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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 19 1993

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

MEMORANDUM

Subject: Triadimefon Data Requirements Update

From: Anthony F. Maciorowski, Chief
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

To: Mark Wilhite, PM Team 53 Reviewer
Special Review and Reregistration Division (H7508C)

Attached are 5 actions (D167380, D174193, D166958, D179333, and D162709, Case No. 816353, S# 109901) which resulted in 14 EEB Data Evaluation Record of studies plus 2 addendums for previously submitted studies.

The enclosed table, "Data Requirements for Ecological Effects Branch", summarizes the data requirements for triadimefon.

Please contact Dennis J. McLane (305-5096) if you have any further questions.



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Date: 4-9-93
Case No: 816353
Chemical No: 109901

TRIADIMEFON
DATA REQUIREMENTS FOR
ECOLOGICAL EFFECTS BRANCH

Data Requirements	Composition ¹	Use Group ²	Does EPA Have Data To Satisfy This Requirement? (Yes, No)	Bibliographic Citation	Must Additional Data Be Submitted under FIFRA3(c)(2)(B)?
6 Basic Studies in Bold					
71-1(a) Acute Avian Oral, Quail/Duck	(TGAI)	A,C,I,K	YES	41895901	NO
71-1(b) Acute Avian Oral, Quail/Duck	(TEP)	-----	NO	-----	NO
71-2(a) Acute Avian Diet, Quail	(TGAI)	A,C,I,K	YES	00050066	NO
71-2(b) Acute Avian Diet, Duck	(TGAI)	A,C,K	NO	00050067	YES
71-3 Wild Mammal Toxicity	(TGAI)	-----	NO	-----	NO
71-4(a) Avian Reproduction Quail	(TGAI)	A,C	YES	248177, 42342301	NO
71-4(b) Avian Reproduction Duck	(TGAI)	A,C	YES	42342302	NO
71-5(a) Simulated Terrestrial Field Study	-----	-----	NO	-----	NO
71-5(b) Actual Terrestrial Field Study	-----	-----	NO	-----	NO
72-1(a) Acute Fish Toxicity Bluegill	(TGAI)	A,C,K	NO	00070704	YES
72-1(b) Acute Fish Toxicity Bluegill	(TEP)	A,C	NO	147863 or 460087004*	NO
72-1(c) Acute Fish Toxicity Rainbow Trout	(TGAI)	A,C,I,K	NO	00070704	YES
72-1(d) Acute Fish Toxicity Rainbow Trout	(TEP)	A,C	NO	147864 or 460087005*	NO
72-2(a) Acute Aquatic Invertebrate Toxicity	(TGAI)	A,C,I,K	YES	231311, 147862 or 460089003	NO
72-2(b) Acute Aquatic Invertebrate Toxicity	(TEP)	A,C	NO	147865 or 460087006	NO
72-3(a) Acute Estu./Mari Tox Fish	(TGAI)	-----	NO	NO	RESERVED
72-3(b) Acute Estu./Mari Tox Mollusk	(TGAI)	-----	NO	NO	RESERVED
72-3(c) Acute Estu./Mari Tox Shrimp	(TGAI)	-----	NO	NO	RESERVED

* In Bibliographic Citation column indicates study may be upgradeable

Date:4-9-93
Case No:816353
Chemical No:109901

TRIADIMEFON
DATA REQUIREMENTS FOR
ECOLOGICAL EFFECTS BRANCH

Data Requirements	Composition ¹	Use Group ²	Does EPA Have Data To Satisfy This Requirement? (Yes, No)	Bibliographic Citation	Must Additional Data Be Submitted under FIFRA3(c)(2)(B)?
72-3(d) Acute Estu/Mari Tox Fish	(TEP)	-----	NO	-----	RESERVED
72-3(e) Acute Estu/Mari Tox Mollusk	(TEP)	-----	NO	-----	RESERVED
72-3(f) Acute Estu/Mari Tox Shrimp	(TEP)	-----	NO	-----	RESERVED
72-4(a) Early Life-Stage Fish	(TGAI)	A,C	NO	248177 41922103* 251243	YES
72-4(b) Life-Cycle Aquatic Invertebrate	(TGAI)	A,C	YES	246736 41922102	NO
72-5 Life-Cycle Fish	(TGAI)	A,C	NO	-----	RESERVED
72-6 Aquatic Org. Accumulation	(TGAI)	A,C	NO	-----	NO
72-7(a) Simulated Aquatic Field Study	(TEP)	A,C	NO	-----	NO
72-7(b) Actual Aquatic Field Study	(TEP)	A,C	NO	-----	NO
122-1(a) Seed Germ./Seedling Emerg.	(TGAI)	A,C	NO	-----	NO
122-1(b) Vegetative Vigor	(TGAI)	A,C	NO	-----	NO
122-2 Aquatic Plant Growth	(TGAI)	A,C	NO	-----	NO
123-1(a) Seed Germ./Seedling Emerg.	(TGAI)	A,C	NO	-----	NO
123-1(b) Vegetative Vigor	(TGAI)	A,C	NO	-----	NO
123-2 Aquatic Plant Growth	(TGAI)	A,C	NO	159558 41616007	YES
124-1 Terrestrial Field Study	(TGAI)	A,C	NO	-----	NO
124-2 Aquatic Field Study	(TGAI)	A,C	NO	-----	RESERVED
141-1 Honey Bee Acute Contact	(TGAI)	A,C	YES	42307804	NO
141-2 Honey Bee Residue on Foliage	(TGAI)	A,C	NO	-----	NO
141-5 Field Test for Pollinators	(TGAI)	A,C	NO	-----	NO

* In Bibliographic Citation column indicates study may be upgradeable

1. Composition: TGAI = Technical grade of the active ingredient; PAIRA = Pure active ingredient, radiolabeled; TEP = Typical end-use product

2. Use Group: A = Terrestrial/Food; B = Terrestrial/Feed; C = Terrestrial Non-Food; D = Aquatic Food; E = Aquatic Non-Food (Outdoor); F = Aquatic Non-Food (Industrial); G = Aquatic Non-Food (Residential); H = Greenhouse Food; I = Greenhouse Non-Food; J = Forestry; K = Residential Outdoor; L = Indoor Food; M = Indoor Non-Food; N = Indoor Medical; O = Indoor Residential; Z = Use Group for Site 0000

DP Barcode : D179333
 PC Code No : 109901
 EEB Out :

To: Mark Wilhite
 PM Team Reviewer 53
 Special Review & Reregistration Division (H7508C)

From: Anthony F. Maciorowski, Chief
 Ecological Effects Branch/EFED (H7507C)

Attached, please find the EEB review of...

Reg./File # : 003125

Chemical Name : 1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1H1,2,4 -
 triazol-1-yl)-2-butanone

Type Product : Fungicide

Product Name :

Company Name : Mobay Corporation

Purpose : Review 71-4(a) MRID 42342301 71-4(b) MRID
 42342302

Action Code : 606 Date Due : 08/21/92

Assigned Scientist : McLane, Dennis J. Date In EEB: 06/16/92

EEB Guideline/MRID Summary Table: The review in this package contains an evaluation of the following:

GDLN NO	MRID NO	CAT	GDLN NO	MRID NO	CAT	GDLN NO	MRID NO	CAT
71-1(A)	N/A		72-2(A)	N/A		72-7(A)	N/A	
71-1(B)	N/A		72-2(B)	N/A		72-7(B)	N/A	
71-2(A)	N/A		72-3(A)	N/A		122-1(A)	N/A	
71-2(B)	N/A		72-3(B)	N/A		122-1(B)	N/A	
71-3	N/A		72-3(C)	N/A		122-2	N/A	
71-3	N/A		72-3(C)	N/A		122-2	N/A	
71-4(A)	42342301	Supple.	72-3(D)	N/A		123-1(A)	N/A	
71-4(B)	42342302	Core	72-3(E)	N/A		123-1(B)	N/A	
71-5(A)	N/A		72-3(F)	N/A		123-2	N/A	
71-5(B)	N/A		72-4(A)	N/A		124-1	N/A	
72-1(A)	N/A		72-4(B)	N/A		124-2	N/A	
72-1(B)	N/A		72-5	N/A		141-1	N/A	
72-1(C)	N/A		72-6	N/A		141-2	N/A	
72-1(D)	N/A					141-5	N/A	

Y=Acceptable (Study satisfied Guideline)/Concur

P=Partial (Study partially fulfilled Guideline but additional information is needed)

S=Supplemental (Study provided useful information but Guideline was not satisfied)

N=Unacceptable (Study was rejected)/Nonconcur

N/A=No studies submitted for EEB.

DATA EVALUATION RECORD

1. **CHEMICAL:** Triadimefon (Bayleton).
Shaughnessey No. 109901.
2. **TEST MATERIAL:** Triadimefon (Technical Bayleton); CAS No. 43121-43-3; Batch No. 48580; 95% purity; white to tan crystals.
3. **STUDY TYPE:** 71-4. Avian Reproduction Study.
Species Tested: Bobwhite quail (*Colinus virginianus*).
4. **CITATION:** Stafford, T.R. 1992. Technical Bayleton: A One Generation Reproduction Study with Bobwhite Quail. Study performed by Miles Inc., Stilwell, Kansas. Study No. BL741701. Submitted by Miles Inc., Kansas City, MO. EPA MRID No. 423423-01.
5. **REVIEWED BY:**
Dennis J. McLane, Wildlife Biologist Signature: *[Signature]*
Section 1, Ecological Effect Branch
Environmental Fate and Effects Division Date: 3-30-93
6. **APPROVED BY:**
Les Touart, Section Chief Signature: *[Signature]*
Section 1, Ecological Effect Branch
Environmental Fate and Effects Division Date: 4-13-93
7. **CONCLUSIONS:** This study is scientifically sound but does not fulfill the guideline requirements for an avian reproduction study. Due to problems with the incubator cracking eggs, weeks 14, 15, and 16 data were omitted and the study extended. EEB can not assume production is the same for both the first three week period and the second three period. Physiological changes would be expected at the end of the reproductive cycle. In addition EEB's statistical analysis shows statistically significant difference between the control and 200 ppm level but not the 587 ppm level or at the 50 ppm lowest level. This same differences occurred with the covariate analysis of the male body weight. The cracking differences may be the result of the incubator incident or the birds at the 200 ppm level, by chance, may be a different population. Based on this the

DATA EVALUATION RECORD

1. **CHEMICAL:** Triadimefon (Bayleton).
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5. **REVIEWED BY:**

Carolyn F. Poppell, Sc.M.
Senior Scientist
KBN Engineering and
Applied Sciences, Inc.

Signature: P. Kosalwat
for CFP
Date: 10/15/92
6. **APPROVED BY:**

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

Signature: P. Kosalwat
Date: 10/15/92

Henry T. Craven, M.S.
Supervisor, EEB/EFED
USEPA

Signature:
Date:
7. **CONCLUSIONS:** This study is scientifically sound and fulfills the guideline requirements for an avian reproduction study. Mean measured dietary concentrations of Bayleton at 50 and 200 ppm a.i. had no effects upon mortality, behavior, or reproductive performance of bobwhite quail during the study. The NOEC was determined to be 200 ppm a.i., based on a significant decrease in percentage of viable embryos of eggs set at 587 ppm a.i. mean measured concentration. *delete*
8. **RECOMMENDATIONS:** N/A.

incubator incident change in protocol would make this test unique and not comparable with other studies.

8. RECOMMENDATIONS: N/A

9. BACKGROUND: On 9-9-82 Rieder reviewed a quail reproduction study which showed effects in eggs cracked, fertile eggs, viable embryos, hatchling, and 14 day old survivors at 100 ppm making the 20 ppm the NOEL. This is a "Core" study. The mallard study reviewed on 9-13-82 showed no effects at the highest level tested and had poor reproductive success in the controls. Due to the poor controls the study was "supplemental".

10. DISCUSSION OF INDIVIDUAL TESTS: N/A.

11. MATERIALS AND METHODS:

- A. Test Animals: Pen-reared, unmated bobwhite quail (*Colinus virginianus*) were purchased from Barrett's Quail Farm, Houston, Texas. The birds were approximately 16 weeks of age at study initiation, and were acclimated to the laboratory environment for a minimum of 14 days. All birds were from the same hatch, and phenotypically indistinguishable from wild birds. At test initiation, all birds were examined for physical injuries and general health. Birds that were injured or did not appear healthy were excluded from the study.
- B. Dose/Diet Preparation/Food Consumption: Diets were prepared by dissolving the test compound in corn oil and acetone, and mixing with feed. Diets were prepared weekly and stored in a freezer until used. The control diet contained an amount of the solvent (acetone) and carrier (corn oil) equal to that in the treated diets. The acetone subsequently evaporated from the test diet. Based on known toxicity data, nominal test concentrations of technical triadimefon used in the study were 50, 200, and 600 parts per million (ppm) of active ingredient (a.i.). Each of the four groups of birds were fed the appropriate diet from test initiation until terminal sacrifice.

Basal diet for adult birds was formulated by Agway, Inc. Offspring were fed Teklad Quail Starter. The composition of these diets was presented in the report. The test substance was not mixed into the diet of the offspring. Food and water were supplied *ad libitum* during acclimation and during the test.

Samples of control and treated diets were collected immediately after mixing and frozen. Samples taken on weeks 1, 5, 10, 15, and 20 were analyzed for triadimefon diet concentration. Homogeneity testing was performed on the first feed mixture from the 50 and 600 ppm diet levels. The stability of test material in the diet was determined by analysis of samples from feeders on odd-numbered days during the first week of the study. Samples were analyzed using gas chromatography by the Miles Inc. Environmental Fate Analytical Laboratory.

- C. **Design:** The birds were randomly distributed into four groups as follows:

triadimefon Nominal Concentration	Number of Pens	<u>Birds Per Pen</u>	
		Males	Females
Control (0 ppm)	18	1	1
50 ppm	18	1	1
200 ppm	18	1	1
600 ppm	18	1	1

Treatment levels were based upon known toxicity data. Adult birds were identified by individual leg bands. The primary phases of the study and their approximate durations were as follows:

1. Acclimation - 2 weeks
2. Pre-photostimulation - 7 weeks
3. Pre-egg laying (with photostimulation) - 5 weeks
4. Egg laying - 12 weeks
5. Post-adult sacrifice (final incubation, hatching, 14-day offspring rearing period) - 6 weeks.

- D. **Pen Facilities:** Adult birds were housed in pens constructed of stainless steel wire grid and sheeting. The pens measured approximately 55 x 27 x 24 cm with sloping floors. The average temperature in the adult study room was 72°F (22°C) with an average relative humidity of 50%.

The photoperiod during the first 7 weeks of the study was 7 hours of light per day. The photoperiod was then increased to 17 hours of light per day for the duration of the study. Throughout the study, the birds received a minimum of 6 foot-candles of illumination provided by daylight spectrum fluorescent lights. A 40-minute "dawn/dusk" cycle was used in light/dark transition.

- E. **Adult Observations/Gross Pathology:** Adult birds were observed at least once daily throughout the study for

signs of toxicity, injuries, or illness. Mortalities occurring prior to terminal adult sacrifice were recorded and necropsied. Adult body weights were measured at study initiation, weekly through week 8, and at terminal sacrifice (week 22). Feed consumption was measured by cage weekly throughout the adult phase of the study.

- F. Eggs/Eggshell Thickness: Eggs were collected twice daily, labeled according to pen of origin, and fumigated to prevent pathogen contamination. The eggs were then stored at 60°F (15.6°C) with a relative humidity of 50%. Eggs were removed from the egg cooler weekly and candled for shell cracks. Cracked eggs were recorded and discarded. Eggs not cracked or used for eggshell thickness measurements were placed in an incubator maintained at 99.7°F (37.6°C) with a relative humidity of approximately 55%. All eggs were rotated automatically every 2 hours while in the incubator. Eggs were candled again on day 11 of incubation to determine fertility and embryo viability and on day 18 to determine embryo survival.

Eggs were collected every other week for eggshell strength and thickness measurements. Eggshell strength measurements were taken at three points around the equator. Eggs were then opened, the contents removed, the shell washed, and allowed to air dry for a minimum of 48 hours at room temperature. The average thickness of the dried shell plus membrane was determined by measuring (to the nearest 0.01 mm) three points around the equator of the egg using a micrometer.

- G. Hatchlings: Hatchlings were removed from the hatcher on days 24 and 25 of incubation, banded, weighed, and housed according to week of hatch and parental treatment group. Hatchlings were identified by numbered wing bands and placed in batteries of brooding pens from the time of hatch through day 14 post-hatch. Each pen measured 90 x 72 x 24 cm, and was constructed of galvanized wire mesh and sheeting. Temperatures in the brooding compartment were maintained at 100°F (37.8°C). The photoperiod was maintained at 12 hours of light per day. Hatchlings were fed untreated diet. Hatchling body weights were measured and recorded at hatch and on day 14. Feed consumption was not monitored.

Hatchlings were observed daily throughout the 14-day period for signs of toxicity, injuries or illness. Mortalities occurring prior to the end of the 14-day

period were recorded and discarded. Hatchlings surviving to day 14 were sacrificed, weighed, and discarded.

- H. **Statistics:** Prior to statistical analysis, all percentage data were transformed using a square-root arcsine transformation. Bartlett's test or Levene's test of equal variance was performed on each study parameter to determine if treatment groups had unequal variances. If variances were not determined to be unequal, subsequent analyses were conducted using parametric techniques. If unequal variances were detected, non-parametric procedures were used. Parametric procedures included a standard one-way analysis of variance. If ANOVA indicated treatment groups were significantly different from controls, the means of the treatment groups were compared to control means using a one-tailed Dunnett's test. If non-parametric procedures were required, the Kruskal-Wallis and Dunn's Summed Rank test were used.

Each of the following parameters was analyzed statistically:

Adult Body Weight	Hatchling Body Weight
Adult Feed Consumption	14-Day Old Survivors
Eggs Laid per Hen	per Hen
Eggs Cracked of Eggs Laid	14-Day Old Survivors
Viable Embryos of Eggs Set	of Hatchlings
Live 3-Week Embryos of	Survivor Body Weight
Viable Embryos	Eggshell Strength
Hatchlings per Hen	Eggshell Thickness
Hatchlings of 3-Week	Hatchlings of Viable
Embryos	Embryos

12. REPORTED RESULTS

- A. **Diet Analysis:** Homogeneity testing indicated that the test material was thoroughly mixed into the diet with the coefficients of variance of $\leq 6\%$. The average measured concentrations were 92 and 96% of the 50- and 600-ppm nominal values, respectively. The test material was determined to be stable in the diet when stored at room temperature for 7 days. Mean measured concentrations were 80%, 91%, and 78% of nominal concentrations for the 50-, 200-, and 600-ppm diets, respectively, after 7 days of storage at room temperature. Mean measured diet concentrations during the 20-week exposure period are shown in Table 1 (attached).

- B. Mortality and Behavioral Reactions: A total of 8 birds died during the course of the study. Two mortalities occurred in the control group. One control female that had suffered cage-mate aggression was found dead during week 12. Another control female was found dead during week 22. No symptoms were evident prior to death and no gross lesions were found during the *post-mortem* examination.

Four mortalities occurred at the 50 ppm level. One male died during week 5 and the *post-mortem* examination revealed a blocked intestine. A female died during week 6, showing signs of emaciation upon examination. A male died during week 15 and a female died during week 17, both due to cage-mate aggression.

One female in the 200 ppm group died during week 15, apparently as a result of severe cage-mate aggression.

At the 587 ppm level, one female died during week 17. The bird was noted as ataxic during the first two weeks of the study, apparently due to an unusual curve to the spine that affected mobility. The bird was found dead during week 17, after being observed as hyporeactive several days prior.

The authors concluded that none of the observed mortalities were treatment-related. All mortalities were considered incidental, with no clear dose-response in evidence. No overt signs of intoxication were observed during the study in any test group. *Post-mortem* observations demonstrated several anomalies; however, all observations occurred in a small number of birds and no dose-response was indicated (Table 4, attached).

The authors reported a malfunction of the incubator during week 17 of the study, which cracked a number of eggs from weeks 14, 15, and 16. A number of eggs were cracked at the 200 and 600 ppm levels, preventing accurate statistical analysis. Reproductive data (eggs laid and cracked, viability, 3-week embryo survival, hatch data and hatch weights) for these three weeks were therefore not included in the statistical analysis. The study was extended an additional 3 weeks to provide a minimum of 8 weeks of reproductive data.

- C. Adult Body Weight and Food Consumption: There were no apparent treatment-related effects upon adult body

weight at any of the concentrations tested (Table 2, attached). There was a slight, but statistically significant, decrease in feed consumption during week 15 in the 50 ppm level and a statistically significant increase during week 5 at the 200 ppm level (Table 3, attached). There was no clear dose-response and these were considered to be incidental findings.

- D. **Reproduction:** When compared to the control group, there were no statistically significant differences in reproductive parameters at any concentration tested (Tables 5, 6, and 7, attached).
- E. **Egg Shell Thickness:** There were no significant differences in the overall mean eggshell thickness and strengths of control eggs compared to treatment eggs (Table 9, attached).
- F. **Offspring Body Weight:** There were no apparent or significant differences between the control and any treatment group in body weights of offspring at hatching or at 14 days of age (Table 7, attached).

13. **STUDY AUTHOR'S CONCLUSIONS/QUALITY ASSURANCE MEASURES:**

There were no apparent effects on adult quail fed triadimefon-treated diets. Adult body weight data showed no significant differences between control birds and birds treated with technical triadimefon. Feed consumption data did not demonstrate a compound- or treatment-related effect. No clinical signs of toxicity were observed and no compound- or treatment-related mortality occurred in any dietary level. No observable effects occurred in any of the monitored reproductive parameters. The LOEC for bobwhite quail is greater than 587 ppm a.i. of triadimefon.

The report stated that the study was conducted in conformance with Good Laboratory Practice regulations (40 CFR Part 160). Quality assurance audits were conducted during the study and the final report was signed by a Quality Assurance Officer for Miles Inc.

14. **REVIEWER'S DISCUSSION AND INTERPRETATION OF STUDY RESULTS:**

- A. **Test Procedure:** The test procedures were in accordance with Subdivision E - Hazard Evaluation: Wildlife and Aquatic Organisms, ASTM, and SEP guidelines except for the following deviations:

Behavioral observations of offspring were not reported.

Observations on food palatability were not reported.

- B. Statistical Analysis:** Statistical analyses of reproductive parameters were performed by the reviewer using analysis of variance (ANOVA) arcsine square-root transformation of the ratio data. The comparison between control data and data from each treatment level was made using multiple comparison test, Bonferroni. Printouts are attached.

Four parameters show statistical significance. eggs cracked, eggs cracked/eggs laid, male body weight and female body weight. The Bonferroni test would only separate out the differences in levels for eggs cracked and male body weight. These are discussed below under section C.

In addition to these items "Table 6. Reproductive success Data for Quail Fed Bayleton" has a several wrong values. Attached is EEB's version of the same with the reported values corrected values.

- C. Discussion/Results:** Chemical analyses of diet samples show that measured concentrations of triadimefon were very similar to nominal concentrations. All measured values were within 2% of nominal values. Homogeneity and stability data indicate that the method of diet preparation achieved a homogeneous mix and triadimefon was stable in the diet.

Due to problems with the incubator cracking eggs, weeks 14, 15, and 16 data were omitted and the study extended. EEB can not assume production is the same for both the first three week period and the second three period. Physiological changes would be expected at the end of the reproductive cycle. In addition EEB's statistical analysis shows statistically significant difference between the control and 200 ppm level but not the 587 ppm level or at the 50 ppm lowest level. This same differences occurred with the covariate analysis of the male body weight. The cracking differences may be the result of the incubator incident or the birds at the 200 ppm level, by chance, may be a different population. Based on this the incubator incident change in protocol would make this test unique and not comparable with other studies.

- D. Adequacy of the Study:**

(1) **Classification:** Supplemental

- (2) **Rationale:** Extending the study and disregarding three weeks of data does not follow the guideline.
- (3) **Repairability:** No, however EEB has a core bobwhite quail reproduction study for this chemical and no other work with bobwhite are required.

5. COMPLETION OF ONE-LINER: Yes; March 30, 1993

RIN 5710-93

TRIADMEFON EFB REVIEW

Page _____ is not included in this copy.

Pages 16 through 24 are not included.

The material not included contains the following type of information:

- ☐ Identity of product inert ingredients.
- ☐ Identity of product impurities.
- ☐ Description of the product manufacturing process.
- ☐ Description of quality control procedures.
- ☐ Identity of the source of product ingredients.
- ☐ Sales or other commercial/financial information.
- ☐ A draft product label.
- ☐ The product confidential statement of formula.
- ☐ Information about a pending registration action.
- ☒ FIFRA registration data.
- ☐ The document is a duplicate of page(s) _____.
- ☐ The document is not responsive to the request.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

SAS 8:32 Tuesday, March 30, 1993
1

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O T E E E V L N H S K
S T R L C S E E H S K
1 A 42 3 36 36 36 21 18 0.296 6.743 24.544 6073 221 226 209 269
2 A 33 1 30 30 30 20 20 0.282 6.476 25.540 5397 222 252 198 244
3 A 47 0 45 42 39 32 26 0.284 7.255 30.657 6086 204 226 232 310
4 A 36 1 32 30 32 26 0.289 7.122 31.842 5899 206 238 209
5 A 12 2 8 8 5 2 2 0.272 5.500 25.150 5794 253 242 228 275
6 A 14 0 13 13 13 12 11 0.316 6.858 31.733 5745 233 275 231 261
7 A 42 6 33 20 18 12 11 0.345 6.742 28.727 5580 199 219 245 322
8 A 48 0 45 44 44 5 4 0.319 6.180 29.850 6237 240 264 228 320
9 A 42 0 39 36 36 33 32 0.305 7.436 35.775 6139 251 295 236 279
10 A 30 0 28 27 25 10 10 0.312 7.330 28.000 5888 251 276 261 323
11 A 37 0 35 35 35 26 19 0.322 7.185 26.732 5929 233 251 225 303
12 A 51 1 47 18 14 10 10 0.317 6.479 24.130 6237 244 269 221 277
13 A 42 2 38 38 36 34 30 0.317 7.379 32.830 5866 238 270 231 322
14 A 41 0 39 39 38 34 26 0.315 7.165 30.504 5661 201 228 237 311
15 A 41 0 39 39 38 34 26 0.315 7.165 30.504 5661 201 228 237 311
16 A 34 0 32 32 21 10 6 0.323 6.600 27.142 5860 214 254 234 282
17 A 26 2 31 30 30 26 24 0.293 7.115 29.146 5553 214 230 217 262
18 A 36 2 31 30 30 26 24 0.293 7.115 29.146 5553 214 230 217 262
19 A 41 0 39 38 38 36 34 0.332 7.297 33.550 6097 249 280 236 296
20 B 43 2 39 33 33 25 16 0.301 6.884 27.419 6329 233 296 234 318
21 B 46 0 43 43 43 41 35 0.311 7.076 28.497 6028 241 265 222 300
22 B 50 2 45 43 42 38 35 0.311 6.484 28.306 6216 245 273 221 295
23 B 33 1 29 29 28 23 12 0.295 6.729 21.713 5577 223 238 227 286
24 B 39 1 26 26 26 23 10 0.301 6.217 34.115 5626 204 234 212 272
25 B 32 1 29 29 29 22 22 0.345 8.473 34.186 5646 228 253 236 305
26 B 42 2 22 19 18 18 0.316 7.361 30.083 5908 253 297 224 270
27 B 42 1 38 31 28 24 17 0.267 7.475 23.418 5722 239 270 199 271
28 B 42 0 39 23 17 13 3 0.315 7.115 7.810 6011 238 263 259 328
29 B 42 0 39 23 17 13 3 0.315 7.115 7.810 6011 238 263 259 328
30 B 42 0 39 23 17 13 3 0.315 7.115 7.810 6011 238 263 259 328
31 B 42 0 39 23 17 13 3 0.315 7.115 7.810 6011 238 263 259 328
32 B 45 1 42 38 38 30 18 0.329 7.360 27.044 6493 268 303 211 182
33 B 43 7 43 38 38 30 18 0.329 7.360 27.044 6493 268 303 211 182
34 B 25 1 22 20 20 16 12 0.273 6.200 22.158 5300 226 235 211 232
35 B 25 1 22 20 20 16 12 0.273 6.200 22.158 5300 226 235 211 232
36 B 25 1 22 20 20 16 12 0.273 6.200 22.158 5300 226 235 211 232
37 C 25 2 22 18 13 3 2 0.305 6.400 28.500 5929 261 278 212 276
38 C 42 1 39 38 38 36 32 0.318 6.911 32.097 5711 217 240 257 345
39 C 55 5 52 48 47 41 38 0.323 7.407 29.205 6364 237 274 217 285
40 C 31 2 28 27 26 18 0.334 7.204 24.195 5600 238 273 230 304
41 C 27 3 21 21 19 17 0.285 8.841 30.918 6274 237 261 243 275
42 C 45 4 38 38 38 34 27 0.293 8.318 33.778 6040 252 271 231 310
43 C 19 1 16 16 16 12 10 0.318 6.723 29.340 6610 256 289 241 324
44 C 39 1 36 33 26 16 11 0.332 6.563 29.918 6803 252 288 276 342
45 C 39 1 36 33 26 16 11 0.332 6.563 29.918 6803 252 288 276 342
46 C 49 2 44 39 39 35 31 0.325 6.451 28.990 5484 214 243 228 268
47 C 40 1 37 36 36 34 34 0.312 7.291 35.574 6212 242 284 236 302
48 C 24 1 21 20 20 19 17 0.301 7.532 31.006 5751 251 286 210 262
49 C 31 2 27 26 26 18 15 0.307 6.406 22.831 5569 200 223 238 309
50 C 11 1 9 6 5 3 0.293 5.700 29.967 5577 239 272 228 272
51 C 38 3 33 15 15 12 11 0.306 7.267 31.355 6252 227 258 234 314
52 C 43 4 36 36 36 27 17 0.309 6.315 32.128 5630 225 255 215 268
53 C 42 4 40 35 26 21 17 0.315 6.662 32.618 5931 245 273 241 305
54 C 42 4 40 35 26 21 17 0.315 6.662 32.618 5931 245 273 241 305
55 D 39 3 37 37 37 33 30 0.333 7.118 28.957 5860 237 272 224 288
56 D 39 3 37 37 37 33 30 0.333 7.118 28.957 5860 237 272 224 288
57 D 31 3 26 26 26 23 21 0.277 6.765 29.243 5812 249 301 218 285
58 D 14 3 9 9 9 9 9 0.286 6.765 29.243 5812 249 301 218 285

```

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59 D 26 24 23 23 18 18 0.297 7.244 33.317 5542 232 246 244 311
60 D 41 2 36 31 31 8 6 0.329 6.525 29.567 5734 224 246 230 311
61 D 29 27 26 26 23 22 0.312 7.048 23.464 5624 208 241 244 311
62 D 36 34 34 34 29 28 0.324 7.510 30.532 5495 216 251 218 291
63 D 22 20 15 15 12 11 0.322 7.175 34.982 5547 230 276 229 281
64 D 39 1 35 35 34 24 18 0.319 7.221 27.417 5829 235 260 240 308
65 D 42 2 37 11 10 0.319 7.221 27.417 5829 235 260 240 308
66 D 45 2 40 37 36 25 21 0.315 7.108 33.114 6379 247 282 237 308
67 D 19 1 16 15 14 9 7 0.288 7.000 29.500 5474 231 256 232 274
68 D 35 2 31 23 23 22 19 0.363 7.327 29.679 5713 221 259 214 270
69 D 35 1 31 24 24 20 0.313 7.625 30.955 5970 237 255 230 298
70 D 50 1 46 45 44 41 31 0.313 7.455 29.539 6166 213 249 228 303
71 D 31 29 29 27 20 0.294 6.265 30.130 5468 224 249 212 272
72 D 37 3 32 13 13 11 10 0.303 7.127 26.360 6001 221 251 260 338

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TRT=A

N Obs	Variable	N	Minimum	Maximum	Mean
18	EL	16	12.000000	51.000000	36.0625000
	EC	16	0	6.000000	1.1250000
	ES	16	8.000000	47.000000	32.6250000
	VE	16	8.000000	44.000000	29.3750000
	LE	16	5.000000	44.000000	28.2500000
	NH	16	2.000000	34.000000	19.6250000
	HS	16	2.000000	32.000000	17.0625000
	THICK	16	0.272000	0.345000	0.3090000
	HATWT	16	5.500000	7.436000	6.8250000
	SURVWT	16	24.130000	35.775000	28.6785000
	FOOD	18	3030.00	6237.00	5718.72
	PREM	18	199.000000	262.000000	229.5555556
	POSTM	16	219.000000	295.000000	254.6875000
	PREF	18	198.000000	261.000000	229.7222222
	POSTF	15	244.000000	323.000000	291.6666667

N Obs	Variable	Std Dev
18	EL	11.162504
	EC	1.6278821
	ES	10.8742816
	VE	10.5506714
	LE	10.8412791
	NH	10.6638017
	HS	9.5531408
	THICK	0.0195482
	HATWT	0.5123599
	SURVWT	3.3775691
	FOOD	706.5264497
	PREM	19.1962687
	POSTM	23.6042899
	PREF	14.3846550
	POSTF	25.5669057

TRT=B

N Obs	Variable	N	Minimum	Maximum	Mean
18	EL	14	22.000000	50.000000	36.5000000
	EC	14	0	2.000000	0.9285714
	ES	14	19.000000	45.000000	33.2142857
	VE	14	19.000000	43.000000	30.0714286
	LE	14	16.000000	43.000000	29.0714286

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NH	14	12.000000	41.000000	25.1428571
HS	14	3.000000	35.000000	19.7857143
THICK	14	0.267000	0.345000	0.3070000
HATWT	14	6.200000	8.473000	7.0257857
SURVWT	14	7.810000	34.186000	27.1500000
FOOD	18	902.000000	6857.00	5169.36
PREM	18	204.000000	268.000000	236.5555556
POSTM	14	230.000000	303.000000	263.5000000
PREF	18	199.000000	271.000000	231.6666667
POSTF	14	182.000000	328.000000	281.6428571

N Obs	Variable	Minimum	Maximum	Std Dev
18	EL	8.9076458	0.8287419	8.9076458
	EC	8.6307017	8.2505411	8.6307017
	ES	8.9825839	8.9344376	8.9825839
	VE	9.5930950	0.0213073	9.5930950
	LE	0.5918204	6.9478655	0.5918204
	NH	1700.02	15.4813825	1700.02
	HS	24.5631055	20.4133751	24.5631055
	THICK	39.0711523		39.0711523
	HATWT			
	SURVWT			
	FOOD			
	PREM			
	POSTM			
	PREF			
	POSTF			

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TRT=C

N Obs	Variable	N	Minimum	Maximum	Mean
18	EL	17	1.000000	55.000000	33.0588235
	EC	11	1.000000	4.000000	2.2727273
	ES	17	1.000000	52.000000	29.4117647
	VE	17	1.000000	48.000000	26.6470588
	LE	17	1.000000	47.000000	25.1764706
	NH	17	1.000000	41.000000	20.8823529
	HS	17	1.000000	38.000000	18.1764706
	THICK	16	0.285000	0.334000	0.3110000
	HATWT	17	5.700000	8.841000	6.9877059
	SURVWT	17	22.831000	35.574000	30.4247059
	FOOD	18	3490.00	6803.00	5801.89
	PREM	18	200.000000	261.000000	238.0000000
	POSTM	17	223.000000	289.000000	265.0588235
	PREF	18	210.000000	276.000000	232.5555556
	POSTF	17	262.000000	345.000000	297.5294118

N Obs	Variable	Std Dev
18	EL	14.0288568
	EC	1.1037127
	ES	13.1484734
	VE	12.8352112
	LE	12.8171530
	NH	12.4593457
	HS	11.4413466
	THICK	0.0139762
	HATWT	0.7654010
	SURVWT	3.2998580
	FOOD	712.9138129

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PREM	16.8488087
POSTM	19.5846579
PREF	16.2742027
POSTF	25.4880306

TRT=D

N Obs	Variable	N	Minimum	Maximum	Mean
18	EL	17	14.000000	50.000000	33.5882353
	EC	11	1.000000	3.000000	1.9090909
	ES	17	9.000000	46.000000	30.0000000
	VE	16	11.000000	45.000000	26.5000000
	LE	16	10.000000	44.000000	26.0625000
	NH	15	8.000000	41.000000	21.2000000
	HS	15	6.000000	31.000000	18.8000000
	THICK	17	0.277000	0.363000	0.3121765
	HATWT	15	6.265000	7.625000	7.1008667
	SURVWT	15	23.464000	34.982000	29.7837333
	FOOD	18	3644.00	6379.00	5678.94
	PREM	18	208.000000	273.000000	231.8888889
	POSTM	17	241.000000	301.000000	262.0000000
	PREF	18	202.000000	280.000000	228.5000000
	POSTF	17	270.000000	338.000000	296.6470588

N Obs	Variable	Std Dev
18	EL	9.4476110
	EC	0.8312094
	ES	9.1378334
	VE	9.7843412
	LE	9.6985824
	NH	9.0490726
	HS	7.6737028
	THICK	0.0206011
	HATWT	0.3601751
	SURVWT	2.8168488
	FOOD	573.3001957
	PREM	15.2311171
	POSTM	16.7965770
	PREF	13.5960634
	POSTF	18.3641675

1. ANALYSIS OF EL DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

NOTE: Due to missing values, only 64 observations can be used in this analysis.

1. ANALYSIS OF EL DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	141.86305147	0.38	0.7682
Error	60	7477.49632353		
Corrected Total	63	7619.35937500		

R-Square	C.V.	RESP Mean
0.018619	32.16873	34.70312500

Source	DF	Type I SS	F Value	Pr > F
TRT	3	141.86305147	0.38	0.7682
Source	DF	Type III SS	F Value	Pr > F
TRT	3	141.86305147	0.38	0.7682

1. ANALYSIS OF EL DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 60 MSE= 124.6249
Critical Value of Dunnnett's T= 2.410

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - A	-9.409	0.438	10.284
D - A	-11.846	-2.474	6.898
C - A	-12.376	-3.004	6.368

1. ANALYSIS OF EL DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 60 MSE= 124.6249

Critical Value of T= 2.72855
Comparisons significant at the 0.05 level are indicated by ****.

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - A	-10.710	0.438	11.585
B - D	-8.082	2.912	13.905
B - C	-7.552	3.441	14.434
A - B	-11.585	-0.438	10.710
A - D	-8.136	2.474	13.084
A - C	-7.606	3.004	13.613
D - B	-13.905	-2.912	8.082
D - A	-13.084	-2.474	8.136
D - C	-9.918	0.529	10.977
C - B	-14.434	-3.441	7.552
C - A	-13.613	-3.004	7.606
C - D	-10.977	-0.529	9.918

2. ANALYSIS OF EC DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

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

2. ANALYSIS OF EC DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	15.21128871	3.59	0.0202
Error	48	67.76948052		
Corrected Total	51	82.98076923		
R-Square		C.V.		
		RESP Mean		
		0.183311		
		80.24335		
		1.48076923		
Source	DF	Type I SS	F Value	Pr > F

TRT	3	15.21128871	3.59	0.0202
Source	DF	Type III SS	F Value	Pr > F
TRT	3	15.21128871	3.59	0.0202

2. ANALYSIS OF EC DATA

8:32 Tuesday, March 30, 1993

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General Linear Models Procedure

Dunnnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 48 MSE= 1.411864
Critical Value of Dunnnett's T= 2.439

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

TRT Comparison	Simultaneous		Simultaneous	
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
C - A	0.013	1.148	2.283	***
D - A	-0.351	0.784	1.919	
B - A	-1.257	-0.196	0.864	

2. ANALYSIS OF EC DATA

8:32 Tuesday, March 30, 1993

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General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 48 MSE= 1.411864
Critical Value of T= 2.75202

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

TRT Comparison	Simultaneous		Simultaneous	
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
C - D	-1.031	0.364	1.758	
C - A	-0.133	1.148	2.429	***
C - B	0.027	1.344	2.662	
D - C	-1.758	-0.364	1.031	
D - A	-0.497	0.784	2.065	
D - B	-0.337	0.981	2.298	
A - C	-2.429	-1.148	0.133	
A - D	-2.065	-0.784	0.497	
A - B	-1.000	0.196	1.393	

B - C	-2.662	-1.344	-0.027	***
B - D	-2.298	-0.981	0.337	
B - A	-1.393	-0.196	1.000	

3. ANALYSIS OF ES DATA

8:32 Tuesday, March 30, 1993

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General Linear Models Procedure

Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

NOTE: Due to missing values, only 64 observations can be used in this analysis.

3. ANALYSIS OF ES DATA

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General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	168.13458508	0.49	0.6896
Error	60	6844.22478992		
Corrected Total	63	7012.35937500		

R-Square	C.V.	RESP Mean
0.023977	34.22854	31.20312500

Source	DF	Type I SS	F Value	Pr > F
TRT	3	168.13458508	0.49	0.6896
Source	DF	Type III SS	F Value	Pr > F
TRT	3	168.13458508	0.49	0.6896

3. ANALYSIS OF ES DATA

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General Linear Models Procedure

Dunnnett's T tests for variable: RESP

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

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - A	-8.831	0.589	10.010
D - A	-11.591	-2.625	6.341
C - A	-12.180	-3.213	5.753

3. ANALYSIS OF ES DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 60 MSE= 114.0704
Critical Value of T= 2.72855

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - A	-10.076	0.589	11.254
B - D	-7.303	3.214	13.732
B - C	-6.715	3.803	14.320
A - B	-11.254	-0.589	10.076
A - D	-7.526	2.625	12.776
A - C	-6.937	3.213	13.364
D - B	-13.732	-3.214	7.303
D - A	-12.776	-2.625	7.526
D - C	-9.407	0.588	10.584
C - B	-14.320	-3.803	6.715
C - A	-13.364	-3.213	6.937
C - D	-10.584	-0.588	9.407

4. ANALYSIS OF VE DATA

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General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

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

4. ANALYSIS OF VE DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	157.18510738	0.47	0.7068
Error	59	6626.56092437		
Corrected Total	62	6783.74603175		

R-Square C.V. RESP Mean
0.023171 37.76386 28.06349206

Source	DF	Type I SS	F Value	Pr > F
TRT	3	157.18510738	0.47	0.7068
Source	DF	Type III SS	F Value	Pr > F
TRT	3	157.18510738	0.47	0.7068

4. ANALYSIS OF VE DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnett's T tests for variable: RESP

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= 112.3146
Critical Value of Dunnett's T= 2.412

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - A	-8.659	0.696	10.052
C - A	-11.633	-2.728	6.177
D - A	-11.914	-2.875	6.164

4. ANALYSIS OF VE DATA

8:32 Tuesday, March 30, 1993

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 59 MSE= 112.3146
Critical Value of T= 2.73013

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

TRT Comparison	Simultaneous			Simultaneous Upper Limit
	Lower Limit	Difference Between Means	Confidence Limit	
B - A	-9.892	0.696	11.285	
B - C	-7.018	3.424	13.867	
B - D	-7.017	3.571	14.160	
A - B	-11.285	-0.696	9.892	
A - C	-7.350	2.728	12.806	
A - D	-7.355	2.875	13.105	
C - B	-13.867	-3.424	7.018	
C - A	-12.806	-2.728	7.350	
C - D	-9.931	0.147	10.225	
D - B	-14.160	-3.571	7.017	
D - A	-13.105	-2.875	7.355	
D - C	-10.225	-0.147	9.931	

5. ANALYSIS OF LE DATA

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General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

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

5. ANALYSIS OF LE DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESP				
Source	DF	Sum of Squares	F Value	Pr > F
Model	3	155.52048319	0.45	0.7207
Error	59	6851.33665966		

R-Square
0.022195
C.V.
39.84122
RESP Mean
27.04761905

Source	DF	Type I SS	F Value	Pr > F
TRT	3	155.52048319	0.45	0.7207
Source	DF	Type III SS	F Value	Pr > F
TRT	3	155.52048319	0.45	0.7207

5. ANALYSIS OF LE DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnett's T tests for variable: RESP

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= 116.1244
Critical Value of Dunnett's T= 2.412

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

TRT Comparison	Simultaneous			Simultaneous Upper Limit
	Lower Limit	Difference Between Means	Confidence Limit	
B - A	-8.692	0.821	10.335	
D - A	-11.378	-2.188	7.003	
C - A	-12.128	-3.074	5.981	

5. ANALYSIS OF LE DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 59 MSE= 116.1244
Critical Value of T= 2.73013

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

TRT Comparison	Simultaneous			Simultaneous Upper Limit
	Lower Limit	Difference Between Means	Confidence Limit	
B - A	-9.945	0.821	11.588	
B - D	-7.758	3.009	13.776	

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Source	DF	Sum of Squares	F Value	Pr > F
Model	3	249.29036324	0.76	0.5233
Error	58	6373.62899160		
Corrected Total	61	6622.91935484		

R-Square 0.037641 C.V. 48.53896 RESP Mean 21.59677419

6. ANALYSIS OF NH DATA

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

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

6. ANALYSIS OF NH DATA

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	249.29036324	0.76	0.5233
Error	58	6373.62899160		
Corrected Total	61	6622.91935484		

R-Square 0.037641 C.V. 48.53896 RESP Mean 21.59677419

6. ANALYSIS OF NH DATA

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General Linear Models Procedure

Dunnett's T tests for variable: RESP

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= 109.8902
Critical Value of Dunnett's T= 2.414

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
B - A	-3.745	5.518	14.781
D - A	-7.522	1.575	10.672
C - A	-7.559	1.257	10.073

6. ANALYSIS OF NH DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 109.8902
Critical Value of T= 2.73177

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
B - D	-6.699	3.943	14.585
B - C	-6.075	4.261	14.596
B - A	-4.962	5.518	15.998
D - B	-14.585	-3.943	6.699
D - C	-9.827	0.318	10.462
D - A	-8.717	1.575	11.867
C - B	-14.596	-4.261	6.075
C - D	-10.462	-0.318	9.827
C - A	-8.717	1.257	11.232
A - B	-15.998	-5.518	4.962
A - D	-11.867	-1.575	8.717
A - C	-11.232	-1.257	8.717

7. ANALYSIS OF HS DATA

8:32 Tuesday, March 30, 1993

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Number of observations in data set = 72

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

7. ANALYSIS OF HS DATA

 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	58.75412375	0.21	0.8911
Error	58	5484.16523109		
Corrected Total	61	5542.91935484		

R-Square C.V. RESP Mean
 0.010600 52.83811 18.40322581

Source	DF	Type I SS	F Value	Pr > F
TRT	3	58.75412375	0.21	0.8911
Source	DF	Type III SS	F Value	Pr > F
TRT	3	58.75412375	0.21	0.8911

7. ANALYSIS OF HS DATA

 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnnett's T tests for variable: RESP

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= 94.55457
 Critical Value of Dunnnett's T= 2.414

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - A	-5.869	2.723	11.315

7. ANALYSIS OF HS DATA

 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 94.55457
 Critical Value of T= 2.73177

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

TRT Comparison	Simultaneous		Difference Between Means	Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit		Lower Confidence Limit	Upper Confidence Limit
B - D	-8.886	0.986	0.986	10.857	10.857
B - C	-7.978	1.609	1.609	11.196	11.196
B - A	-6.998	2.723	2.723	12.444	12.444
D - B	-10.857	-0.986	-0.986	8.886	8.886
D - C	-8.786	0.624	0.624	10.034	10.034
D - A	-7.809	1.738	1.738	11.284	11.284
C - B	-11.196	-1.609	-1.609	7.978	7.978
C - D	-10.034	-0.624	-0.624	8.786	8.786
C - A	-8.138	1.114	1.114	10.366	10.366
A - B	-12.444	-2.723	-2.723	6.998	6.998
A - D	-11.284	-1.738	-1.738	7.809	7.809
A - C	-10.366	-1.114	-1.114	8.138	8.138

8. ANALYSIS OF EGGSHELL THICKNESS DATA

 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

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

8. ANALYSIS OF EGGSHELL THICKNESS DATA

 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	0.00023813	0.22	0.8826
Error	59	0.02135447		
Corrected Total	62	0.02159260		

R-Square	C.V.	RESP Mean
0.011028	6.138580	0.30992063

Source	DF	Type I SS	F Value	Pr > F
TRT	3	0.00023813	0.22	0.8826

Source	DF	Type III SS	F Value	Pr > F
TRT	3	0.00023813	0.22	0.8826

8. ANALYSIS OF EGGSHELL THICKNESS DATA

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8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 59 MSE= 0.000362
Critical Value of Dunnnett's T= 2.412

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
D - A	-0.01281	0.00318	0.01916
C - A	-0.01423	0.00200	0.01823
B - A	-0.01880	-0.00200	0.01480

8. ANALYSIS OF EGGSHELL THICKNESS DATA

35

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 59 MSE= 0.000362
Critical Value of T= 2.73013

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
D - C	-0.01692	0.00118	0.01927
D - A	-0.01492	0.00318	0.02127
D - B	-0.01357	0.00518	0.02392
C - D	-0.01927	-0.00118	0.01692
C - A	-0.01636	0.00200	0.02036
C - B	-0.01501	0.00400	0.02301
A - D	-0.02127	-0.00318	0.01692
A - C	-0.02036	-0.00200	0.01636
A - B	-0.01701	0.00200	0.02101
B - D	-0.02392	-0.00518	0.01357
B - C	-0.02301	-0.00400	0.01501
B - A	-0.02101	-0.00200	0.01701

9. ANALYSIS OF HATCHLING WEIGHT DATA

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8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

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

9. ANALYSIS OF HATCHLING WEIGHT DATA

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8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	0.63371156	0.62	0.6033
Error	58	19.68054362		
Corrected Total	61	20.31425518		

R-Square	C.V.	RESP Mean
0.031195	8.343413	6.98169355

Source	DF	Type I SS	F Value	Pr > F
TRT	3	0.63371156	0.62	0.6033

TRT	DF	Type III SS	F Value	Pr > F
3	3	0.63371156	0.62	0.6033

9. ANALYSIS OF HATCHLING WEIGHT DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnnett's T tests for variable: RESP

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= 0.33932
Critical Value of Dunnnett's T= 2.414

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

TRT Comparison	Simultaneous		Difference Between Means		Simultaneous Upper Confidence Limit	
	Lower Limit	Upper Limit	Lower Limit	Upper Limit	Lower Limit	Upper Limit
D - A	-0.230	0.276	0.276	0.781	0.276	0.781
B - A	-0.314	0.201	0.201	0.715	0.201	0.715
C - A	-0.327	0.163	0.163	0.653	0.163	0.653

9. ANALYSIS OF HATCHLING WEIGHT DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 0.33932
Critical Value of T= 2.73177

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

TRT Comparison	Simultaneous		Difference Between Means		Simultaneous Upper Confidence Limit	
	Lower Limit	Upper Limit	Lower Limit	Upper Limit	Lower Limit	Upper Limit
D - B	-0.516	0.075	0.075	0.666	0.075	0.666
D - C	-0.451	0.113	0.113	0.677	0.113	0.677
D - A	-0.296	0.276	0.276	0.848	0.276	0.848
B - D	-0.666	-0.075	-0.075	0.516	-0.075	0.516
B - C	-0.536	0.038	0.038	0.612	0.038	0.612
B - A	-0.382	0.201	0.201	0.783	0.201	0.783
C - D	-0.677	-0.113	-0.113	0.451	-0.113	0.451
C - B	-0.612	-0.038	-0.038	0.536	-0.038	0.536
C - A	-0.392	0.163	0.163	0.717	0.163	0.717
A - D	-0.848	-0.276	-0.276	0.296	-0.276	0.296

Source	DF	Type III SS	F Value	Pr > F
A - B	1	-0.783	-0.201	0.382
A - C	1	-0.717	-0.163	0.392

10. ANALYSIS OF 14-DAY SURVIVOR WEIGHT DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

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

10. ANALYSIS OF 14-DAY SURVIVOR WEIGHT DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	92.89640889	1.66	0.1863
Error	58	1083.97638246		
Corrected Total	61	1176.87279135		

R-Square	C.V.	RESP Mean
0.078935	14.86648	29.07954839

Source	DF	Type I SS	F Value	Pr > F
TRT	3	92.89640889	1.66	0.1863

Source	DF	Type III SS	F Value	Pr > F
TRT	3	92.89640889	1.66	0.1863

10. ANALYSIS OF 14-DAY SURVIVOR WEIGHT DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnnett's T tests for variable: RESP

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= 18.68925
Critical Value of Dunnnett's T= 2.414

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

TRT Comparison	Simultaneous		Difference		Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit	Between Means	Upper Confidence Limit	Lower Confidence Limit	Upper Confidence Limit
C - A	-1.890		1.746		5.382	
D - A	-2.646		1.105		4.857	
B - A	-5.348		-1.528		2.291	

10. ANALYSIS OF 14-DAY SURVIVOR WEIGHT DATA 43 ***** 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 18.68925
Critical Value of T= 2.73177

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

TRT Comparison	Simultaneous		Difference		Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit	Between Means	Upper Confidence Limit	Lower Confidence Limit	Upper Confidence Limit
C - D	-3.543		0.641		4.825	
C - A	-2.367		1.746		5.860	
C - B	-0.987		3.275		7.537	
D - C	-4.825		-0.641		3.543	
D - A	-3.139		1.105		5.350	
D - B	-1.755		2.634		7.022	
A - C	-5.860		-1.746		2.367	
A - D	-3.350		-1.105		3.139	
A - B	-2.793		1.528		5.850	
B - C	-7.537		-3.275		0.987	
B - D	-7.022		-2.634		1.755	
B - A	-5.850		-1.528		2.793	

11. ANALYSIS OF FOOD CONSUMPTION DATA 44 ***** 8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

11. ANALYSIS OF FOOD CONSUMPTION DATA 45 ***** 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	4430343.66667	1.40	0.2510
Error	68	71845032.77778		
Corrected Total	71	76275376.44444		

R-Square	C.V.	RESP Mean
0.058084	18.38041	5592.277778

Source	DF	Type I SS	F Value	Pr > F
TRT	3	4430343.66667	1.40	0.2510
Source	DF	Type III SS	F Value	Pr > F
TRT	3	4430343.66667	1.40	0.2510

11. ANALYSIS OF FOOD CONSUMPTION DATA 46 ***** 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 68 MSE= 1056545
Critical Value of Dunnnett's T= 2.403
Minimum Significant Difference= 823.17

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

TRT Comparison	Simultaneous		Difference		Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit	Between Means	Upper Confidence Limit	Lower Confidence Limit	Upper Confidence Limit
C - A	-740.0		83.2		906.3	
D - A	-862.9		-39.8		783.4	
B - A	-1372.3		-549.2		274.0	

11. ANALYSIS OF FOOD CONSUMPTION DATA 47 ***** 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

File:c:\baybq1.out Page 23
 NOTE: This test controls the type I experimentwise error rate,
 but generally has a higher type II error rate than REGWQ.

Alpha= 0.05 df= 68 MSE= 1056545
 Critical Value of T= 2.72
 Minimum Significant Difference= 931.14
 Means with the same letter are not significantly different.

Bon Grouping	Mean	N	TRT
A	5801.9	18	C
A	5718.7	18	A
A	5678.9	18	D
A	5169.6	18	B

8. ANALYSIS OF ES/EL DATA ***** 8:32 Tuesday, March 30, 1993

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

NOTE: Due to missing values, only 64 observations can be used in this analysis.

8. ANALYSIS OF ES/EL DATA ***** 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE
 Weight:

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	1283.14209035	0.68	0.5698
Error	60	37935.59417793		
Corrected Total	63	39218.73626828		

R-Square
 0.032718
 C.V.
 34.99586
 RESPONSE Mean
 71.85072982

Source	DF	Type I SS	F Value	Pr > F
TRT	3	1283.14209036	0.68	0.5698
Source	DF	Type III SS	F Value	Pr > F

File:c:\baybq1.out Page 24
 TRT

1283.14209036 0.68 0.5698

8. ANALYSIS OF ES/EL DATA ***** 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnnett's 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= 60 MSE= 632.2599
 Critical Value of Dunnnett's T= 2.410

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
B - A	-22.047	0.132	22.311
D - A	-22.415	-1.305	19.804
C - A	-22.692	-1.582	19.527

8. ANALYSIS OF ES/EL DATA ***** 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 60 MSE= 632.2599
 Critical Value of T= 2.72855

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
B - A	-24.976	0.132	25.240
B - D	-23.324	1.437	26.199
B - C	-23.047	1.714	26.476
A - B	-25.240	-0.132	24.976
A - D	-22.592	1.305	25.203
A - C	-22.315	1.582	25.480
D - B	-26.199	-1.437	23.324
D - A	-25.203	-1.305	22.592
D - C	-23.256	0.277	23.809
C - B	-26.476	-1.714	23.047
C - A	-25.480	-1.582	22.315
C - D	-23.809	-0.277	23.256

9. ANALYSIS OF VE/ES DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

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

9. ANALYSIS OF VE/ES DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE
Weight:

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	8299.28195996	0.38	0.7674
Error	59	428930.79313120		
Corrected Total	62	437230.07509116		
R-Square		C.V.	RESPONSE Mean	
0.018981		112.9781	75.46985706	

Source	DF	Type I SS	F Value	Pr > F
TRT	3	8299.28195996	0.38	0.7674
Source	DF	Type III SS	F Value	Pr > F
TRT	3	8299.28195996	0.38	0.7674

9. ANALYSIS OF VE/ES DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnnett's 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= 59 MSE= 7270.013
Critical Value of Dunnnett's T= 2.412

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
C - A	-74.137	-2.494	69.149
B - A	-77.904	-2.631	72.641
D - A	-78.408	-5.688	67.032

9. ANALYSIS OF VE/ES DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 59 MSE= 7270.013
Critical Value of T= 2.73013

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
A - C	-78.588	2.494	83.576
A - B	-82.559	2.631	87.821
A - D	-76.614	5.688	87.989
C - A	-83.576	-2.494	78.588
C - B	-83.875	0.137	84.150
C - D	-77.888	3.194	84.275
B - A	-87.821	-2.631	82.559
B - C	-84.150	-0.137	83.875
B - D	-82.134	3.056	88.246
D - A	-87.989	-5.688	76.614
D - C	-84.275	-3.194	77.888
D - B	-88.246	-3.056	82.134

10. ANALYSIS OF LE/VE DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

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

10. ANALYSIS OF LE/VE DATA 57

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE
WT

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	3952.17301678	0.55	0.6509
Error	59	141629.83787649		
Corrected Total	62	145582.01089327		
R-Square				
		C.V.	RESPONSE Mean	
	0.027147	58.78426	83.34706900	

Source	DF	Type I SS	F Value	Pr > F
TRT	3	3952.17301678	0.55	0.6509
Source	DF	Type III SS	F Value	Pr > F
TRT	3	3952.17301678	0.55	0.6509

10. ANALYSIS OF LE/VE DATA 58

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnett's 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= 59 MSE= 2400.506
Critical Value of Dunnett's T= 2.412

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
D - A	-38.050	3.737	45.524
B - A	-40.653	2.600	45.853
C - A	-40.512	0.655	41.823

10. ANALYSIS OF LE/VE DATA 59

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 59 MSE= 2400.506
Critical Value of T= 2.73013

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

TRT Comparison	Simultaneous		Simultaneous	
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
D - B	-47.815	1.137	50.089	
D - C	-43.510	3.081	49.673	
D - A	-43.555	3.737	51.029	
B - D	-50.089	-1.137	47.815	
B - C	-46.331	1.944	50.220	
B - A	-46.352	2.600	51.552	
C - D	-49.673	-3.081	43.510	
C - B	-50.220	-1.944	46.331	
C - A	-45.936	0.655	47.247	
A - D	-51.029	-3.737	43.555	
A - B	-51.552	-2.600	46.352	
A - C	-47.247	-0.655	45.936	

11 ANALYSIS OF NH/LE DATA 60

8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

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

11 ANALYSIS OF NH/LE DATA 61

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE
WT

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	34954.6424329	2.62	0.0590
Error	58	257579.3376450		
Corrected Total	61	292533.9800779		

Source	DF	Type I SS	F Value	Pr > F
TRT	3	34954.6424329	2.62	0.0590
Source	DF	Type III SS	F Value	Pr > F
TRT	3	34954.6424329	2.62	0.0590

R-Square 0.119489
C.V. 103.6038
RESPONSE Mean 64.32291717

11 ANALYSIS OF NH/LE DATA

8:32 Tuesday, March 30, 1993

62

General Linear Models Procedure

Dunnnett's T tests for variable: RESPONSE

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

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 4441.023
Critical Value of Dunnnett's T= 2.414

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - A	-46.87	12.02	70.90
C - A	-46.89	9.15	65.20
D - A	-52.40	5.43	63.26

11 ANALYSIS OF NH/LE DATA

8:32 Tuesday, March 30, 1993

63

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 4441.023
Critical Value of T= 2.73177

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - C	-62.84	2.86	68.56
B - D	-61.07	6.58	74.23
B - A	-54.61	12.02	78.64

Source	DF	Type I SS	F Value	Pr > F
TRT	3	34954.6424329	2.62	0.0590
Source	DF	Type III SS	F Value	Pr > F
TRT	3	34954.6424329	2.62	0.0590

R-Square 0.119489
C.V. 103.6038
RESPONSE Mean 64.32291717

12 ANALYSIS OF NH/EL DATA

8:32 Tuesday, March 30, 1993

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General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

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

12 ANALYSIS OF NH/EL DATA

8:32 Tuesday, March 30, 1993

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General Linear Models Procedure

Dependent Variable: RESPONSE
Weight: WT

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	23130.7696136	1.32	0.2758
Error	58	338166.5731202		
Corrected Total	61	361297.3427338		

R-Square 0.064021
C.V. 146.2286
RESPONSE Mean 52.21785170

Source	DF	Type I SS	F Value	Pr > F
TRT	3	23130.7696136	1.32	0.2758
Source	DF	Type III SS	F Value	Pr > F
TRT	3	23130.7696136	1.32	0.2758

12 ANALYSIS OF NH/EL DATA

66

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnett's 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= 5830.458
Critical Value of Dunnett's T= 2.414

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

TRT Comparison	Simultaneous			Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - A	-58.341	9.129	76.599			
C - A	-58.724	5.493	69.710			
D - A	-61.694	4.566	70.826			

12 ANALYSIS OF NH/EL DATA

67

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 5830.458
Critical Value of T= 2.73177

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

TRT Comparison	Simultaneous			Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - C	-71.645	3.636	78.917			
B - D	-72.951	4.563	82.078			
B - A	-67.207	9.129	85.466			
C - B	-78.917	-3.636	71.645			
C - D	-72.965	0.927	74.820			
C - A	-67.162	5.493	78.148			
D - B	-82.078	-4.563	72.951			
D - C	-74.820	-0.927	72.965			
D - A	-70.401	4.566	79.533			
A - B	-85.466	-9.129	67.207			
A - C	-78.148	-5.493	67.162			
A - D	-79.533	-4.566	70.401			

17. ANALYSIS OF HS/NH DATA

68

8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Class Level Information

Class Levels Values
TRT 4 A B C D

Number of observations in data set = 72

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

17. ANALYSIS OF HS/NH DATA

69

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE
Weight:

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	11049.8455232	1.17	0.3306
Error	58	183232.6862714		
Corrected Total	61	194282.5317946		

R-Square C.V. RESPONSE Mean
0.056875 80.30322 69.99298118

Source	DF	Type I SS	F Value	Pr > F
TRT	3	11049.8455232	1.17	0.3306
Source	DF	Type III SS	F Value	Pr > F
TRT	3	11049.8455232	1.17	0.3306

17. ANALYSIS OF HS/NH DATA

70

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnett's 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= 3159.184
Critical Value of Dunnett's T= 2.414

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

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

D - A 1.646 50.419
C - A -0.188 47.082
B - A -5.529 43.800

17. ANALYSIS OF HS/NH DATA 71

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate
but generally has a higher type II error rate than
Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 3159.184
Critical Value of T= 2.73177

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

TRT Comparison	Simultaneous		Simultaneous	
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
D - A	-53.538	1.646	56.829	
D - C	-52.559	1.833	56.225	
D - B	-49.548	7.510	64.569	
A - D	-56.829	-1.646	53.538	
A - C	-53.294	0.188	53.669	
A - B	-50.327	5.865	62.056	
C - D	-56.225	-1.833	52.559	
C - A	-53.669	-0.188	53.294	
C - B	-49.737	5.677	61.092	
B - D	-64.569	-7.510	49.548	
B - A	-62.056	-5.865	50.327	
B - C	-61.092	-5.677	49.737	

18. ANALYSIS OF EC/EL DATA 72

8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Class Level Information

Class Levels Values

TRT 4 A B C D

Number of observations in data set = 72

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

18. ANALYSIS OF EC/EL DATA 73

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE
Weight:

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	21265.9430788	5.55	0.0024
Error	48	61266.8314288		
Corrected Total	51	82532.7745076		

R-Square C.V. RESPONSE Mean
0.257667 365.3248 9.77941571

Source	DF	Type I SS	F Value	Pr > F
TRT	3	21265.9430788	5.55	0.0024
Source	DF	Type III SS	F Value	Pr > F
TRT	3	21265.9430788	5.55	0.0024

18. ANALYSIS OF EC/EL DATA 74

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnnett's 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= 48 MSE= 1276.392
Critical Value of Dunnnett's T= 2.439

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

TRT Comparison	Simultaneous		Simultaneous	
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
C - A	-26.223	7.908	42.039	
D - A	-28.012	6.119	40.250	
B - A	-31.428	0.462	32.353	

18. ANALYSIS OF EC/EL DATA 75

8:32 Tuesday, March 30, 1993

General Linear Model Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate
but generally has a higher type II error rate than
Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 48 MSE= 1276.392

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

TRT Comparison	Simultaneous			Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
C - D	-40.135	1.789	43.713	-40.135	1.789	43.713
C - B	-32.169	7.445	47.060	-32.169	7.445	47.060
C - A	-30.602	7.908	46.418	-30.602	7.908	46.418
D - C	-43.713	-1.789	40.135	-43.713	-1.789	40.135
D - B	-33.958	5.656	45.271	-33.958	5.656	45.271
D - A	-32.391	6.119	44.628	-32.391	6.119	44.628
B - C	-47.060	-7.445	32.169	-47.060	-7.445	32.169
B - D	-45.271	-5.656	33.958	-45.271	-5.656	33.958
B - A	-35.519	0.462	36.444	-35.519	0.462	36.444
A - C	-46.418	-7.908	30.602	-46.418	-7.908	30.602
A - D	-44.628	-6.119	32.391	-44.628	-6.119	32.391
A - B	-36.444	-0.462	35.519	-36.444	-0.462	35.519

19. ANALYSIS OF NH/ES DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

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

19. ANALYSIS OF NH/ES DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE						
Source	DF	Sum of Squares	F Value	Pr > F		
Model	3	27690.2372138	1.43	0.2419		
Error	58	373105.5695924				
Corrected Total	61	400795.8068062				
					R-Square	RESPONSE Mean
					0.069088	56.96386831
Source	DF	Type I SS	F Value	Pr > F		

TRT	3	27690.2372138	1.43	0.2419
Source	DF	Type III SS	F Value	Pr > F
TRT	3	27690.2372138	1.43	0.2419

19. ANALYSIS OF NH/ES DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnnett's 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= 6432.855
Critical Value of Dunnnett's $T = 2.414$

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

TRT Comparison	Simultaneous		Simultaneous	
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
B - A	-60.65	10.22	81.09	
C - A	-60.20	7.25	74.71	
D - A	-64.33	5.27	74.87	

19. ANALYSIS OF NH/ES DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 6432.855
Critical Value of $T = 2.73177$

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

TRT Comparison	Simultaneous		Simultaneous	
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
B - C	-76.11	2.96	82.04	
B - D	-76.48	4.94	86.36	
B - A	-69.97	10.22	90.40	
C - B	-82.04	-2.96	76.11	
C - D	-75.63	1.98	79.60	
C - A	-69.06	7.25	83.57	
D - B	-86.36	-4.94	76.48	
D - C	-79.60	-1.98	75.63	

A - B	-73.47	5.27	84.02
A - C	-90.40	-10.22	69.97
A - D	-83.57	-7.25	69.06
A - D	-84.02	-5.27	73.47

20. ANALYSIS OF HS/ES DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Class Level Information

Class Levels Values	
TRT	4 A B C D

Number of observations in data set = 72

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

20. ANALYSIS OF HS/ES DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE
Weight: WT

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	11232.7388106	0.57	0.6356
Error	58	379582.1689482		
Corrected Total	61	390814.9077588		
R-Square		C.V.	RESPONSE Mean	
0.028742		161.4615	50.10371249	

Source	DF	Type I SS	F Value	Pr > F
TRT	3	11232.7388106	0.57	0.6356
Source	DF	Type III SS	F Value	Pr > F
TRT	3	11232.7388106	0.57	0.6356

20. ANALYSIS OF HS/ES DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnnett's 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= 6544.52
Critical Value of Dunnnett's T= 2.414

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
C - A	-61.997	6.038	74.074
D - A	-64.961	5.239	75.440
B - A	-66.967	4.516	75.999

20. ANALYSIS OF HS/ES DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 6544.52
Critical Value of T= 2.73177

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
C - D	-77.488	0.799	79.085
C - B	-78.236	1.522	81.280
C - A	-70.938	6.038	83.014
D - C	-79.085	-0.799	77.488
D - B	-81.401	0.723	82.848
D - A	-74.186	5.239	84.665
B - C	-81.280	-1.522	78.236
B - D	-82.848	-0.723	81.401
B - A	-76.360	4.516	85.392
A - C	-83.014	-6.038	70.938
A - D	-84.665	-5.239	74.186
A - B	-85.392	-4.516	76.360

21. COVARIATE ANALYSIS OF MALE BODY WEIGHT DATA

8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Class Level Information

Class Levels Values	
TRT	4 A B C D

Number of observations in data set = 72

NOTE: Due to missing values, only 64 observations can be used in this analysis.

21. COVARIATE ANALYSIS OF MALE BODY WEIGHT DATA 85 ***** 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: POSTM

Source	DF	Sum of Squares	F Value	Pr > F
Model	4	18951.3735127	31.35	0.0001
Error	59	8916.3764873		
Corrected Total	63	27867.7500000		

R-Square	C.V.	POSTM Mean
0.680047	4.704441	261.31250000

Source	DF	Type I SS	F Value	Pr > F
TRT	3	1015.8713235	2.24	0.0929
PREM	1	17935.5021891	118.68	0.0001

Source	DF	Type III SS	F Value	Pr > F
TRT	3	226.4369999	0.50	0.6841
PREM	1	17935.5021891	118.68	0.0001

Parameter	Estimate	Y for H0: Parameter=0	Pr > T	Std Error of Estimate
INTERCEPT	31.90009643	1.50	0.1401	21.33105346
TRT A	-5.00624621	-1.17	0.2476	4.28717131
TRT B	-3.35439315	-0.75	0.4549	4.45902596
TRT C	-1.72884257	-0.41	0.6849	4.23940491
PREM	0.00000000	10.89	0.0001	0.09111090

NOTE: The X'X matrix has been found to be singular and a generalized inverse was used to solve the normal equations. Estimates followed by the letter 'B' are biased, and are not unique estimators of the parameters.

21. COVARIATE ANALYSIS OF MALE BODY WEIGHT DATA 86 ***** 8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Least Squares Means
Coefficients for TRT Least Square Means

TRT	A	B	C
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Effect Coefficients

INTERCEPT	1	1	1
TRT A	1	0	0
TRT B	0	1	0
TRT C	0	0	1
TRT D	0	0	0

PREM	233.59375	233.59375	233.59375
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TRT	D
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Effect Coefficients

INTERCEPT	1
TRT A	0
TRT B	0
TRT C	0
TRT D	1

PREM	233.59375
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21. COVARIATE ANALYSIS OF MALE BODY WEIGHT DATA 87 ***** 8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Least Squares Means

TRT	POSTM LSMEAN	Std Err LSMEAN	Pr > T HO:LSMEAN=0	LSMEAN Number
A	258.750813	3.095873	0.0001	1
B	260.402666	3.297799	0.0001	2
C	262.028216	2.994511	0.0001	3
D	263.757059	2.985920	0.0001	4

Pr > T HO: LSMEAN(i)=LSMEAN(j)				
i/j	1	2	3	4
1		0.7177	0.4522	0.2476
2	0.7177		0.7154	0.4549
3	0.4522	0.7154		0.6849
4	0.2476	0.4549	0.6849	

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

21. COVARIATE ANALYSIS OF MALE BODY WEIGHT DATA 88 ***** 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnett's T tests for variable: POSTM

NOTE: This tests controls the type I experimentwise error for

Alpha= 0.05 Confidence= 0.95 df= 59 MSE= 151.125
 Critical Value of Dunnett's T= 2.411

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

TRT Comparison	Simultaneous		Difference Between Means	Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit		Lower Confidence Limit	Upper Confidence Limit
C - A	0.046		10.371	20.697	***
B - A	-2.036		8.813	19.661	
D - A	-3.013		7.312	17.638	

21. COVARIATE ANALYSIS OF MALE BODY WEIGHT DATA 89

 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: POSTM

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 59 MSE= 151.125
 Critical Value of T= 2.73013

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

TRT Comparison	Simultaneous		Difference Between Means	Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit		Lower Confidence Limit	Upper Confidence Limit
C - B	-10.554		1.559	13.672	
C - D	-8.453		3.059	14.571	
C - A	-1.319		10.371	22.062	
B - C	-13.672		-1.559	10.554	
B - D	-10.613		1.500	13.613	
B - A	-3.470		8.813	21.095	
D - C	-14.571		-3.059	8.453	
D - B	-13.613		-1.500	10.613	
D - A	-4.378		7.312	19.003	
A - C	-22.062		-10.371	1.319	
A - B	-21.095		-8.813	3.470	
A - D	-19.003		-7.312	4.378	

22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT DATA 90

 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 72

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

22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT DATA 91

 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dependent Variable: POSTF

Source	DF	Sum of Squares	F Value	Pr > F
Model	4	26781.0404037	19.05	0.0001
Error	58	20387.5627709		
Corrected Total	62	47168.6031746		

R-Square	C.V.	POSTF Mean
0.567773	6.412733	292.36507937

Source	DF	Type I SS	F Value	Pr > F
TRT	3	2381.9379085	2.26	0.0911
PREF	1	24399.1024952	69.41	0.0001

Source	DF	Type III SS	F Value	Pr > F
TRT	3	657.0374343	0.62	0.6030
PREF	1	24399.1024952	69.41	0.0001

Parameter	Estimate	T for H0: Parameter=0	Pr > T	Std Error of Estimate
INTERCEPT	-16.78754778	B	-0.44	0.6594
TRT A	-5.08190511	B	-0.77	0.4473
TRT B	-9.18247185	B	-1.35	0.1823
TRT C	-3.60558824	B	-0.56	0.5785
TRT D	0.00000000	B		
PREF	1.36241072	B	8.33	0.0001

NOTE: The X'X matrix has been found to be singular and a generalized inverse was used to solve the normal equations. Estimates followed by the letter 'B' are biased, and are not unique estimators of the parameters.

22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT DATA 92

 8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Least Squares Means

Coefficients for TRT Least Square Means

TRT	A	B	C
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Effect	INTERCEPT	1	1	1
TRT	A	1	0	0
	B	0	1	0
	C	0	0	1
	D	0	0	0
PREF	230.01587302	230.01587302	230.01587302	230.01587302

Effect	INTERCEPT	1
TRT	A	0
	B	0
	C	0
	D	1
PREF	230.01587302	

22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT DATA 93

8:32 Tuesday, March 30, 1993

General Linear Models Procedure
Least Squares Means

TRT	POSTF LSMEAN	Std Err LSMEAN	Pr > T	LSMEAN Number
A	291.506637	4.840904	0.0001	1
B	287.406071	5.058295	0.0001	2
C	292.982954	4.579829	0.0001	3
D	296.588543	4.547207	0.0001	4

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

i/j	1	2	3	4
1		0.8254	0.4473	0.4473
2	0.5605		0.4208	0.1823
3	0.8254	0.4208		0.5785
4	0.4473	0.1823	0.5785	

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

22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT DATA 94

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Dunnnett's T tests for variable: POSTF

NOTE: This tests controls the type I experimentwise error for

Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 351.5097
Critical Value of Dunnnett's T= 2.409

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
C - A	-10.138	5.863	21.863
D - A	-11.020	4.980	20.981
B - A	-26.808	-10.024	6.761

22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT DATA 95

8:32 Tuesday, March 30, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: POSTF

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

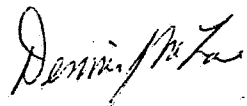
Alpha= 0.05 Confidence= 0.95 df= 58 MSE= 351.5097
Critical Value of T= 2.73177

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
C - D	-16.685	0.882	18.450
C - A	-12.281	5.863	24.006
C - B	-2.598	15.887	34.371
D - C	-18.450	-0.882	16.685
D - A	-13.163	4.980	23.124
D - B	-3.480	15.004	33.489
A - C	-24.006	-5.863	12.281
A - D	-23.124	-4.980	13.163
A - B	-9.009	10.024	29.057
B - C	-34.371	-15.887	2.598
B - D	-33.489	-15.004	3.480
B - A	-29.057	-10.024	9.009

DATA EVALUATION RECORD

1. **CHEMICAL:** Triadimefon (Bayleton).
Shaughnessey No. 109901.
2. **TEST MATERIAL:** Triadimefon (Technical Bayleton); CAS No. 43121-43-3; Batch No. 48580; 95% purity; white to tan crystals.
3. **STUDY TYPE:** 71-4. Avian Reproduction Study.
Species Tested: Mallard duck (*Anas platyrhynchos*).
4. **CITATION:** Stafford, T.R. 1992. Technical Bayleton: A One Generation Reproduction Study with Mallard Ducks. Study performed by Miles Inc., Stilwell Kansas. Study No. BL740801. Submitted by Miles Inc., Kansas City, MO. EPA MRID No. 423423-02.
5. **REVIEWED BY:**

Dennis J. McLane, Wildlife Biologist Signature: 
Section 1, Ecological Effect Branch
Environmental Fate and Effects Division Date: 4-13-93
6. **APPROVED BY:**

Les Touart, Section Chief Signature: 
Section 1, Ecological Effect Branch
Environmental Fate and Effects Division Date: 4-15-93
7. **CONCLUSIONS:** This study is scientifically sound and fulfills the guideline requirements for an avian reproduction study. Mean measured dietary concentrations of triadimefon at 46, 185, and 780 ppm a.i. had no effects upon mortality, behavior, or reproductive performance of mallard ducks during the study. The NOEC was 780 ppm a.i. mean measured concentration.
8. **RECOMMENDATIONS:** N/A
9. **BACKGROUND:** On 9-9-82 Rieder reviewed a quail reproduction study which showed effects in eggs cracked, fertile eggs, viable embryos, hatchling, and 14 day old survivors at 100 ppm making the 20 ppm the NOEL. This is a "Core" study. The mallard study reviewed on 9-13-82 showed no effects at the highest level tested, but had poor reproductive success in

DATA EVALUATION RECORD

1. **CHEMICAL:** Triadimefon (Bayleton).
Shaughnessey No. 109901.
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5. **REVIEWED BY:**

Carolyn F. Poppell, Sc.M.
Senior Scientist
KBN Engineering and
Applied Sciences, Inc.

Signature: P. Kosalwat
for CFP
Date: 10/13/92
6. **APPROVED BY:**

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

Signature: P. Kosalwat
Date: 10/13/92

Henry T. Craven, M.S.
Supervisor, EEB/EFED
USEPA

Signature:
Date:
7. **CONCLUSIONS:** This study is scientifically sound and fulfills the guideline requirements for an avian reproduction study. Mean measured dietary concentrations of Bayleton at 46, 185, and 780 ppm a.i. had no effects upon mortality, behavior, or reproductive performance of mallard ducks during the study. The NOEC was 780 ppm a.i. mean measured concentration.
8. **RECOMMENDATIONS:** N/A.
9. **BACKGROUND:**

the controls. Due to the poor control performance the study was "supplemental".

10. DISCUSSION OF INDIVIDUAL TESTS: N/A.

11. MATERIALS AND METHODS:

A. Test Animals: Pen-reared, unmated mallard ducks (*Anas platyrhynchos*) were purchased from Whistling Wings Inc., Hanover, Illinois. The birds were approximately 20 weeks of age at study initiation, and were acclimated to the laboratory environment for a minimum of 14 days. All birds were from the same hatch, and phenotypically indistinguishable from wild birds. At test initiation, all birds were examined for physical injuries and general health. Birds that were injured or did not appear healthy were excluded from the study.

B. Dose/Diet Preparation/Food Consumption: Diets were prepared by dissolving the test compound in corn oil and acetone, and mixing with feed. Diets were prepared weekly and stored in a freezer until used. The control diet contained an amount of the solvent (acetone) and carrier (corn oil) equal to that in the treated diets. The acetone subsequently evaporated from the test diet. Based on known toxicity data, nominal test concentrations of technical triadimefon used in the study were 50, 200, and 800 parts per million (ppm) of active ingredient (a.i.). Each of the four groups of birds were fed the appropriate diet from test initiation until terminal sacrifice.

Basal diet for adult birds was formulated by Agway, Inc. Offspring were fed Teklad Duck Starter. The composition of these diets were presented in the report. The test substance was not mixed into the diet of the offspring. Food and water were supplied *ad libitum* during acclimation and during the test.

Samples of control and treated diets were collected immediately after mixing and frozen. Samples taken on weeks 1, 5, 10, 15, and 20 were analyzed for triadimefon diet concentration. Homogeneity testing was performed on the first feed mixture from the 50 and 800 ppm diet levels. The stability of test material in the diet was determined by analysis of samples from feeders on odd-numbered days during the first week of the study. Samples were analyzed using gas chromatography by the Miles Inc. Environmental Fate Analytical Laboratory.

- C. **Design:** The birds were randomly distributed into four groups as follows:

Triadimefon Nominal Concentration	Number of Pens	<u>Birds Per Pen</u>	
		Males	Females
Control (0 ppm)	15	1	1
50 ppm	15	1	1
200 ppm	15	1	1
800 ppm	15	1	1

Treatment levels were based upon known toxicity data. Adult birds were identified by individual leg bands. The primary phases of the study and their approximate durations were as follows:

1. Acclimation - 2 weeks
2. Pre-photostimulation - 8 weeks
3. Pre-egg laying (with photostimulation) - 2 weeks
4. Egg laying - 10 weeks
5. Post-adult sacrifice (final incubation, hatching, 14-day offspring rearing period) - 6 weeks.

- D. **Pen Facilities:** Adult birds were housed in pens constructed of stainless steel wire grid and sheeting. The pens measured approximately 80 x 60 x 50 cm with sloping floors. The average temperature in the adult study room was 72°F (22°C) with an average relative humidity of 50%.

The photoperiod during the first 8 weeks of the study was 7 hours of light per day. The photoperiod was then increased to 17 hours of light per day for the duration of the study. Throughout the study, the birds received a minimum of 6 foot-candles of illumination. A 40-minute "dawn/dusk" cycle was used in light/dark transition.

- E. **Adult Observations/Gross Pathology:** Adult birds were observed at least once daily throughout the study for signs of toxicity, injuries, or illness. Mortalities occurring prior to terminal adult sacrifice were recorded and necropsied. Adult body weights were measured at study initiation, weekly through week 8, and at terminal sacrifice (week 20). Feed consumption was measured by cage weekly throughout the adult phase of the study.
- F. **Eggs/Eggshell Thickness:** Eggs were collected twice daily, labeled according to pen of origin, and washed with chlorine-based detergent and germicidal soap to

prevent pathogen contamination. The eggs were then stored at 60°F (15.6°C) with a relative humidity of 50%. Eggs were removed from the egg cooler weekly and candled for shell cracks. Cracked eggs were recorded and discarded. Eggs not cracked or used for eggshell thickness measurements were placed in an incubator maintained at 99.5°F (37.5°C) with a relative humidity of approximately 55%. All eggs were rotated automatically every hour while in the incubator. Eggs were candled again on day 14 of incubation to determine fertility and embryo viability and on day 21 to determine embryo survival.

Eggs were collected every other week for eggshell strength and thickness measurements. Eggshell strength measurements were taken at three points around the equator. Eggs were then opened, the contents removed, the shell washed, and allowed to air dry for a minimum of 48 hours at room temperature. The average thickness of the dried shell plus membrane was determined by measuring (to the nearest 0.01 mm) three points around the equator of the egg using a micrometer.

- G. **Hatchlings:** Hatchlings were removed from the hatcher on days 27 and 28 of incubation, banded, weighed, and housed according to week of hatch and parental treatment group. Hatchlings were identified by numbered wing bands and placed in batteries of brooding pens from the time of hatch through day 14 post-hatch. Each pen measured 90 x 72 x 24 cm, and was constructed of galvanized wire mesh and sheeting. Temperatures in the brooding compartment were maintained at 100°F (37.8°C). The photoperiod was maintained at 12 hours of light per day. Hatchlings were fed untreated diet. Hatchling body weights were measured and recorded at hatch and on day 14. Feed consumption was not monitored.

Hatchlings were observed twice daily throughout the 14-day period for signs of toxicity, injuries or illness. Mortalities occurring prior to the end of the 14-day period were recorded and discarded. Hatchlings surviving to day 14 were sacrificed, weighed, and discarded.

- H. **Statistics:** Prior to statistical analysis, all percentage data were transformed using a square-root arcsine transformation. Bartlett's test or Levene's test of equal variance was performed on each study parameter to determine if treatment groups had unequal variances. If variances were not determined to be

unequal, subsequent analyses were conducted using parametric techniques. If unequal variances were detected, non-parametric procedures were used. Parametric procedures included a standard one-way analysis of variance. If ANOVA indicated treatment groups were significantly different from controls, the mean of the treatment groups were compared to control means using a one-tailed Dunnett's test. If non-parametric procedures were required, the Kruskal-Wallis or Dunn's Summed Rank test were used.

Each of the following parameters was analyzed statistically:

Adult Body Weight	Hatchling Body Weight
Adult Feed Consumption	14-Day Old Survivors
Eggs Laid per Hen	per Hen
Eggs Cracked of Eggs Laid	14-Day Old Survivors
Viable Embryos of Eggs Set	of Hatchlings
Live 3-Week Embryos of	Survivor Body Weight
Viable Embryos	Eggshell Strength
Hatchlings per Hen	Eggshell Thickness
Hatchlings of 3-Week	Hatchlings of Viable
Embryos	Embryos

12. REPORTED RESULTS

- A. Diet Analysis: Homogeneity testing indicated that the test material was thoroughly mixed into the diet (coefficients of variance of $\leq 11\%$). The average measured concentrations were 98 and 95% of the 50- and 800-ppm nominal values, respectively. The test material was determined to be stable in the diet when stored at room temperature for 7 days. Mean measured concentrations were 75%, 96%, and 86% of nominal concentrations for the 50-, 200-, and 800-ppm diets, respectively, after storage for 7 days at room temperature. Mean measured diet concentrations during the 20-week exposure period are shown in Table 1 (attached).
- B. Mortality and Behavioral Reactions: Only one mortality occurred during the study. One male in the 185 ppm a.i. treatment group died from injuries incurred while trying to free his head from the cage wire. No compound- or treatment-related adult mortality occurred in any test group during the course of the study. Occurrences of feather loss and lacerations were observed, but were attributed to normal laboratory pen housing. No overt

signs of intoxication were observed during the study in any test group.

Post-mortem observations revealed anomalies, although they occurred in a small number of birds and no dose-response was indicated (Table 4, attached). The authors concluded that observations were not treatment-related.

- C. Adult Body Weight and Food Consumption: There were no apparent treatment-related effects upon adult body weight at any of the concentrations tested (Table 2, attached). There was a statistically significant decrease in feed consumption during weeks 5 and 14 in the 185 ppm a.i. treatment group (Table 3, attached). The authors concluded that these findings were incidental, and not treatment-related.
- D. Reproduction: When compared to the control group, there were no statistically significant differences in reproductive parameters at any concentration tested (Tables 5, 6, and 7, attached).
- E. Egg Shell Thickness: There were no significant differences in the overall mean eggshell thickness and strengths of control eggs compared to treatment eggs (Table 9, attached).
- F. Offspring Body Weight: The overall mean hatch weight and the overall 14-day survivor weights were not significantly lower for birds in treatment groups when compared to controls (Table 7, attached). Mean hatch weight for hatchlings in the 185 ppm group was significantly higher than controls. The authors concluded that this difference was not treatment-related due to the lack of a distinct dose-response relationship.

13. STUDY AUTHOR'S CONCLUSIONS/QUALITY ASSURANCE MEASURES:

There were no apparent effects on adult ducks fed triadimefon-treated diets. Adult body weight data showed no significant differences between control birds and birds treated with technical triadimefon. Feed consumption data did not demonstrate a compound- or treatment-related effect. No clinical signs of toxicity were observed and no compound- or treatment-related mortality occurred in any dietary level. No apparent effects occurred in any of the monitored reproductive parameters. The LOEC for mallard ducks is greater than 780 ppm a.i. of triadimefon.

The report stated that the study was conducted in conformance with Good Laboratory Practice regulations (40 CFR Part 160). Quality assurance audits were conducted during the study and the final report was signed by a Quality Assurance Officer for Miles Inc.

14. REVIEWER'S DISCUSSION AND INTERPRETATION OF STUDY RESULTS:

- A. Test Procedure:** The test procedures were in accordance with Subdivision E - Hazard Evaluation: Wildlife and Aquatic Organisms, ASTM, and SEP guidelines except for the following deviations:

Behavioral observations of offspring were not reported.

Observations on food palatability were not reported.

- B. Statistical Analysis:** Statistical analyses of reproductive parameters were performed by the reviewer using analysis of variance (ANOVA) arcsine square-root transformation of the ratio data. The comparison between control data and data from each treatment level was made using multiple comparison test, Bonferroni. Printouts are attached.

Two parameters show statistical significance. eggs cracked, and female body weight. However, there is not a dose-response relationship. The Dunnett's Test indicates that the control and the 185 ppm level are different but the highest (780 ppm) and lowest (46 ppm) levels are not. For the female weight the 46 ppm level is different from the 780 ppm level and no differences were found between the control and the treatment levels. Bonferroni test was used for female weight because of the unequal n. All levels were 15 except 185 ppm level it was 14.

In addition to these items "Table 6. Reproductive Success Data for Mallard Fed Triadimefon" has a calculations for Viable (Fertile) of Eggs Set (%) several wrong values. Attached is EEB's version of the same with the reported values corrected values. All printouts are attached.

- C. Discussion/Results:** Chemical analyses of diet samples show that measured concentrations of triadimefon were similar to nominal concentrations. All measured values were within 9% of nominal values. Homogeneity and stability data indicate that the method of diet preparation achieved a homogeneous mix and triadimefon was stable in the diet.

The statistical significant revealed did not indicate that the reproductive parameters for treatment were different for those of the birds on the controls

This study is scientifically sound and fulfills the guideline requirements for an avian reproduction study.

D. Adequacy of the Study:

(1) Classification: Core.

(2) Rationale: N/A.

(3) Repairability: N/A.

15. COMPLETION OF ONE-LINER: Yes; August 10, 1992.

RIN 5710-93

TRIADMEFON EEB REVIEW

Page is not included in this copy.

Pages 56 through 64 are not included.

The material not included contains the following type of information:

- ☐ Identity of product inert ingredients.
- ☐ Identity of product impurities.
- ☐ Description of the product manufacturing process.
- ☐ Description of quality control procedures.
- ☐ Identity of the source of product ingredients.
- ☐ Sales or other commercial/financial information.
- ☐ A draft product label.
- ☐ The product confidential statement of formula.
- ☐ Information about a pending registration action.
- ☒ FIFRA registration data.
- ☐ The document is a duplicate of page(s) .
- ☐ The document is not responsive to the request.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

SAS

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O	T	E	E	E	L	S	V	L	E	N	H	S	T	H	I	C	K	S	U	F	O	D	P	R	E	F	P	O	S
B	R	L	C	S	E	E	E	E	L	E	N	H	S	C	I	C	K	S	U	F	O	D	M	R	E	F	M	S	T
S	T	L	C	S	E	E	E	E	L	E	N	H	S	C	I	C	K	S	U	F	O	D	M	R	E	F	M	S	T
1	A	70	1	64	56	56	54	52	0.395	39	194	27631.3	3	1306	1405	1025	1371												
2	A	50	2	42	32	31	29	29	0.403	44	215	37044.9	1204	1279	1077	1283													
3	A	66	14	46	44	44	41	41	0.414	49	287	36044.0	1303	1364	1127	1356													
4	A	58	13	39	33	33	33	33	0.390	37	198	27203.2	1300	1156	1004	1153													
5	A	54	3	45	45	45	45	44	0.427	43	218	35722.1	1280	1289	994	1245													
6	A	74	0	68	59	59	58	58	0.395	41	238	39447.9	1232	1295	1039	1578													
7	A	77	6	65	63	63	58	59	0.412	42	251	35504.0	1094	1192	1070	1362													
8	A	62	0	57	55	55	53	53	0.414	41	247	33766.2	1215	1313	1055	1321													
9	A	84	6	72	69	69	68	68	0.364	37	252	40706.1	1179	1376	1075	1418													
10	A	75	2	68	66	66	63	62	0.401	36	237	35767.2	1232	1392	996	1105													
11	A	0	0	0	0	0	0	0	0	0	0	30525.1	1195	1478	1148	1538													
12	A	48	1	42	42	42	42	42	0.398	40	230	35535.8	1319	1412	1111	1274													
13	A	64	5	54	52	52	49	49	0.393	41	229	33609.7	1147	1326	965	1166													
14	A	73	3	65	63	63	62	59	0.403	38	228	40684.0	1242	1326	1087	1177													
15	A	0	0	0	0	0	0	0	0	0	0	26678.9	1087	1242	1098	1384													
16	B	71	4	61	61	60	57	56	0.387	36	233	31720.7	1387	1419	1156	1299													
17	B	51	0	46	45	45	42	41	0.427	39	230	35932.2	1274	1292	1108	1219													
18	B	14	2	8	0	0	0	0	0.393	40	256	30450.4	1100	1297	948	1244													
19	B	70	0	64	42	42	42	42	0.404	40	256	32836.4	1267	1613	988	1261													
20	B	78	0	72	72	72	71	71	0.409	40	214	27692.1	1162	1347	1024	1185													
21	B	39	0	35	35	35	34	34	0.405	41	221	42426.3	1134	1436	1150	1250													
22	B	71	1	64	56	54	52	52	0.403	40	247	32878.0	1141	1220	1037	1137													
23	B	56	2	49	49	49	48	48	0.404	42	209	43033.1	1267	1434	1070	1359													
24	B	57	4	48	47	46	43	42	0.413	41	217	34258.9	1176	1375	892	1150													
25	B	54	2	47	46	44	44	44	0.401	40	224	35482.5	1138	1375	1054	1175													
26	B	76	6	64	62	61	52	47	0.373	39	235	35461.7	1172	1226	1142	1290													
27	B	62	1	55	53	52	50	50	0.405	41	206	36006.8	1198	1305	1087	1301													
28	B	64	0	59	58	57	55	55	0.401	40	230	47361.0	1361	1449	1053	1454													
29	B	72	2	66	65	65	62	57	0.381	43	240	35687.9	1289	1242	990	1283													
30	B	72	1	65	65	65	62	57	0.381	43	231	39764.8	1187	1778	1033	1131													
31	C	43	1	38	33	33	31	31	0.377	44	191	33160.2	1135	1174	913	1268													
32	C	63	2	55	55	55	54	53	0.393	43	229	39259.0	1234	1279	986	1368													
33	C	76	2	68	67	67	65	64	0.391	41	215	33724.3	1125	1149	1105	1179													
34	C	56	3	47	43	43	40	38	0.423	49	223	34097.9	1187	1326	1117	1283													
35	C	76	1	69	25	24	21	19	0.377	42	197	31312.5	1279	1238	1147	1198													
36	C	47	8	35	35	35	34	34	0.370	42	225	27159.0	1059	1100	1100	1283													
37	C	63	1	57	54	53	49	49	0.369	43	263	37097.9	1326	1715	1146	1283													
38	C	73	8	59	58	58	55	54	0.389	39	216	35001.9	1317	1265	1022	1194													
39	C	61	1	55	53	52	52	51	0.381	42	239	36021.3	1206	1322	965	1406													
40	C	68	14	49	47	46	46	46	0.347	40	241	35151.5	1272	1419	981	1161													
41	C	83	3	74	73	73	72	72	0.389	38	238	34906.6	1260	1346	933	1110													
42	C	76	4	66	59	59	56	56	0.381	42	213	41026.3	1181	1202	1007	1356													
43	C	63	19	39	38	38	34	32	0.399	43	236	35552.6	1285	1258	1176	1348													
44	C	77	0	71	67	66	63	62	0.385	42	228	48800.9	1217	1457	1055	1360													
45	C	45	1	39	39	39	36	35	0.389	41	251	32723.0	1366	1377	1063	1181													
46	D	76	4	66	65	65	65	65	0.427	38	222	32233.2	1250	1283	1016	1301													
47	D	64	3	55	55	55	54	53	0.384	43	216	38494.3	1138	1248	1118	1458													
48	D	69	0	64	63	63	63	63	0.361	40	264	29534.5	1248	1320	973	1250													
49	D	60	2	52	51	51	50	49	0.396	44	235	32558.0	1271	1483	1167	1466													
50	D	73	2	65	61	61	61	61	0.404	39	191	28553.3	1209	1266	1172	1193													
51	D	69	0	64	61	61	60	60	0.419	44	238	29989.3	1432	1583	1061	1448													
52	D	80	12	62	55	54	54	54	0.346	39	243	34030.6	1178	1280	1095	1511													
53	D	71	3	62	60	60	59	58	0.373	49	184	33329.5	1124	1359	960	1234													
54	D	68	4	58	57	57	54	54	0.370	41	229	39927.2	1147	1409	1093	1390													
55	D	84	2	76	68	68	62	61	0.387	43	259	32416.3	1354	1351	1143	1597													
56	D	77	3	65	65	65	65	65	0.363	38	207	36052.8	1277	1248	1056	1399													
57	D	74	7	65	65	65	62	62	0.363	39	234	29735.0	1144	1250	1051	1372													
58	D	59	6	48	46	46	46	46	0.398	41	240	36612.1	1168	1169	1086	1374													

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N Obs	Variable	N	Minimum	Maximum	Mean
15	EL	15	0	84.0000000	57.0000000
	EC	15	0	14.0000000	5.7333333

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EC	15	0	12.000000	3.200000
ES	15	39.000000	76.000000	59.400000
VE	15	28.000000	68.000000	55.400000
LE	15	28.000000	68.000000	55.266667
NH	15	26.000000	63.000000	52.666667
HS	15	26.000000	63.000000	52.266667
THICK	15	0.346000	0.427000	0.388200
HATWT	15	38.000000	44.000000	40.933333
SURVWT	15	184.000000	264.000000	228.800000
FOOD	15	28553.30	43005.70	33916.53
PREM	15	1124.00	1442.00	1242.33
POSTM	15	1169.00	1583.00	1337.47
PREF	15	960.000000	1172.00	1073.87
POSTF	15	1193.00	1597.00	1361.80

N Obs	Variable	Std Dev
15	EL	10.3403970
	EC	3.0047581
	ES	9.3028413
	VE	12.0522671
	LE	12.2034343
	NH	11.6598620
	HS	11.7014448
	THICK	0.0241016
	HATWT	2.2509257
	SURVWT	22.0849011
	FOOD	4160.87
	PREM	101.7557767
	POSTM	108.7538943
	PREF	66.1598353
	POSTF	122.6022605

1. ANALYSIS OF EL DATA

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General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

1. ANALYSIS OF EL DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	1080.1833333	1.21	0.3136
Error	56	16626.0000000		
Corrected Total	59	17706.1833333		
R-Square			C.V.	RESP Mean

File:b:baymd.out Page 3

N Obs	Variable	Std Dev
15	EL	16.7965416
	EC	1.7994708
	ES	16.0617855
	VE	16.9514714
	LE	16.8220377
	NH	15.9427547
	HS	15.4016078
	THICK	0.0130322
	HATWT	1.7805420
	SURVWT	14.1609663
	FOOD	5179.08
	PREM	86.0463884
	POSTM	149.7632417
	PREF	75.0154270
	POSTF	88.2676126

SAS 8:15 Wednesday, March 31, 1993

TRT=C

N Obs	Variable	N	Minimum	Maximum	Mean
15	EL	15	43.000000	83.000000	64.666667
	EC	15	0	19.000000	4.533333
	ES	15	35.000000	74.000000	54.733333
	VE	15	25.000000	73.000000	49.733333
	LE	15	24.000000	73.000000	49.400000
	NH	15	21.000000	72.000000	47.200000
	HS	15	19.000000	72.000000	46.400000
	THICK	15	0.347000	0.423000	0.384000
	HATWT	15	38.000000	49.000000	42.066667
	SURVWT	15	191.000000	263.000000	227.000000
	FOOD	15	27159.00	48800.90	35664.99
	PREM	15	1059.00	1366.00	1229.93
	POSTM	14	1149.00	1715.00	1323.36
	PREF	15	913.000000	1176.00	1047.73
	POSTF	14	1110.00	1406.00	1263.93

N Obs	Variable	Std Dev
15	EL	12.5906239
	EC	5.5015149
	ES	13.1554805
	VE	14.0482163
	LE	14.0702320
	NH	14.3138295
	HS	14.5886453
	THICK	0.0166003
	HATWT	2.4918916
	SURVWT	19.0787840
	FOOD	4856.16
	PREM	83.5262719
	POSTM	143.6226933
	PREF	82.7236938
	POSTF	93.7053190

TRT=D

N Obs	Variable	N	Minimum	Maximum	Mean
15	EL	15	44.000000	84.000000	68.266667

27.51756 62.6166667

Source	DF	Type I SS	F Value	Pr > F
TRT	3	1080.18333333	1.21	0.3136
Source	DF	Type III SS	F Value	Pr > F
TRT	3	1080.18333333	1.21	0.3136

1. ANALYSIS OF EL DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 296.8929
Critical Value of Dunnett's T= 2.414
Minimum Significant Difference= 15.191

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
D - A	-3.924	11.267	26.457
C - A	-7.524	7.667	22.857
B - A	-11.657	3.533	18.724

1. ANALYSIS OF EL DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate, but generally has a higher type II error rate than REGWD.

Alpha= 0.05 df= 56 MSE= 296.8929
Critical Value of T= 2.74
Minimum Significant Difference= 17.209

Means with the same letter are not significantly different.

Bon Grouping	Mean	N	TRT
A	68.267	15	D
A	64.667	15	C
A	60.533	15	B
A	57.000	15	A

2. ANALYSIS OF EC DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

2. ANALYSIS OF EC DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	65.78333333	1.40	0.2520
Error	56	876.40000000		
Corrected Total	59	942.18333333		
		R-Square	C.V.	RESP Mean
		0.069820	120.4876	3.28333333

Source	DF	Type I SS	F Value	Pr > F
TRT	3	65.78333333	1.40	0.2520
Source	DF	Type III SS	F Value	Pr > F
TRT	3	65.78333333	1.40	0.2520

2. ANALYSIS OF EC DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 15.65
Critical Value of Dunnett's T= 2.414
Minimum Significant Difference= 3.4877

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

Simultaneous	Simultaneous
--------------	--------------

TRT Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
C - A	-2.688	0.800	4.288
D - A	-4.021	-0.533	2.954
B - A	-5.554	-2.067	1.421

2. ANALYSIS OF EC DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate, but generally has a higher type II error rate than REGW.

Alpha= 0.05 df= 56 MSE= 15.65
Critical Value of T= 2.74
Minimum Significant Difference= 3.9511

Means with the same letter are not significantly different.

Bon Grouping	Mean	N	TRT
A	4.533	15	C
A	3.733	15	A
A	3.200	15	D
A	1.667	15	B

3. ANALYSIS OF ES DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

3. ANALYSIS OF ES DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	907.9333333	1.18	0.3250
Error	56	14344.0000000		

Corrected Total 59 15251.93333333

R-Square C.V. RESP Mean
0.059529 29.61961 54.03333333

Source	DF	Type I SS	F Value	Pr > F
TRT	3	907.93333333	1.18	0.3250
Source	DF	Type III SS	F Value	Pr > F
TRT	3	907.93333333	1.18	0.3250

3. ANALYSIS OF ES DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 256.1429
Critical Value of Dunnett's T= 2.414
Minimum Significant Difference= 14.11

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
D - A	-3.176	10.933	25.043
C - A	-7.843	6.267	20.376
B - A	-9.043	5.067	19.176

3. ANALYSIS OF ES DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate, but generally has a higher type II error rate than REGW.

Alpha= 0.05 df= 56 MSE= 256.1429
Critical Value of T= 2.74
Minimum Significant Difference= 15.985

Means with the same letter are not significantly different.

Bon Grouping	Mean	N	TRT
A	59.400	15	D
A	54.733	15	C

A 53.533 15 B
A 48.467 15 A
A

4. ANALYSIS OF VE DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

4. ANALYSIS OF VE DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	773.7833333	0.94	0.4263
Error	56	15322.4000000		
Corrected Total	59	16096.1833333		
R-Square		C.V.		RESP Mean
0.048072		33.00557		50.11666667

Source	DF	Type I SS	F Value	Pr > F
TRT	3	773.7833333	0.94	0.4263
Source	DF	Type III SS	F Value	Pr > F
TRT	3	773.7833333	0.94	0.4263

4. ANALYSIS OF VE DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 273.6143
Critical Value of Dunnett's T= 2.414

Minimum Significant Difference= 14.583

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

TRT	Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
D	- A	-4.450	10.133	24.716
B	- A	-9.783	4.800	19.383
C	- A	-10.116	4.467	19.050

4. ANALYSIS OF VE DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate, but generally has a higher type II error rate than REGM.

Alpha= 0.05 df= 56 MSE= 273.6143
Critical Value of T= 2.74
Minimum Significant Difference= 16.521

Means with the same letter are not significantly different.

Bon Grouping	Mean	N	TRT
A	55.400	15	D
A	50.067	15	B
A	49.733	15	C
A	45.267	15	A

5. ANALYSIS OF LE DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

5. ANALYSIS OF LE DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESP

File:b:\baymd.out	Page 11				
Source	DF	Sum of Squares	F Value	Pr > F	
Model	3	769.66666667	0.94	0.4294	
Error	56	15348.66666667			
Corrected Total	59	16118.33333333			
	R-Square	C.V.	RESP Mean		
	0.047751	33.22166	49.83333333		

5. ANALYSIS OF LE DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 274.0833
Critical Value of Dunnett's t= 2.414
Minimum Significant Difference= 14.596

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
D - A	-4.529	10.067	24.662
B - A	-10.329	4.267	18.862
C - A	-10.396	4.200	18.796

5. ANALYSIS OF LE DATA

8:15 Wednesday, March 31, 1993
23

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate, but generally has a higher type II error rate than REGWQ.

Alpha= 0.05 df= 56 MSE= 274.0833
Critical Value of t= 2.74
Minimum Significant Difference= 16.535

Means with the same letter are not significantly different.

File:b:baymd.out Page 12	Bon Grouping		Mean	N	TRT
	A		55.267	15	D
	A		49.467	15	B
	A		49.400	15	C
	A		45.200	15	A

6. ANALYSIS OF NH DATA *****
8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

6. ANALYSIS OF NH DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	621.5166667	0.80	0.4966
Error	56	14419.46666667		
Corrected Total	59	15040.98333333		
	R-Square	C.V.	RESP Mean	
	0.041322	33.65224	47.68333333	

Source	DF	Type I SS	F Value	Pr > F
TRT	3	621.51666667	0.80	0.4966
Source	DF	Type III SS	F Value	Pr > F
TRT	3	621.51666667	0.80	0.4966

6. ANALYSIS OF NH DATA

8.15 Wednesday March 31 1993
26

General Linear Models Procedure

Dunnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 257.4905
Critical Value of Dunnett's T= 2.414
Minimum Significant Difference= 14.147

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
D - A	-5.147	9.000	23.147
C - A	-10.613	3.533	17.680
B - A	-10.613	3.533	17.680

6. ANALYSIS OF NH DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate, but generally has a higher type II error rate than REGWQ.

Alpha= 0.05 df= 56 MSE= 257.4905
Critical Value of T= 2.74
Minimum Significant Difference= 16.027

Means with the same letter are not significantly different.

Bon Grouping	Mean	N	TRT
A	52.667	15	D
A			
A	47.200	15	C
A			
A	47.200	15	B
A			
A	43.667	15	A
A			

7. ANALYSIS OF HS DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

7. ANALYSIS OF HS DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	662.5333333	0.87	0.4606
Error	56	14165.2000000		
Corrected Total	59	14827.7333333		
R-Square				
C.V.				
				RESP Mean
				46.93333333

Source	DF	Type I SS	F Value	Pr > F
TRT	3	662.5333333	0.87	0.4606
Source	DF	Type III SS	F Value	Pr > F
TRT	3	662.5333333	0.87	0.4606

7. ANALYSIS OF HS DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 252.95
Critical Value of Dunnett's T= 2.414
Minimum Significant Difference= 14.022

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
D - A	-4.888	9.133	23.155
C - A	-10.755	3.267	17.288
B - A	-11.222	2.800	16.822

7. ANALYSIS OF HS DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate, but generally has a higher type II error rate than REGWQ.

Alpha= 0.05 df= 56 MSE= 252.95

File:b:aymd.out Page 15
 Critical Value of T= 2.74
 Minimum Significant Difference= 15.885
 Means with the same letter are not significantly different.

Bon Grouping	Mean	N	TRT
A	52.267	15	D
A	46.400	15	C
A	45.933	15	B
A	43.133	15	A

8. ANALYSIS OF EGGSHELL THICKNESS DATA

 8:15 Wednesday, March 31, 1993

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

NOTE: Due to missing values, only 58 observations can be used in this analysis.

8. ANALYSIS OF EGGSHELL THICKNESS DATA

 8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESP				
Source	DF	Sum of Squares	F Value	Pr > F
Model	3	0.00313548	3.29	0.0275
Error	54	0.01717136		
Corrected Total	57	0.02030684		
R-Square				
		C.V.	RESP Mean	
	0.154405	4.536865	0.39305172	
Type III SS				
Source	DF	Type III SS	F Value	Pr > F
TRT	3	0.00313548	3.29	0.0275
Type III SS				
Source	DF	Type III SS	F Value	Pr > F
TRT	3	0.00313548	3.29	0.0275

File:b:aymd.out Page 16
 8. ANALYSIS OF EGGSHELL THICKNESS DATA

 8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 54 MSE= 0.000318
 Critical Value of Dunnett's T= 2.409

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

TRT Comparison	Simultaneous Lower Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit	
	Lower Limit	Upper Limit		Lower Limit	Upper Limit
B - A	-0.01635	-0.00007	-0.00007	0.01621	
D - A	-0.02862	-0.01234	-0.01234	0.00394	
C - A	-0.03282	-0.01654	-0.01654	-0.00026	***

8. ANALYSIS OF EGGSHELL THICKNESS DATA

 8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 54 MSE= 0.000318
 Critical Value of T= 2.73894

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

TRT Comparison	Simultaneous Lower Confidence Limit		Difference Between Means	Simultaneous Upper Confidence Limit	
	Lower Limit	Upper Limit		Lower Limit	Upper Limit
A - B	-0.01844	0.00007	0.00007	0.01858	
A - D	-0.00617	0.01234	0.01234	0.03085	
A - C	-0.00197	0.01654	0.01654	0.03505	
B - A	-0.01858	-0.00007	-0.00007	0.01844	
B - D	-0.00557	0.01227	0.01227	0.03010	
B - C	-0.00137	0.01647	0.01647	0.03430	
D - A	-0.03085	-0.01234	-0.01234	0.00617	
D - B	-0.03010	-0.01227	-0.01227	0.00557	
D - C	-0.01363	0.00420	0.00420	0.02203	
C - A	-0.03505	-0.01654	-0.01654	0.00197	
C - B	-0.03430	-0.01647	-0.01647	0.00137	
C - D	-0.02203	-0.00420	-0.00420	0.01363	

9. ANALYSIS OF HATCHLING WEIGHT DATA

22

8:15 Wednesday, March 31, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

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

9. ANALYSIS OF HATCHLING WEIGHT DATA 37

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	24.82458068	1.27	0.2951
Error	53	346.15787546		
Corrected Total	56	370.98245614		

R-Square	C.V.	RESP Mean
0.066916	6.230595	41.01754386

Source	DF	Type I SS	F Value	Pr > F
TRT	3	24.82458068	1.27	0.2951
Source	DF	Type III SS	F Value	Pr > F
TRT	3	24.82458068	1.27	0.2951

9. ANALYSIS OF HATCHLING WEIGHT DATA 38

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 6.531281
Critical Value of Dunnett's T= 2.412

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

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

	- A	-0.884	1.451	3.787
C	- A	-2.018	0.318	2.654
D	- A	-2.632	-0.258	2.116

9. ANALYSIS OF HATCHLING WEIGHT DATA 39

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 6.531281
Critical Value of T= 2.74091

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

TRT Comparison	Simultaneous			Upper Confidence Limit
	Lower Confidence Limit	Difference Between Means		
C - D	-1.424	1.133	3.691	
C - A	-1.203	1.451	4.106	
C - B	-0.894	1.710	4.313	
D - C	-3.691	-1.133	1.424	
D - A	-2.536	0.318	2.972	
D - B	-2.027	0.576	3.179	
A - C	-4.106	-1.451	1.203	
A - D	-2.972	-0.318	2.536	
A - B	-2.440	0.258	2.956	
B - C	-4.313	-1.710	0.894	
B - D	-3.179	-0.576	2.027	
B - A	-2.956	-0.258	2.440	

10. ANALYSIS OF 14-DAY SURVIVOR WEIGHT DATA 40

8:15 Wednesday, March 31, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

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

10. ANALYSIS OF 14-DAY SURVIVOR WEIGHT DATA 41

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	242.57696163	0.20	0.8977
Error	53	21712.40549451		
Corrected Total	56	21954.98245614		

R-Square C.V. RESP Mean
0.011049 8.837863 229.01754386

Source	DF	Type I SS	F Value	Pr > F
TRT	3	242.57696163	0.20	0.8977
Source	DF	Type III SS	F Value	Pr > F
TRT	3	242.57696163	0.20	0.8977

10. ANALYSIS OF 14-DAY SURVIVOR WEIGHT DATA

42

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 409.668

Critical Value of Dunnnett's T= 2.412

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
D - A	-22.314	-3.815	14.683
B - A	-23.347	-4.544	14.259
C - A	-24.114	-5.615	12.883

10. ANALYSIS OF 14-DAY SURVIVOR WEIGHT DATA

43

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 409.668

Critical Value of T= 2.74091

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
A - D	-17.207	3.815	24.837
A - B	-16.824	4.544	25.912
A - C	-15.407	5.615	26.637
D - A	-24.837	-3.815	17.207
D - B	-19.887	0.729	21.344
D - C	-18.457	1.800	22.057
B - A	-25.912	-4.544	16.824
B - D	-21.344	-0.729	19.887
B - C	-19.544	1.071	21.687
C - A	-26.637	-5.615	15.407
C - D	-22.057	-1.800	18.457
C - B	-21.687	-1.071	19.544

11. ANALYSIS OF FOOD CONSUMPTION DATA

44

8:15 Wednesday, March 31, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

11. ANALYSIS OF FOOD CONSUMPTION DATA

45

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESP

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	46843966.9138	0.70	0.5536
Error	56	1241878027.9160		
Corrected Total	59	1288721994.8298		

R-Square C.V. RESP Mean
0.036349 13.45105 35009.768333

Source	DF	Type I SS	F Value	Pr > F
TRT	3	46843966.9138	0.70	0.5536
Source	DF	Type III SS	F Value	Pr > F

TRT	3	46843966.9138	0.70	0.5536
TRT				

11. ANALYSIS OF FOOD CONSUMPTION DATA 46

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnnett's T tests for variable: RESP

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

Alpha= 0.05 Confidence= 0.95 df= 56 MSE= 22176393
Critical Value of Dunnnett's T= 2.414
Minimum Significant Difference= 4151.7

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - A	-2477	1675	5827
C - A	-2878	1274	5425
D - A	-4627	-475	3677

11. ANALYSIS OF FOOD CONSUMPTION DATA 47

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESP

NOTE: This test controls the type I experimentwise error rate, but generally has a higher type II error rate than REGWD.

Alpha= 0.05 df= 56 MSE= 22176393
Critical Value of T= 2.74
Minimum Significant Difference= 4703.3

Means with the same letter are not significantly different.

Bon Grouping	Mean	N	TRT
A	36066	15	B
A	35665	15	C
A	34391	15	A
A	33917	15	D

8. ANALYSIS OF ES/EL DATA 48

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

NOTE: Due to missing values, only 58 observations can be used in this analysis.

8. ANALYSIS OF ES/EL DATA 49

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE
Weight: WT

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	4875.78766668	1.04	0.3812
Error	54	84175.47502887		
Corrected Total	57	89051.26269555		
R-Square		C.V.	RESPONSE Mean	
	0.054753	57.51653	68.64410058	

Source	DF	Type I SS	F Value	Pr > F
TRT	3	4875.78766667	1.04	0.3812
Source	DF	Type III SS	F Value	Pr > F
TRT	3	4875.78766667	1.04	0.3812

8. ANALYSIS OF ES/EL DATA 50

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnnett's 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= 54 MSE= 1558.805
Critical Value of Dunnnett's T= 2.409

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - A	-33.423	2.622	38.667

D - A 1.340 37.385
C - A -0.256 35.789

8. ANALYSIS OF ES/EL DATA ***** 8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 54 MSE= 1558.805
Critical Value of T= 2.73894

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

TRT Comparison	Simultaneous			Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - D	-38.205	1.281	40.768	-38.205	1.281	40.768
B - A	-38.355	2.622	43.599	-38.355	2.622	43.599
B - C	-36.608	2.878	42.365	-36.608	2.878	42.365
D - B	-40.768	-1.281	38.205	-40.768	-1.281	38.205
D - A	-39.637	1.340	42.317	-39.637	1.340	42.317
D - C	-37.890	1.597	41.083	-37.890	1.597	41.083
A - B	-43.599	-2.622	38.355	-43.599	-2.622	38.355
A - D	-42.317	-1.340	39.637	-42.317	-1.340	39.637
A - C	-40.720	0.256	41.233	-40.720	0.256	41.233
C - B	-42.365	-2.878	36.608	-42.365	-2.878	36.608
C - D	-41.083	-1.597	37.890	-41.083	-1.597	37.890
C - A	-41.233	-0.256	40.720	-41.233	-0.256	40.720

9. ANALYSIS OF VE/ES DATA ***** 8:15 Wednesday, March 31, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

NOTE: Due to missing values, only 58 observations can be used in this analysis.

9. ANALYSIS OF VE/ES DATA ***** 8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE
Weight: WT

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	3439.74290669	0.16	0.9239
Error	54	391124.50459398		
Corrected Total	57	394564.24750066		

R-Square C.V. RESPONSE Mean
0.008718 109.7830 77.52209456

Source	DF	Type I SS	F Value	Pr > F
TRT	3	3439.74290670	0.16	0.9239
Source	DF	Type III SS	F Value	Pr > F
TRT	3	3439.74290670	0.16	0.9239

9. ANALYSIS OF VE/ES DATA ***** 8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnett's 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= 54 MSE= 7243.046
Critical Value of Dunnett's T= 2.409

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

TRT Comparison	Simultaneous			Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - A	-75.505	2.193	79.891	-75.505	2.193	79.891
D - A	-76.882	0.816	78.514	-76.882	0.816	78.514
C - A	-78.256	-0.558	77.140	-78.256	-0.558	77.140

9. ANALYSIS OF VE/ES DATA ***** 8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 54 MSE= 7243.046
Critical Value of T= 2.73894

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

TRT Comparison	Simultaneous			Difference Between Means	Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit			Lower Confidence Limit	Upper Confidence Limit
B - D	-83.739	86.494		1.377	86.494	
B - A	-86.136	90.522		2.193	90.522	
B - C	-82.365	87.867		2.751	87.867	
D - B	-86.494	83.739		-1.377	83.739	
D - A	-87.513	89.145		0.816	89.145	
D - C	-83.743	86.490		1.374	86.490	
A - B	-90.522	86.136		-2.193	86.136	
A - D	-89.145	87.513		-0.816	87.513	
A - C	-87.771	88.887		0.558	88.887	
C - B	-87.867	82.365		-2.751	82.365	
C - D	-86.490	83.743		-1.374	83.743	
C - A	-88.887	87.771		-0.558	87.771	

10. ANALYSIS OF LE/VE DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

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

10. ANALYSIS OF LE/VE DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE
Weight:

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	7239.99836329	3.60	0.0192
Error	53	35484.19587578		
Corrected Total	56	42724.19423907		

R-Square C.V. RESPONSE Mean
0.169459 29.45609 87.84246673

Source	DF	Type I SS	F Value	Pr > F
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Source	DF	Type III SS	F Value	Pr > F
TRT	3	7239.99836328	3.60	0.0192

10. ANALYSIS OF LE/VE DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnnett's 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= 53 MSE= 669.5131
Critical Value of Dunnnett's T= 2.412

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

TRT Comparison	Simultaneous			Difference Between Means	Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit			Lower Confidence Limit	Upper Confidence Limit
D - A	-24.067	-0.419		-23.229	23.229	
C - A	-25.840	-2.192		-21.457	21.457	
B - A	-27.970	-3.933		-20.105	20.105	

10. ANALYSIS OF LE/VE DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 669.5131
Critical Value of T= 2.74091

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

TRT Comparison	Simultaneous			Difference Between Means	Simultaneous	
	Lower Confidence Limit	Upper Confidence Limit			Lower Confidence Limit	Upper Confidence Limit
A - D	-26.455	0.419		27.293	27.293	
A - C	-24.683	2.192		29.066	29.066	
A - B	-23.583	3.933		31.249	31.249	
D - A	-27.293	-0.419		-26.455	26.455	
D - C	-24.124	-1.773		-27.669	27.669	
D - B	-22.841	-3.514		-29.869	29.869	
C - A	-29.066	-2.192		-24.683	24.683	
C - D	-21.669	-1.773		-24.124	24.124	
C - B	-24.614	-1.741		-28.096	28.096	

B - A -31.249 -3.933 23.383
 B - D -29.869 -3.514 22.841
 B - C -28.096 -1.741 24.614

11 ANALYSIS OF NH/LE DATA 60

 8:15 Wednesday, March 31, 1993

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

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

11 ANALYSIS OF NH/LE DATA 61

 8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE
 Weight: WT

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	1612.68108312	0.30	0.8269
Error	53	95700.05209786		
Corrected Total	56	97312.73318099		
R-Square		C.V.	RESPONSE Mean	
0.016572		53.54530	79.35911416	

Source	DF	Type I SS	F Value	Pr > F
TRT	3	1612.68108312	0.30	0.8269
Source	DF	Type III SS	F Value	Pr > F
TRT	3	1612.68108312	0.30	0.8269

11 ANALYSIS OF NH/LE DATA 62

 8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnett's 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= 53 MSE= 1805.661
 Critical Value of Dunnett's T= 2.412
 Comparisons significant at the 0.05 level are indicated by ****.

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
C - A	-40.490	-1.653	37.183
D - A	-40.570	-1.734	37.103
B - A	-41.327	-1.852	37.623

11 ANALYSIS OF NH/LE DATA 63

 8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 53 MSE= 1805.661
 Critical Value of T= 2.74091

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
A - C	-42.481	1.653	45.787
A - D	-42.400	1.734	45.868
A - B	-43.008	1.852	46.712
C - A	-45.787	-1.653	42.481
C - D	-42.448	0.080	42.609
C - B	-43.083	0.198	43.480
D - A	-45.868	-1.734	42.400
D - C	-42.609	-0.080	42.448
D - B	-43.163	0.118	43.400
B - A	-46.712	-1.852	43.008
B - C	-43.480	-0.198	43.083
B - D	-43.400	-0.118	43.163

12 ANALYSIS OF NH/LE DATA 64

 8:15 Wednesday, March 31, 1993

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
TRT	4	A B C D

NOTE: Due to missing values, only 58 observations can be used in this analysis.

12 ANALYSIS OF NH/EL DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE
WT

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	5324.38782539	0.38	0.7700
Error	54	254238.70165500		
Corrected Total	57	259563.08948039		

R-Square C.V. RESPONSE Mean
0.020513 112.1457 61.18446277

Source	DF	Type I SS	F Value	Pr > F
TRT	3	5324.38782538	0.38	0.7700
Source	DF	Type III SS	F Value	Pr > F
TRT	3	5324.38782539	0.38	0.7700

12 ANALYSIS OF NH/EL DATA

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnett's 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= 54 MSE= 4708.124
Critical Value of Dunnett's T= 2.409

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - A	-61.815	0.828	63.472
D - A	-62.221	0.422	63.065
C - A	-64.860	-2.217	60.426

12 ANALYSIS OF NH/EL DATA

67

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 54 MSE= 4708.124
Critical Value of T= 2.73894

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
B - D	-68.217	0.407	69.031
B - A	-70.386	0.828	72.043
B - C	-65.578	3.045	71.669
D - B	-69.031	-0.407	68.217
D - A	-70.793	0.422	71.636
D - C	-65.985	2.639	71.263
A - B	-72.043	-0.828	70.386
A - D	-71.636	-0.422	70.793
A - C	-68.997	2.217	73.431
C - B	-71.669	-3.045	65.578
C - D	-71.263	-2.639	65.985
C - A	-73.431	-2.217	68.997

17. ANALYSIS OF HS/NH DATA

68

8:15 Wednesday, March 31, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

NOTE: Due to missing values, only 56 observations can be used in this analysis.

17. ANALYSIS OF HS/NH DATA

69

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE
WT

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	3533.27308669	0.70	0.5534

Error	52	86872.88578063					
Corrected Total	55	90406.15886732					
R-Square			C.V.		RESPONSE Mean		
0.039082			47.96979		85.20648250		

Source	DF	Type I SS	F Value	Pr > F
TRT	3	3533.27308669	0.70	0.5534
Source	DF	Type III SS	F Value	Pr > F
TRT	3	3533.27308669	0.70	0.5534

17. ANALYSIS OF HS/NH DATA

70

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnnett's 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= 52 MSE= 1670.632
Critical Value of Dunnnett's T= 2.409

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

TRT Comparison	Simultaneous			Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
D - A	-36.633	1.497	39.627			
C - A	-39.017	-0.887	37.244			
B - A	-40.065	-1.334	37.397			

17. ANALYSIS OF HS/NH DATA

71

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 52 MSE= 1670.632
Critical Value of T= 2.74295

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

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

D - A	-41.924	1.497	44.918
D - C	-38.554	2.384	43.322
D - B	-38.832	2.831	44.494
A - D	-44.918	-1.497	41.924
A - C	-42.535	0.887	44.308
A - B	-42.771	1.334	45.440
C - D	-43.322	-2.384	38.554
C - A	-44.308	-0.887	42.535
C - B	-41.215	0.447	42.110
B - D	-44.494	-2.831	38.832
B - A	-45.440	-1.334	42.771
B - C	-42.110	-0.447	41.215

18. ANALYSIS OF EC/EL DATA

72

8:15 Wednesday, March 31, 1993General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

NOTE: Due to missing values, only 58 observations can be used in this analysis.

18. ANALYSIS OF EC/EL DATA

73

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE
Weight:

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	18087.5933679	1.61	0.1976
Error	54	202126.7638323		

Corrected Total 57 220214.3572002

R-Square	C.V.	RESPONSE Mean
0.082136	555.3865	11.01589336

Source	DF	Type I SS	F Value	Pr > F
TRT	3	18087.5933679	1.61	0.1976
Source	DF	Type III SS	F Value	Pr > F
TRT	3	18087.5933679	1.61	0.1976

18. ANALYSIS OF EC/EL DATA

8:15 Wednesday, March 31, 1993

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General Linear Models Procedure

Dunnnett's 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= 54 MSE= 3743.088
Critical Value of Dunnnett's T= 2.409

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
C - A	-55.400	0.455	56.311
D - A	-57.532	-1.676	54.179
B - A	-61.060	-5.204	50.654

18. ANALYSIS OF EC/EL DATA

8:15 Wednesday, March 31, 1993

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General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 54 MSE= 3743.088
Critical Value of T= 2.73894

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

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
C - A	-63.043	0.455	63.953
C - D	-59.056	2.132	63.320
C - B	-55.529	5.660	66.848
A - C	-63.953	-0.455	63.043
A - D	-61.821	1.676	65.174
A - B	-58.294	5.204	68.702
D - C	-63.320	-2.132	59.056
D - A	-65.174	-1.676	61.821
D - B	-57.660	3.528	64.716
B - C	-66.848	-5.660	55.529
B - A	-68.702	-5.204	58.294
B - D	-64.716	-3.528	57.660

19. ANALYSIS OF NH/ES DATA

8:15 Wednesday, March 31, 1993

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General Linear Models Procedure
Class Level Information

Class Levels Values
TRT 4 A B C D

Number of observations in data set = 60

NOTE: Due to missing values, only 58 observations can be used in this analysis.

19. ANALYSIS OF NH/ES DATA

8:15 Wednesday, March 31, 1993

77

General Linear Models Procedure

Dependent Variable: RESPONSE

Weight: WT

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	3514.51060279	0.20	0.8993
Error	54	324248.59204171		
Corrected Total	57	327763.10264450		

R-Square C.V. RESPONSE Mean
0.010723 108.2144 71.60724749

Source	DF	Type I SS	F Value	Pr > F
TRT	3	3514.51060279	0.20	0.8993
Source	DF	Type III SS	F Value	Pr > F
TRT	3	3514.51060279	0.20	0.8993

19. ANALYSIS OF NH/ES DATA

8:15 Wednesday, March 31, 1993

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General Linear Models Procedure

Dunnnett's 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= 54 MSE= 6004.604
Critical Value of Dunnnett's T= 2.409

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

Simultaneous Simultaneous

8:15 Wednesday, March 31, 1993

TRT Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
D - A	-72.163	-1.418	69.326
B - A	-72.733	-1.988	68.756
C - A	-73.699	-2.954	67.790

19. ANALYSIS OF NH/ES DATA 79

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate but generally has a higher type II error rate than Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 54 MSE= 6004.604
Critical Value of T= 2.73894

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

TRT Comparison	Simultaneous		Simultaneous	
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
A - D	-79.006	1.418	81.843	
A - B	-78.436	1.988	82.413	
A - C	-77.470	2.954	83.378	
D - A	-81.843	-1.418	79.006	
D - B	-76.929	0.570	78.069	
D - C	-75.963	1.536	79.034	
B - A	-82.413	-1.988	78.436	
B - D	-78.069	-0.570	76.929	
B - C	-76.533	0.966	78.464	
C - A	-83.378	-2.954	77.470	
C - D	-79.034	-1.536	75.963	
C - B	-78.464	-0.966	76.533	

20. ANALYSIS OF HS/ES DATA 80

8:15 Wednesday, March 31, 1993

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

NOTE: Due to missing values, only 58 observations can be used in this analysis.

20. ANALYSIS OF HS/ES DATA 81

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: RESPONSE

Weight:

Source	DF	Sum of Squares	F Value	Pr > F
Model	3	3664.79938921	0.21	0.8873
Error	54	310497.01347793		
Corrected Total	57	314161.81286714		

R-Square C.V. RESPONSE Mean
0.011665 108.1330 70.12512508

Source	DF	Type I SS	F Value	Pr > F
TRT	3	3664.79938921	0.21	0.8873
Source	DF	Type III SS	F Value	Pr > F
TRT	3	3664.79938921	0.21	0.8873

20. ANALYSIS OF HS/ES DATA 82

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dunnett's T tests for variable: RESPONSE

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

Alpha= 0.05 Confidence= 0.95 df= 54 MSE= 5749.945
Critical Value of Dunnett's T= 2.409

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

TRT Comparison	Simultaneous		Simultaneous	
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
D - A	-69.423	-0.195	69.033	
B - A	-71.225	-1.997	67.231	
C - A	-71.644	-2.416	66.812	

20. ANALYSIS OF HS/ES DATA 83

8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: RESPONSE

NOTE: This test controls the type I experimentwise error rate

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 but generally has a higher type II error rate than
 Tukey's for all pairwise comparisons,
 Alpha= 0.05 Confidence= 0.95 df= 54 MSE= 5749.945
 Critical Value of T= 2.73894
 Comparisons significant at the 0.05 level are indicated by ****.

TRT Comparison	Simultaneous		
	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit
A - D	-78.505	0.195	78.895
A - B	-76.703	1.997	80.697
A - C	-76.285	2.416	81.116
D - A	-78.895	-0.195	78.505
D - B	-74.035	1.802	77.639
D - C	-73.617	2.220	78.058
B - A	-80.697	-1.997	76.703
B - D	-77.639	-1.802	74.035
B - C	-75.419	0.418	76.256
C - A	-81.116	-2.416	76.285
C - D	-78.058	-2.220	73.617
C - B	-76.256	-0.418	75.419

21. COVARIATE ANALYSIS OF MALE BODY WEIGHT DATA 84

 8:15 Wednesday, March 31, 1993

General Linear Models Procedure
 Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

NOTE: Due to missing values, only 59 observations can be used in this analysis.

21. COVARIATE ANALYSIS OF MALE BODY WEIGHT DATA 85

 8:15 Wednesday, March 31, 1993

General Linear Models Procedure

Dependent Variable: POSTM				
Source	DF	Sum of Squares	F Value	Pr > F
Model	4	177876.417057	3.36	0.0158
Error	54	714562.159214		
Corrected Total	58	892438.576271		
R-Square			C.V.	POSTM Mean
	0.199315	8.564849		1343.0847458

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Source	DF	Type I SS	F Value	Pr > F
TRT	3	41165.228652	1.04	0.3836
PREM	1	136711.188405	10.33	0.0022
Source	DF	Type III SS	F Value	Pr > F
TRT	3	56030.196598	1.41	0.2495
PREM	1	136711.188405	10.33	0.0022

Parameter	Estimate	T for H0: Parameter=0	Pr > T	Std Error of Estimate
INTERCEPT	603.0906609	2.62	0.0115	230.39794961
TRT A	-2.6441391	-0.06	0.9502	42.16491340
TRT B	64.7873518	1.55	0.1311	42.26448258
TRT C	-13.9969283	-0.33	0.7446	42.74768735
TRT D	0.0000000	0.00	1.0000	42.74768735
PREM	0.5911264	3.21	0.0022	0.18390835

NOTE: The X'X matrix has been found to be singular and a generalized inverse was used to solve the normal equations. Estimates followed by the letter 'B' are biased, and are not unique estimators of the parameters.

21. COVARIATE ANALYSIS OF MALE BODY WEIGHT DATA 86

 8:15 Wednesday, March 31, 1993

General Linear Models Procedure
 Least Squares Means
 Coefficients for TRT Least Square Means

TRT	A	B	C
Effect	Coefficients		
INTERCEPT	1	1	1
TRT A	1	0	0
TRT B	0	1	0
TRT C	0	0	1
TRT D	0	0	0
PREM	1230.7288136	1230.7288136	1230.7288136
TRT	D		
Effect	Coefficients		
INTERCEPT	1		
TRT A	0		
TRT B	0		
TRT C	0		
TRT D	1		
PREM	1230.7288136		

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 21. COVARIATE ANALYSIS OF MALE BODY WEIGHT DATA 87

 8:15 Wednesday, March 31, 1993
 General Linear Models Procedure
 Least Squares Means

TRT	POSTM LSMEAN	Std Err LSMEAN	Pr > T HO:LSMEAN=0	LSMEAN Number
A	1327.96279	29.74154	0.0001	1
B	1395.39428	29.81065	0.0001	2
C	1316.61000	30.81549	0.0001	3
D	1330.60693	29.77802	0.0001	4

Pr > |T| HO: LSMEAN(I)=LSMEAN(J)

i/j	1	2	3	4
1		0.1144	0.7923	0.9502
2	0.1144		0.0724	0.1311
3	0.7923	0.0724		0.7446
4	0.9502	0.1311	0.7446	

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

21. COVARIATE ANALYSIS OF MALE BODY WEIGHT DATA 88

 8:15 Wednesday, March 31, 1993
 General Linear Models Procedure

Dunnnett's 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= 54 MSE= 13232.63
 Critical Value of Dunnnett's T= 2.418

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

TRT Comparison	Simultaneous			Upper Confidence Limit
	Lower Limit	Difference Between Means	Pr > F	
B - A	-37.36	64.20	165.76	
D - A	-87.10	14.47	116.03	
C - A	-103.00	0.36	103.72	

21. COVARIATE ANALYSIS OF MALE BODY WEIGHT DATA 89

 8:15 Wednesday, March 31, 1993
 General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: POSTM

NOTE: This test controls the type I experimentwise error rate

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 but generally has a higher type II error rate than
 Tukey's for all pairwise comparisons.
 Alpha= 0.05 Confidence= 0.95 df= 54 MSE= 13232.63
 Critical Value of T= 2.73894
 Comparisons significant at the 0.05 level are indicated by ****.

TRT Comparison	Simultaneous			Upper Confidence Limit
	Lower Limit	Difference Between Means	Pr > F	
B - D	-85.31	49.73	164.78	
B - C	-53.24	63.84	180.93	
B - A	-50.85	64.20	179.25	
D - B	-164.78	-49.73	65.31	
D - C	-102.97	14.11	131.19	
D - A	-100.58	14.47	129.51	
C - B	-180.93	-63.84	53.24	
C - D	-131.19	-14.11	102.97	
C - A	-116.73	0.36	117.44	
A - B	-119.25	-64.20	50.85	
A - D	-129.51	-14.47	100.58	
A - C	-117.44	-0.36	116.73	

22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT DATA 90

 8:15 Wednesday, March 31, 1993
 General Linear Models Procedure
 Class Level Information

Class	Levels	Values
TRT	4	A B C D

Number of observations in data set = 60

NOTE: Due to missing values, only 59 observations can be used in this analysis.

22. COVARIATE ANALYSIS OF FEMALE BODY WEIGHT DATA 91

 8:15 Wednesday, March 31, 1993
 General Linear Models Procedure

Dependent Variable: POSTF

Source	DF	Sum of Squares	F Value	Pr > F
Model	4	188870.228108	4.09	0.0057
Error	54	622885.399011		
Corrected Total	58	811755.627119		
R-Square		C.V.		POSTF Mean
0.232669		8.273351		1298.1525424

Source	DF	Type I SS	F Value	Pr > F
TRT	3	117570.298547	3.40	0.0242
PREF	1	71299.929561	6.18	0.0160

Source	DF	Type III SS	F Value	Pr > F
TRT	3	88114.9060576	2.55	0.0655
PREF	1	71299.9295607	6.18	0.0160

Parameter	Estimate	T for H0: Parameter=0	Pr > T	Std Error of Estimate
INTERCEPT	812.8086365	B	3.65	0.0006
TRT	-38.3225880	B	-0.97	222.54924290
	-99.7852028	B	-2.52	39.55154279
	-82.6027341	B	-2.05	39.55446905
	0.0000000	B	2.49	40.38109839
PREF	0.5112286	B	2.49	0.20562589

NOTE: The X'X matrix has been found to be singular and a generalized inverse was used to solve the normal equations. Estimates followed by the letter 'B' are biased, and are not unique estimators of the parameters.

General Linear Models Procedure
Least Squares Means
Coefficients for TRT Least Square Means

TRT	Effect	Coefficients	A	B	C
INTERCEPT			1	1	1
TRT	A		1	0	0
	B		0	1	0
	C		0	0	1
	D		0	0	0
PREF			1056.3898305	1056.3898305	1056.3898305

TRT	Effect	Coefficients	D
INTERCEPT			1
TRT	A		0
	B		0
	C		0
	D		1
PREF			1056.3898305

General Linear Models Procedure
Least Squares Means

TRT	POSTF LSMEAN	Std Err LSMEAN	Pr > T	LSMEAN=0	LSMEAN Number
A	1314.54275	27.73289	0.0001	0.0001	1
B	1253.08014	27.77463	0.0001	0.0001	2
C	1270.26261	28.81689	0.0001	0.0001	3
D	1352.86534	27.96263	0.0001	0.0001	4

Pr > T	H0: LSMEAN(i)=LSMEAN(j)
i/j	1 2 3 4
1	0.1233 0.2734 0.3345
2	0.1233 0.6686 0.0146
3	0.2734 0.6686 0.0457
4	0.3345 0.0146 0.0457

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

General Linear Models Procedure

Dunnett's 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= 54 MSE= 11534.91
Critical Value of Dunnett's T= 2.418

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

TRT Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
D - A	-48.42	46.40	141.22
C - A	-147.97	-51.47	45.03
B - A	-161.02	-66.20	28.62

General Linear Models Procedure

Bonferroni (Dunn) T tests for variable: POSTF

NOTE: This test controls the type I experimentwise error rate

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 but generally has a higher type II error rate than
 Tukey's for all pairwise comparisons.

Alpha= 0.05 Confidence= 0.95 df= 54 MSE= 11534.91
 Critical Value of T= 2.73894

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

TRT Comparison	Simultaneous		Difference Between Means	Simultaneous		
	Lower Confidence Limit	Upper Confidence Limit		Lower Confidence Limit	Upper Confidence Limit	
D - A	-61.01	153.81	46.40	153.81	153.81	
D - C	-11.44	207.19	97.87	207.19	207.19	***
D - B	5.19	220.01	112.60	220.01	220.01	***
A - D	-153.81	61.01	-46.40	61.01	61.01	
A - C	-57.84	160.79	51.47	160.79	160.79	
A - B	-41.21	173.61	66.20	173.61	173.61	
C - D	-207.19	11.44	-97.87	11.44	11.44	
C - A	-160.79	57.84	-51.47	57.84	57.84	
C - B	-94.59	124.04	14.73	124.04	124.04	
B - D	-220.01	-5.19	-112.60	-5.19	-5.19	***
B - A	-173.61	41.21	-66.20	41.21	41.21	
B - C	-124.04	94.59	-14.73	94.59	94.59	