8962  | 0.1795 0.6317           |
| TRT2    | 76.1285234 | 3      | 0.1973  | 0.1795 0.4145           |
| TRT3    | 73.2956358 | 4      | 0.5845  | 0.6317 0.4145           |

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS  
 \*\*\*\*\*  
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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= 57 MSE= 2932.301

Critical Value of Studentized Range= 3.743

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

| LEVEL   | Comparison | Simultaneous Lower Confidence Limit | Difference Between Means | Simultaneous Upper Confidence Limit |
|---------|------------|-------------------------------------|--------------------------|-------------------------------------|
| TRT2    | - TRT3     | -47.934                             | 2.833                    | 53.599                              |
| TRT2    | - TRT1     | -44.945                             | 4.553                    | 54.051                              |
| TRT2    | - CONTROL  | -53.427                             | 5.078                    | 63.583                              |
| TRT3    | - TRT2     | -53.599                             | -2.833                   | 47.934                              |
| TRT3    | - TRT1     | -46.123                             | 1.720                    | 49.564                              |
| TRT3    | - CONTROL  | -54.867                             | 2.245                    | 59.357                              |
| TRT1    | - TRT2     | -54.051                             | -4.553                   | 44.945                              |
| TRT1    | - TRT3     | -49.564                             | -1.720                   | 46.123                              |
| TRT1    | - CONTROL  | -55.463                             | 0.525                    | 56.513                              |
| CONTROL | - TRT2     | -63.583                             | -5.078                   | 53.427                              |
| CONTROL | - TRT3     | -59.357                             | -2.245                   | 54.867                              |
| CONTROL | - TRT1     | -56.513                             | -0.525                   | 55.463                              |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 13. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/NORMAL HATCHLINGS  
 \*\*\*\*\*  
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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= 57 MSE= 2932.301  
Critical Value of Dunnett's T= 2.069

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

| LEVEL<br>Comparison | Simultaneous                 |                                |                              |
|---------------------|------------------------------|--------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
| TRT2 - CONTROL      | -40.654                      | 5.078                          | 50.810                       |
| TRT3 - CONTROL      | -42.398                      | 2.245                          | 46.888                       |
| TRT1 - CONTROL      | -43.239                      | 0.525                          | 44.289                       |

#### ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID  
\*\*\*\*\*

14:50 Friday, December 22, 1995

#### General Linear Models Procedure Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 65 observations can be used in this analysis.

#### ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID  
\*\*\*\*\*

14:50 Friday, December 22, 1995

#### General Linear Models Procedure Type I Estimable Functions for: LEVEL

Effect Coefficients

INTERCEPT 0

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

#### ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID  
\*\*\*\*\*

14:50 Friday, December 22, 1995

#### General Linear Models Procedure

Dependent Variable: RESPONSE

Weight:

| Source | DF | Sum of<br>Squares | Mean<br>Square | F Value | Pr > F |
|--------|----|-------------------|----------------|---------|--------|
| Model  | 3  | 4912.3949         | 1637.4650      | 0.52    | 0.6728 |
| Error  | 61 | 193579.9897       | 3173.4425      |         |        |

Corrected Total

R-Square C.V. Root MSE RESPONSE Mean  
0.024749 71.32710 56.333 78.979

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 4912.3949 | 1637.4650   | 0.52    | 0.6728 |

#### ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID  
\*\*\*\*\*

14:50 Friday, December 22, 1995

#### General Linear Models Procedure Least Squares Means

| LEVEL   | RESPONSE<br>LSMEAN | Pr >  T  NO: LSMEAN(i)=LSMEAN(j) |        |        |        |
|---------|--------------------|----------------------------------|--------|--------|--------|
|         |                    | i/j                              | 1      | 2      | 3      |
| CONTROL | 79.3802990         | 1                                | 0.4442 | 0.9356 | 0.7922 |
| TRT1    | 76.8643174         | 2                                | 0.4442 | 0.3262 | 0.2641 |
| TRT2    | 79.6387661         | 3                                | 0.9356 | 0.3262 | 0.8291 |
| TRT3    | 80.2752350         | 4                                | 0.7922 | 0.2641 | 0.8291 |

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

#### ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID  
\*\*\*\*\*

14:50 Friday, December 22, 1995

#### General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 61 MSE= 3173.442  
Critical Value of Studentized Range= 3.735

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

| LEVEL<br>Comparison | Simultaneous                 |                              | Difference<br>Between<br>Means | Simultaneous                 |                              |
|---------------------|------------------------------|------------------------------|--------------------------------|------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Upper<br>Confidence<br>Limit |                                | Lower<br>Confidence<br>Limit | Upper<br>Confidence<br>Limit |
| TRT3 - TRT2         | -49.685                      | -56.681                      | 0.636                          | 50.958                       | 58.471                       |
| TRT3 - TRT1         | -46.263                      | -50.958                      | 3.411                          | 53.085                       | 58.889                       |
| TRT2 - TRT3         | -50.958                      | -56.686                      | -0.636                         | 49.685                       | 55.202                       |
| TRT2 - TRT1         | -46.166                      | -57.202                      | 2.774                          | 51.715                       | 56.681                       |
| CONTROL - TRT3      | -58.471                      | -53.857                      | -0.895                         | 56.681                       | 58.889                       |
| CONTROL - TRT2      | -57.202                      | -53.085                      | -0.258                         | 56.686                       | 58.889                       |
| CONTROL - TRT1      | -53.857                      | -51.715                      | 2.516                          | 58.889                       | 61.000                       |
| TRT1 - TRT3         | -53.085                      | -46.166                      | -3.411                         | 46.263                       | 53.857                       |
| TRT1 - TRT2         | -51.715                      | -49.685                      | -2.774                         | 46.166                       | 51.715                       |
| TRT1 - CONTROL      | -58.889                      | -50.958                      | -2.516                         | 53.857                       | 58.889                       |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

14. ANALYSIS OF EGGS NOT CRACKED/EGGS LAID  
\*\*\*\*\*

14:50 Friday, December 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= 61 MSE= 3173.442  
Critical Value of Dunnett's t= 2.069

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

| LEVEL<br>Comparison | Simultaneous Lower Confidence Limit |           |           | Simultaneous Difference Between Means Upper Confidence Limit |           |           |
|---------------------|-------------------------------------|-----------|-----------|--------------------------------------------------------------|-----------|-----------|
|                     | CONTROL                             | - CONTROL | - CONTROL | CONTROL                                                      | - CONTROL | - CONTROL |
| TRT3                | -44.196                             | 0.895     | 45.986    |                                                              |           |           |
| TRT2                | -44.338                             | 0.258     | 44.855    |                                                              |           |           |
| TRT1                | -46.665                             | -2.516    | 41.633    |                                                              |           |           |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET  
\*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure  
Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 65 observations can be used in this analysis.

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET  
\*\*\*\*\*

14:50 Friday, December 22, 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 |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET  
\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

Dependent Variable: RESPONSE  
Weight: ES

| Source          | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|----|----------------|-------------|---------|--------|
| Model           | 3  | 20687.888      | 6895.963    | 0.55    | 0.6475 |
| Error           | 61 | 759539.710     | 12451.471   |         |        |
| Corrected Total | 64 | 780227.598     |             |         |        |

R-Square 0.026515 C.V. 177.8153 Root MSE 111.59  
RESPONSE Mean 62.754

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 20687.888 | 6895.963    | 0.55    | 0.6475 |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET  
\*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure  
Least Squares Means

| LEVEL   | RESPONSE   | Pr >  T | LSMEAN(1)=LSMEAN(J)  |
|---------|------------|---------|----------------------|
| CONTROL | 58.1166560 | 1       | 0.3841 0.6588 0.2448 |
| TRT1    | 64.3277890 | 2       | 0.3841 0.6017 0.7234 |
| TRT2    | 61.1511267 | 3       | 0.6588 0.6017 0.3836 |
| TRT3    | 66.6519088 | 4       | 0.2448 0.7234 0.3836 |

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

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET  
\*\*\*\*\*

14:50 Friday, December 22, 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= 61 MSE= 12451.47  
Critical Value of Studentized Range= 3.735

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

| LEVEL<br>Comparison | Simultaneous Lower Confidence Limit |           |          | Simultaneous Difference Between Means Upper Confidence Limit |         |  |
|---------------------|-------------------------------------|-----------|----------|--------------------------------------------------------------|---------|--|
|                     | TRT3                                | - TRT1    | -96.072  | 2.324                                                        | 100.720 |  |
|                     | TRT3                                | - TRT2    | -94.177  | 5.501                                                        | 105.179 |  |
|                     | TRT3                                | - CONTROL | -105.512 | 8.535                                                        | 122.583 |  |

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|         |           |          |        |         |
|---------|-----------|----------|--------|---------|
| TRT1    | - TRT3    | -100.720 | -2.324 | 96.072  |
| TRT1    | - TRT2    | -93.766  | 3.177  | 100.119 |
| TRT1    | - CONTROL | -105.453 | 6.211  | 117.875 |
| TRT2    | - TRT3    | -105.179 | -5.501 | 94.177  |
| TRT2    | - TRT1    | -100.119 | -3.177 | 93.766  |
| TRT2    | - CONTROL | -109.761 | 3.034  | 115.830 |
| CONTROL | - TRT3    | -122.583 | -8.535 | 105.512 |
| CONTROL | - TRT1    | -117.875 | -6.211 | 105.453 |
| CONTROL | - TRT2    | -115.830 | -3.034 | 109.761 |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
15. ANALYSIS OF NORMAL HATCHLINGS/EGGS SET  
\*\*\*\*\*

14:50 Friday, December 22, 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= 61 MSE= 12451.47  
Critical Value of Dunnnett's T= 2.069

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

| LEVEL<br>Comparison | Simultaneous                 |                                | Upper<br>Confidence<br>Limit |
|---------------------|------------------------------|--------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means |                              |
| TRT3 - CONTROL      | -80.782                      | 8.535                          | 97.853                       |
| TRT1 - CONTROL      | -81.240                      | 6.211                          | 93.663                       |
| TRT2 - CONTROL      | -85.303                      | 3.034                          | 91.372                       |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET  
\*\*\*\*\*

14:50 Friday, December 22, 1995

#### General Linear Models Procedure Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 65 observations can be used in this analysis.

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET  
\*\*\*\*\*

14:50 Friday, December 22, 1995

#### General Linear Models Procedure Type I Estimable Functions for: LEVEL

Effect

Coefficients

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET  
\*\*\*\*\*  
14:50 Friday, December 22, 1995

#### General Linear Models Procedure

Dependent Variable: RESPONSE  
Weight: ES

| Source          | DF | Sum of<br>Squares | Mean<br>Square | F Value | Pr > F |
|-----------------|----|-------------------|----------------|---------|--------|
| Model           | 3  | 17056.815         | 5685.605       | 0.53    | 0.6648 |
| Error           | 61 | 656996.767        | 10770.439      |         |        |
| Corrected Total | 64 | 674053.581        |                |         |        |

R-Square 0.025305 C.V. 184.2881 Root MSE 103.78  
RESPONSE Mean 56.314

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 17056.815 | 5685.605    | 0.53    | 0.6648 |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET  
\*\*\*\*\*

14:50 Friday, December 22, 1995

#### General Linear Models Procedure Least Squares Means

| LEVEL   | RESPONSE<br>LSMEAN | Pr >  T  NO: LSMEAN(i)=LSMEAN(j) |        |        |        |
|---------|--------------------|----------------------------------|--------|--------|--------|
|         |                    | 1/1                              | 2      | 3      | 4      |
| CONTROL | 50.9027183         | 1                                | 0.3551 | 0.3758 | 0.2242 |
| TRT1    | 57.0428561         | 2                                | 0.3551 | 0.9343 | 0.7236 |
| TRT2    | 56.5768611         | 3                                | 0.3758 | 0.9343 | 0.6540 |
| TRT3    | 59.2028470         | 4                                | 0.2242 | 0.7236 | 0.6540 |

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET  
\*\*\*\*\*

14:50 Friday, December 22, 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= 61 MSE= 10770.44

Critical Value of Studentized Range= 3.735

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

| LEVEL<br>Comparison | Simultaneous                 |                                |                              |
|---------------------|------------------------------|--------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
| TRT3 - TRT1         | -89.353                      | 2.160                          | 93.673                       |
| TRT3 - TRT2         | -90.080                      | 2.626                          | 95.332                       |
| TRT3 - CONTROL      | -97.770                      | 8.300                          | 114.370                      |
| TRT1 - TRT3         | -93.673                      | -2.160                         | 89.353                       |
| TRT1 - TRT2         | -89.695                      | 0.466                          | 90.627                       |
| TRT1 - CONTROL      | -97.713                      | 6.140                          | 109.994                      |
| TRT2 - TRT3         | -95.332                      | -2.626                         | 90.080                       |
| TRT2 - TRT1         | -90.627                      | -0.466                         | 89.695                       |
| TRT2 - CONTROL      | -99.232                      | 5.674                          | 110.580                      |
| CONTROL - TRT3      | -114.370                     | -8.300                         | 97.770                       |
| CONTROL - TRT1      | -109.994                     | -6.140                         | 97.713                       |
| CONTROL - TRT2      | -110.580                     | -5.674                         | 99.232                       |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
16. ANALYSIS OF 14-DAY HATCHLING SURVIVORS/EGGS SET  
\*\*\*\*\*

14:50 Friday, December 22, 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= 61 MSE= 10770.44  
Critical Value of Dunnnett's T= 2.069

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

| LEVEL<br>Comparison | Simultaneous                 |                                |                              |
|---------------------|------------------------------|--------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
| TRT3 - CONTROL      | -74.770                      | 8.300                          | 91.370                       |
| TRT1 - CONTROL      | -75.194                      | 6.140                          | 87.474                       |
| TRT2 - CONTROL      | -76.484                      | 5.674                          | 87.833                       |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
17. ANALYSIS OF EGGSHELL THICKNESS  
\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
17. ANALYSIS OF EGGSHELL THICKNESS  
\*\*\*\*\*

14:50 Friday, December 22, 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 |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
17. ANALYSIS OF EGGSHELL THICKNESS  
\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

Dependent Variable: THICK

| Source          | DF | Sum of<br>Squares | Mean<br>Square | F Value | Pr > F |
|-----------------|----|-------------------|----------------|---------|--------|
| Model           | 3  | 0.0003284         | 0.0001095      | 0.73    | 0.5368 |
| Error           | 59 | 0.0088191         | 0.0001495      |         |        |
| Corrected Total | 62 | 0.0091476         |                |         |        |

|          |          |          |            |
|----------|----------|----------|------------|
| R-Square | C.V.     | Root MSE | THICK Mean |
| 0.035904 | 5.862258 | 0.0122   | 0.2086     |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 0.0003284 | 0.0001095   | 0.73    | 0.5368 |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
17. ANALYSIS OF EGGSHELL THICKNESS  
\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

Least Squares Means

| LEVEL   | THICK<br>LSMEAN | Pr >  T | H0: LSMEAN(1)=LSMEAN(J) |
|---------|-----------------|---------|-------------------------|
| CONTROL | 0.20900000      | 1       | 0.5569 0.5284 0.7258    |
| TRT1    | 0.20626316      | 2       | 0.5569 0.1651 0.8012    |
| TRT2    | 0.21200000      | 3       | 0.5284 0.1651 0.2755    |
| TRT3    | 0.20731250      | 4       | 0.7258 0.8012 0.2755    |

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

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= 59 MSE= 0.000149  
 Critical Value of Studentized Range= 3.739

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

| LEVEL<br>Comparison | Simultaneous                 |                                |                              |
|---------------------|------------------------------|--------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
| TRT2 - CONTROL      | -0.009508                    | 0.003000                       | 0.015508                     |
| TRT2 - TRT3         | -0.006571                    | 0.004688                       | 0.015946                     |
| TRT2 - TRT1         | -0.005054                    | 0.005737                       | 0.016528                     |
| CONTROL - TRT2      | -0.015508                    | -0.003000                      | 0.009508                     |
| CONTROL - TRT3      | -0.010973                    | 0.001688                       | 0.014348                     |
| CONTROL - TRT1      | -0.009509                    | 0.002737                       | 0.014983                     |
| TRT3 - TRT2         | -0.015946                    | -0.004688                      | 0.006571                     |
| TRT3 - CONTROL      | -0.014348                    | -0.001688                      | 0.010973                     |
| TRT3 - TRT1         | -0.009918                    | 0.001049                       | 0.012017                     |
| TRT1 - TRT2         | -0.016528                    | -0.005737                      | 0.005054                     |
| TRT1 - CONTROL      | -0.014983                    | -0.002737                      | 0.009509                     |
| TRT1 - TRT3         | -0.012017                    | -0.001049                      | 0.009918                     |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 18. ANALYSIS OF EGGSHELL THICKNESS  
 \*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 59 MSE= 0.000149  
 Critical Value of Dunnnett's T= 2.073

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

| LEVEL<br>Comparison | Simultaneous                 |                                |                              |
|---------------------|------------------------------|--------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
| TRT2 - CONTROL      | -0.006807                    | 0.003000                       | 0.012807                     |
| TRT3 - CONTROL      | -0.011615                    | -0.001688                      | 0.008240                     |
| TRT1 - CONTROL      | -0.012339                    | -0.002737                      | 0.006866                     |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 18. ANALYSIS OF HATCHLING WEIGHT  
 \*\*\*\*\*

14:50 Friday, December 22, 1995

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 61 observations can be used in this analysis.

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 18. ANALYSIS OF HATCHLING WEIGHT  
 \*\*\*\*\*

14:50 Friday, December 22, 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 |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 18. ANALYSIS OF HATCHLING WEIGHT  
 \*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure

Dependent Variable: HATWT

| Source          | DF | Sum of<br>Squares | Mean<br>Square | F Value | Pr > F |
|-----------------|----|-------------------|----------------|---------|--------|
| Model           | 3  | 0.0218813         | 0.0072938      | 0.03    | 0.9936 |
| Error           | 57 | 14.8525449        | 0.2605710      |         |        |
| Corrected Total | 60 | 14.8744262        |                |         |        |

|          |          |          |            |
|----------|----------|----------|------------|
| R-Square | C.V.     | Root MSE | HATWT Mean |
| 0.001471 | 7.696034 | 0.5105   | 6.6328     |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 0.0218813 | 0.0072938   | 0.03    | 0.9936 |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
 18. ANALYSIS OF HATCHLING WEIGHT  
 \*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure  
 Least Squares Means

| LEVEL | HATWT<br>LSMEAN | Pr >  T | HO: LSMEAN(i)=LSMEAN(j) |
|-------|-----------------|---------|-------------------------|
|       |                 | 1/1     | 3/3                     |

CONTROL 6.64000000 1 0.9707 0.8485 0.9954  
 TRT1 6.64736842 2 0.9707 0.7892 0.9711  
 TRT2 6.60000000 3 0.8485 0.7892 0.8207  
 TRT3 6.64117647 4 0.9954 0.9711 0.8207

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

# ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL 18. ANALYSIS OF HATCHLING WEIGHT

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14:50 Friday, December 22, 1995

## General Linear Models Procedure

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

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

Alpha= 0.05 Confidence= 0.95 df= 57 MSE= 0.260571  
 Critical Value of Studentized Range= 3.743

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

| LEVEL<br>Comparison | Simultaneous                 |                                |                              | Simultaneous                 |                                |                              |
|---------------------|------------------------------|--------------------------------|------------------------------|------------------------------|--------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
| TRT1 - TRT3         | -0.44481                     | 0.00619                        | 0.45720                      | -0.44481                     | 0.00619                        | 0.45720                      |
| TRT1 - CONTROL      | -0.52041                     | 0.00737                        | 0.53515                      | -0.52041                     | 0.00737                        | 0.53515                      |
| TRT1 - TRT2         | -0.41923                     | 0.04737                        | 0.51397                      | -0.41923                     | 0.04737                        | 0.51397                      |
| TRT3 - TRT1         | -0.45720                     | -0.00619                       | 0.44481                      | -0.45720                     | -0.00619                       | 0.44481                      |
| TRT3 - CONTROL      | -0.53720                     | 0.00118                        | 0.53956                      | -0.53720                     | 0.00118                        | 0.53956                      |
| TRT3 - TRT2         | -0.43738                     | 0.04118                        | 0.51974                      | -0.43738                     | 0.04118                        | 0.51974                      |
| CONTROL - TRT1      | -0.53515                     | -0.00737                       | 0.52041                      | -0.53515                     | -0.00737                       | 0.52041                      |
| CONTROL - TRT3      | -0.53956                     | -0.00118                       | 0.53720                      | -0.53956                     | -0.00118                       | 0.53720                      |
| CONTROL - TRT2      | -0.51151                     | 0.04000                        | 0.59151                      | -0.51151                     | 0.04000                        | 0.59151                      |
| TRT2 - TRT1         | -0.51397                     | -0.04737                       | 0.41923                      | -0.51397                     | -0.04737                       | 0.41923                      |
| TRT2 - TRT3         | -0.51974                     | -0.04118                       | 0.43738                      | -0.51974                     | -0.04118                       | 0.43738                      |
| TRT2 - CONTROL      | -0.59151                     | -0.04000                       | 0.51151                      | -0.59151                     | -0.04000                       | 0.51151                      |

# ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

18. ANALYSIS OF HATCHLING WEIGHT

\*\*\*\*\*

14:50 Friday, December 22, 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= 57 MSE= 0.260571  
 Critical Value of Dunnnett's T= 2.069

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

| LEVEL<br>Comparison | Simultaneous                 |                                |                              | Simultaneous                 |                                |                              |
|---------------------|------------------------------|--------------------------------|------------------------------|------------------------------|--------------------------------|------------------------------|
|                     | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit | Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |

TRT1 - CONTROL -0.40518 0.00737 0.41992  
 TRT3 - CONTROL -0.41966 0.00118 0.42201  
 TRT2 - CONTROL -0.47110 -0.04000 0.39110

# ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 62 observations can be used in this analysis.

# ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

Type I Estimable Functions for: LEVEL

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

# ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

Dependent Variable: SURVWT

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|--------|----|----------------|-------------|---------|--------|
| Model  | 3  | 57.717474      | 19.239158   | 1.51    | 0.2220 |
| Error  | 58 | 740.032365     | 12.759179   |         |        |

Corrected Total 61 797.749839

| R-Square | C.V.     | Root MSE | SURVWT Mean |
|----------|----------|----------|-------------|
| 0.072350 | 15.33153 | 3.5720   | 23.298      |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|--------|----|-----------|-------------|---------|--------|
| LEVEL  | 3  | 57.717474 | 19.239158   | 1.51    | 0.2220 |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

\*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure  
Least Squares Means

| LEVEL   | SURVWT<br>LSMEAN | Pr >  T <br>i/j | H0: LSMEAN(1)=LSMEAN(j)<br>1 | 2      | 3      | 4 |
|---------|------------------|-----------------|------------------------------|--------|--------|---|
| CONTROL | 21.2363636       | 1               | 0.0881                       | 0.0780 | 0.0600 |   |
| TRT1    | 23.5842105       | 2               | 0.0881                       | 0.8745 | 0.7997 |   |
| TRT2    | 23.7800000       | 3               | 0.0780                       | 0.8745 | 0.9321 |   |
| TRT3    | 23.8882353       | 4               | 0.0600                       | 0.7997 | 0.9321 |   |

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

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

\*\*\*\*\*

14:50 Friday, December 22, 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= 58 MSE= 12.75918  
Critical Value of Studentized Range= 3.741

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

| LEVEL<br>Comparison | Simultaneous<br>Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Simultaneous<br>Upper<br>Confidence<br>Limit |
|---------------------|----------------------------------------------|--------------------------------|----------------------------------------------|
| TRT3 - TRT2         | -3.239                                       | 0.108                          | 3.455                                        |
| TRT3 - TRT1         | -2.850                                       | 0.304                          | 3.458                                        |
| TRT3 - CONTROL      | -1.004                                       | 2.652                          | 6.308                                        |
| TRT2 - TRT3         | -3.455                                       | -0.108                         | 3.239                                        |
| TRT2 - TRT1         | -3.068                                       | 0.196                          | 3.459                                        |
| TRT2 - CONTROL      | -1.207                                       | 2.544                          | 6.294                                        |
| TRT1 - TRT3         | -3.458                                       | -0.304                         | 2.850                                        |
| TRT1 - TRT2         | -3.459                                       | -0.196                         | 3.068                                        |
| TRT1 - CONTROL      | -1.232                                       | 2.348                          | 5.928                                        |
| CONTROL - TRT3      | -6.308                                       | -2.652                         | 1.004                                        |
| CONTROL - TRT2      | -6.294                                       | -2.544                         | 1.207                                        |
| CONTROL - TRT1      | -5.928                                       | -2.348                         | 1.232                                        |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 19. ANALYSIS OF 14-DAY SURVIVOR WEIGHT

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

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

NOTE: This tests controls the type I experimentwise error for

comparisons of all treatments against a control.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 12.75918

Critical Value of Dunnnett's T= 2.076

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

| LEVEL<br>Comparison | Simultaneous<br>Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Simultaneous<br>Upper<br>Confidence<br>Limit |
|---------------------|----------------------------------------------|--------------------------------|----------------------------------------------|
| TRT3 - CONTROL      | -0.217                                       | 2.652                          | 5.521                                        |
| TRT2 - CONTROL      | -0.399                                       | 2.544                          | 5.487                                        |
| TRT1 - CONTROL      | -0.461                                       | 2.348                          | 5.157                                        |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 20. ANALYSIS OF FOOD CONSUMPTION

\*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure  
Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 68 observations can be used in this analysis.

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 20. ANALYSIS OF FOOD CONSUMPTION

\*\*\*\*\*

14:50 Friday, December 22, 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    |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 20. ANALYSIS OF FOOD CONSUMPTION

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

| Dependent Variable: FOOD | Sum of<br>Squares | Mean<br>Square | F Value   | Pr > F |
|--------------------------|-------------------|----------------|-----------|--------|
| Source                   | DF                |                |           |        |
| Model                    | 3                 | 4.3731529      | 1.4577176 | 0.41   |
| Error                    | 64                | 229.6021413    | 3.5875335 | 0.7490 |
| Corrected Total          | 67                | 233.9752941    |           |        |

| Source   | DF       | Type I SS | Mean Square | F Value   | Pr > F |
|----------|----------|-----------|-------------|-----------|--------|
| LEVEL    | 3        | 4.3731529 | 1.4577176   | 0.41      | 0.7490 |
| R-Square |          | C.V.      | Root MSE    | FOOD Mean |        |
| 0.018691 | 9.987387 | 1.8941    |             | 18.965    |        |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
20. ANALYSIS OF FOOD CONSUMPTION  
\*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure  
Least Squares Means

| LEVEL   | FOOD<br>LSMEAN | Pr >  T <br>i/j | H0: LSMEAN(i)=LSMEAN(j)<br>2 3 4 |
|---------|----------------|-----------------|----------------------------------|
| CONTROL | 19.2230769     | 1               | 0.3847 0.6182 0.9990             |
| TRT1    | 18.6263158     | 2               | 0.3847 0.6878 0.3424             |
| TRT2    | 18.8777778     | 3               | 0.6182 0.6878 0.5873             |
| TRT3    | 19.2222222     | 4               | 0.9990 0.3424 0.5873             |

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
20. ANALYSIS OF FOOD CONSUMPTION  
\*\*\*\*\*

14:50 Friday, December 22, 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= 64 MSE= 3.587533  
Critical Value of Studentized Range= 3.730

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

| LEVEL<br>Comparison | Simultaneous<br>Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
|---------------------|----------------------------------------------|--------------------------------|------------------------------|
| CONTROL - TRT3      | -1.8177                                      | 0.0009                         | 1.8194                       |
| CONTROL - TRT2      | -1.4732                                      | 0.3453                         | 2.1638                       |
| CONTROL - TRT1      | -1.2016                                      | 0.5968                         | 2.3951                       |
| TRT3 - CONTROL      | -1.8194                                      | -0.0009                        | 1.8177                       |
| TRT3 - TRT2         | -1.3210                                      | 0.3444                         | 2.0099                       |
| TRT3 - TRT1         | -1.0475                                      | 0.5959                         | 2.2393                       |
| TRT2 - CONTROL      | -2.1638                                      | -0.3453                        | 1.4732                       |
| TRT2 - TRT3         | -2.0099                                      | -0.3444                        | 1.3210                       |
| TRT2 - TRT1         | -1.3919                                      | 0.2515                         | 1.8948                       |
| TRT1 - CONTROL      | -2.3951                                      | -0.5968                        | 1.2016                       |
| TRT1 - TRT3         | -2.2393                                      | -0.5959                        | 1.0475                       |
| TRT1 - TRT2         | -1.8948                                      | -0.2515                        | 1.3919                       |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
20. ANALYSIS OF FOOD CONSUMPTION  
\*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure

Dunnett'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= 64 MSE= 3.587533  
Critical Value of Dunnett's T= 2.078

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

| LEVEL<br>Comparison | Simultaneous<br>Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Upper<br>Confidence<br>Limit |
|---------------------|----------------------------------------------|--------------------------------|------------------------------|
| TRT3 - CONTROL      | -1.4335                                      | -0.0009                        | 1.4318                       |
| TRT2 - CONTROL      | -1.7779                                      | -0.3453                        | 1.0873                       |
| TRT1 - CONTROL      | -2.0135                                      | -0.5968                        | 0.8200                       |

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
21. COVARIATE ANALYSIS OF MALE BODY WEIGHT  
\*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure  
Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 68 observations can be used in this analysis.

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL  
21. COVARIATE ANALYSIS OF MALE BODY WEIGHT  
\*\*\*\*\*

14:50 Friday, December 22, 1995

General Linear Models Procedure

| Dependent Variable: POSTM | DF       | Sum of<br>Squares | Mean<br>Square | F Value | Pr > F |
|---------------------------|----------|-------------------|----------------|---------|--------|
| Source                    |          |                   |                |         |        |
| Model                     | 4        | 7869.5361         | 1967.3840      | 14.63   | 0.0001 |
| Error                     | 63       | 8474.2286         | 134.5116       |         |        |
| Corrected Total           | 67       | 16343.7647        |                |         |        |
| R-Square                  | C.V.     | Root MSE          | POSTM Mean     |         |        |
| 0.481501                  | 6.038729 | 11.598            | 192.06         |         |        |

| Source | DF | Type I SS   | Mean Square | F Value | Pr > F |
|--------|----|-------------|-------------|---------|--------|
| LEVEL  | 3  | 704.4451    | 234.8150    | 1.75    | 0.1667 |
| PREN   | 1  | 7165.0910   | 7165.0910   | 53.27   | 0.0001 |
| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
| LEVEL  | 3  | 207.2870    | 69.0957     | 0.51    | 0.6743 |
| PREN   | 1  | 7165.0910   | 7165.0910   | 53.27   | 0.0001 |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

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14:50 Friday, December 22, 1995

General Linear Models Procedure  
Least Squares Means

| LEVEL   | POSTM<br>LSMEAN | Std Err<br>LSMEAN | Pr >  T <br>H0:LSMEAN=0 | LSMEAN<br>Number |
|---------|-----------------|-------------------|-------------------------|------------------|
| CONTROL | 194.862255      | 3.247299          | 0.0001                  | 1                |
| TRT1    | 189.790363      | 2.667350          | 0.0001                  | 2                |
| TRT2    | 192.697311      | 2.740565          | 0.0001                  | 3                |
| TRT3    | 191.790122      | 2.825318          | 0.0001                  | 4                |

Pr &gt; |T| H0: LSMEAN(I)=LSMEAN(J)

| I/J | 1      | 2      | 3      | 4      |
|-----|--------|--------|--------|--------|
| 1   |        | 0.2298 | 0.6105 | 0.4854 |
| 2   | 0.2298 |        | 0.4489 | 0.6117 |
| 3   | 0.6105 | 0.4489 |        | 0.8200 |
| 4   | 0.4854 | 0.6117 | 0.8200 |        |

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

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

\*\*\*\*\*

14:50 Friday, December 22, 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= 63 MSE= 134.5116  
Critical Value of Studentized Range= 3.732

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

| LEVEL<br>Comparison | Simultaneous<br>Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Simultaneous<br>Upper<br>Confidence<br>Limit |
|---------------------|----------------------------------------------|--------------------------------|----------------------------------------------|
| TRT3 - CONTROL      | -5.755                                       | 5.385                          | 16.525                                       |
| TRT3 - TRT2         | -4.480                                       | 5.722                          | 15.924                                       |
| TRT3 - TRT1         | -1.488                                       | 8.579                          | 18.646                                       |
| CONTROL - TRT3      | -16.525                                      | -5.385                         | 5.755                                        |
| CONTROL - TRT2      | -10.802                                      | 0.338                          | 11.478                                       |
| CONTROL - TRT1      | -7.822                                       | 3.194                          | 14.211                                       |

|                |         |        |        |
|----------------|---------|--------|--------|
| TRT2 - TRT3    | -15.924 | -5.722 | 4.480  |
| TRT2 - CONTROL | -11.478 | -0.338 | 10.802 |
| TRT2 - TRT1    | -7.210  | 2.857  | 12.924 |
| TRT1 - TRT3    | -18.646 | -8.579 | 1.488  |
| TRT1 - CONTROL | -14.211 | -3.194 | 7.822  |
| TRT1 - TRT2    | -12.924 | -2.857 | 7.210  |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 21. COVARIATE ANALYSIS OF MALE BODY WEIGHT

\*\*\*\*\*

14:50 Friday, December 22, 1995

## General Linear Models Procedure

Dunnett'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= 63 MSE= 134.5116  
Critical Value of Dunnett's T= 2.079

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

| LEVEL<br>Comparison | Simultaneous<br>Lower<br>Confidence<br>Limit | Difference<br>Between<br>Means | Simultaneous<br>Upper<br>Confidence<br>Limit |
|---------------------|----------------------------------------------|--------------------------------|----------------------------------------------|
| TRT3 - CONTROL      | -3.390                                       | 5.385                          | 14.159                                       |
| TRT2 - CONTROL      | -9.112                                       | -0.338                         | 8.437                                        |
| TRT1 - CONTROL      | -11.872                                      | -3.194                         | 5.483                                        |

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

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14:50 Friday, December 22, 1995

General Linear Models Procedure  
Class Level Information

| Class | Levels | Values                 |
|-------|--------|------------------------|
| LEVEL | 4      | CONTROL TRT1 TRT2 TRT3 |

Number of observations in data set = 80

NOTE: Due to missing values, only 68 observations can be used in this analysis.

## ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

## 22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

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14:50 Friday, December 22, 1995

## General Linear Models Procedure

| Dependent Variable: POSTF | Sum of<br>Squares | Mean<br>Square | F Value  | Pr > F |
|---------------------------|-------------------|----------------|----------|--------|
| Source                    | DF                |                |          |        |
| Model                     | 4                 | 14480.134      | 3620.034 | 12.29  |
| Error                     | 63                | 18562.748      | 294.647  | 0.0001 |

Corrected Total 67 33042.882

R-Square C.V. Root MSE POSTF Mean

0.438222 8.265394 17.165 207.68

Source DF Type I SS Mean Square F Value Pr > F

LEVEL 3 1936.500 645.500 2.19 0.0979

PREF 1 12543.634 12543.634 42.57 0.0001

Source DF Type III SS Mean Square F Value Pr > F

LEVEL 3 1068.914 356.305 1.21 0.3137

PREF 1 12543.634 12543.634 42.57 0.0001

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

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14:50 Friday, December 22, 1995

General Linear Models Procedure

Least Squares Means

| LEVEL   | POSTF LSMEAN | Std Err  | Pr >  T | LSMEAN | HO: LSMEAN=0 | Number |
|---------|--------------|----------|---------|--------|--------------|--------|
| CONTROL | 209.886318   | 4.873839 | 0.0001  | 0.0001 | 1            |        |
| TRT1    | 206.352977   | 3.982615 | 0.0001  | 0.0001 | 2            |        |
| TRT2    | 212.807900   | 4.068642 | 0.0001  | 0.0001 | 3            |        |
| TRT3    | 202.346061   | 4.156318 | 0.0001  | 0.0001 | 4            |        |

Pr &gt; |T| HO: LSMEAN(1)=LSMEAN(J)

| i/j | 1      | 2      | 3      | 4      |
|-----|--------|--------|--------|--------|
| 1   |        | 0.5704 | 0.6506 | 0.2546 |
| 2   | 0.5704 |        | 0.2649 | 0.4962 |
| 3   | 0.6506 | 0.2649 |        | 0.0734 |
| 4   | 0.2546 | 0.4962 | 0.0734 |        |

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

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

\*\*\*\*\*

14:50 Friday, December 22, 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= 63 MSE= 294.6468

Critical Value of Studentized Range= 3.732

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

| LEVEL Comparison | Simultaneous Lower Confidence Limit | Difference Between Means | Simultaneous Upper Confidence Limit |
|------------------|-------------------------------------|--------------------------|-------------------------------------|
| TRT2 - CONTROL   | -0.453                              | 12.534                   | 25.521                              |
| TRT3 - CONTROL   | -7.508                              | 5.479                    | 18.466                              |
| TRT1 - CONTROL   | -13.446                             | -0.603                   | 12.240                              |

TRT2 - TRT3 -8.044 7.056 22.155

TRT2 - CONTROL -3.953 12.534 29.022

TRT1 - TRT1 -1.762 13.137 28.037

TRT3 - TRT2 -22.155 -7.056 8.044

TRT3 - CONTROL -11.009 5.479 21.966

TRT1 - TRT1 -8.818 6.082 20.981

CONTROL - TRT2 -29.022 -12.534 3.953

CONTROL - TRT3 -21.966 -5.479 11.009

CONTROL - TRT1 -15.701 0.603 16.908

TRT1 - TRT2 -28.037 -13.137 1.762

TRT1 - TRT3 -20.981 -6.082 8.818

TRT1 - CONTROL -16.908 -0.603 15.701

ICIA5504: EFFECTS ON REPRODUCTION IN BOBWHITE QUAIL

22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT

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14:50 Friday, December 22, 1995

General Linear Models Procedure

Dunnnett'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= 63 MSE= 294.6468

Critical Value of Dunnnett's T= 2.079

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

| LEVEL Comparison | Simultaneous Lower Confidence Limit | Difference Between Means | Simultaneous Upper Confidence Limit |
|------------------|-------------------------------------|--------------------------|-------------------------------------|
| TRT2 - CONTROL   | -0.453                              | 12.534                   | 25.521                              |
| TRT3 - CONTROL   | -7.508                              | 5.479                    | 18.466                              |
| TRT1 - CONTROL   | -13.446                             | -0.603                   | 12.240                              |