DATA EVALUATION RECORD
AQUATIC INVERTEBRATE LIFE CYCLE TEST
§ 72-4(c)

1. **CHEMICAL:** Penoxsulam — PC Code No.: ~~199031~~ 119031

2. **TEST MATERIAL:** XDE-638 — Purity: 97.7%

3. **CITATION:**

Authors: Boeri, R.L., and T.J. Ward

Title: XDE-638: Chronic Toxicity Test to the Mysid, *Americamysis bahia*

Study Completion Date: December 21, 2001

Laboratory: T.R. Wilbury Laboratories, Inc.
40 Doaks Lane
Marblehead, Massachusetts 01945

Sponsor: The Dow Chemical Company
Midland , Michigan 48674
for
Dow AgroSciences LLC
Indianapolis, Indiana 46268

Laboratory Report ID: 2202-DO (Dow Study No. 010060)

MRID No.: 45831028

DP Barcode: D288160

4. **REVIEWED BY:** Rebecca Bryan, Staff Scientist, Dynamac Corporation

Signature: Rebecca Bryan **Date:** 10/31/03

APPROVED BY: Christie E. Padova, B.S., Staff Scientist, Dynamac Corporation

Signature: C E Padova **Date:** 10/31/03

5. **APPROVED BY:** Richard Felthousen ~~William Erickson~~, Biologist, OPP/EFED/ERB - RF

Signature: R Felthousen, Sr **Date:** 4/7/04

J Goodyear

2051768

1

6. STUDY PARAMETERS:

Scientific Name of Test Organisms:	*Americamysis bahia*
Age of Test Organism:	< 24 hours old
Definitive Test Duration	28 days
Study Method:	Flow-through
Type of Concentrations:	Mean-measured

7. CONCLUSIONS:

In a 28-day life-cycle test, *Americamysis bahia* neonates were exposed under flow-through conditions to XDE-638 (penoxsulam) at mean-measured concentrations to <0.0881 (LOD, control), 8.08, 15.2, 29.4, 59.3, and 119 ppm a.i. Prior to sexual maturity and pairing, there were 60 mysids/level: 15 mysids/compartment, 2 compartments/aquarium, and 2 replicate test aquaria/level. On Day 14, up to 20 pair/level were isolated for individual matings; the remainder of first-generation mysids were group retained. First-generation mysids were observed for mortality and signs of abnormal behavior once daily throughout the study. Once daily during the reproduction period (Days 16-28), second-generation mysids were counted and discarded. Data endpoints included percent survival of first-generation mysids at study termination (Day 28; combined sexes), number of young produced per female, and length, wet weight, and dry weight of surviving first-generation mysids (Day 28; sex-specific and combined sexes).

The dry weights of males were statistically-reduced at all treatment levels compared to the control. Dry weights averaged 0.64 mg for the negative control group, and ranged from 0.46 to 0.54 mg for the treatment groups. In addition, a treatment-related reduction in length was observed in combined sexes at the 119 ppm a.i. test level compared to the control group (8.4 versus 9.2 mm). No other treatment-related effects were observed during the study.

Based on significant reductions in dry weights of males, the LOAEC was 8.08 ppm a.i.. The NOAEC was not established, because reductions were found at 8.08 ppm a.i., the lowest measured concentration studied.

This study is scientifically sound. However, since the survival of male mysids following pairing was not monitored, since offspring were not maintained and observed for 4 days, and since a NOAEC was not established, this study does not fulfill the guideline requirements for an aquatic invertebrate life-cycle toxicity test using the *Americamysis bahia* (72-4c), and is classified Supplemental, but it need not be repeated.

Results Synopsis:

Endpoint	NOAEC	LOAEC
Adult Survival (Day 28)	119 ppm a.i.	>119 ppm a.i.
Reproduction (no. young/ female)	119 ppm a.i.	>119 ppm a.i.
Female Length (mm)	119 ppm a.i.	>119 ppm a.i.
Male Length (mm)	119 ppm a.i.	>119 ppm a.i.
Combined Length (mm)	59.3 ppm a.i.	119 ppm a.i.
Female Dry Weight (mg)	119 ppm a.i.	>119 ppm a.i.
Male Dry Weight (mg)	<8.08 ppm a.i.	8.08 ppm a.i.
Combined Dry Weight (mg)	119 ppm a.i.	>119 ppm a.i.
Female Wet Weight (mg)	119 ppm a.i.	>119 ppm a.i.
Male Wet Weight (mg)	119 ppm a.i.	>119 ppm a.i.
Combined Wet Weight (mg)	119 ppm a.i.	>119 ppm a.i.

8. ADEQUACY OF THE STUDY:

A. Classification: Supplemental

B. Rationale: Survival of male mysids following pairing were not provided; second-generation mysids were not observed daily for at least 4 days for survival, development, and behavior; and a NOAEC was not established.

C. Repairability: N/A

3

9. GUIDELINE DEVIATIONS:

I. The parental stock were apparently not maintained separately from the brood stock.

II. The temperature (23.6-26.8°C) was slightly lower than recommended (27°C).

III. The pH range (7.3-8.0) was slightly lower than recommended (7.6-8.2).

IV. Following pairing, the survival of males as well as reproductive females should have been recorded.

V. Except for survival, toxic effects of second-generation mysids were not addressed in the study.

VI. Terminal growth endpoints should have been evaluated using each sex. However, since the raw data were provided, the reviewer was able to statistically analyze terminal growth for each sex.

VII. A NOAEC was not established, because reductions in male weight were found at 8.08 ppm a.i., the lowest measured concentration studied.

10. SUBMISSION PURPOSE: This study was submitted to provide data on the toxicity of XDE-638 (penoxsulam) to the mysid life cycle for the purpose of chemical registration.

11. MATERIALS AND METHODS:

A. Test Organisms/Acclimation

Guideline Criteria	Reported Information
Species An estuarine shrimp species, preferably *Americamysis bahia*	*Americamysis bahia*
Source/Supplier	Juveniles were collected from in-house laboratory cultures (maintained since July 2001).

4

Guideline Criteria	Reported Information
Age at Beginning of Test <24 hours old	<24 hours old
Parental Acclimation Parental stock must be maintained separately from the brood culture in dilution water and under test conditions. Mysids should be in good health.	An isolated brood stock was apparently not maintained. The mysids were maintained under flow-through conditions, and were not treated for disease and were free of apparent disease, injuries, and abnormalities. Mortality was <3% during the 48 hours preceding the definitive study.
Parental Acclimation Period At least 14 days	Continuous
Brood Stock Test started with mysids from: - one brood stock, or - brood stock which has not obtained sexual maturity or had been maintained for >14 days in a laboratory with same food, water, temperature, and salinity used in the test.	At test initiation, juvenile mysids were collected from the culture stock that was maintained in the laboratory under the same conditions used in the definitive test.

B. Test System

Guideline Criteria	Reported Information
Source of Dilution Water May be natural (sterilized and filtered) or a commercial mixture; water must be free of pollutants.	Natural seawater collected at T.R. Wilbury Laboratories in Marblehead, MA, was adjusted to 15-17‰ salinity using deionized water. The dilution water was aerated, filtered, and UV-sterilized prior to use. Results of chemical characterization of the dilution water (December 2000) are provided in Table 1, p. 12.

5

Guideline Criteria	Reported Information
Does water support test animals without observable signs of stress?	Yes
Water Temperature 27°C for mysids - At test termination, mean-measured temperature for each chamber should be within 1°C of selected test temperature. - Must be within 3°C of the mean of the time-weighted averages. - Must not differ by >2°C between chambers during the same interval.	Target: 25 ± 2°C Actual range: 23.6-26.8°C (25.2°C mean) - Raw data not provided, so criteria were not assessed; however, the overall temperature range was within 3°C of the mean.
Salinity 15-30 ‰ - The difference between highest and lowest measured salinities should be less than 5 ‰.	15-17‰
pH 7.6 and 8.2	7.3-8.0
Dissolved Oxygen 60-100% saturation	6.6-7.7 mg/L (≥75% saturation).
Photoperiod 16-hr light/8-hr dark (14-hr light/10-hr dark also acceptable)	16 hours light, 8 hours dark, with a 15-minute transition period.
Test Chambers 1. Material: All glass, No. 316 stainless steel, or perflorocarbon plastic 2. Size: Typically 30 x 45 x 15 cm (20.25 L) 3. Fill depth: 10 cm	1. Glass aquaria 2. 21 x 40 x 25 cm (20 L) 3. 4- to 6-cm (up to 5 L fill volume).

Guideline Criteria	Reported Information
4. Were chambers identical and covered during the test?	4. Yes, loosely covered
Test Compartments (within chambers) - 250-mL glass beakers with side cutouts covered with nylon mesh or stainless steel screen, or - 90- or 140-mm id glass Petri dish bottoms with collars made of 200-250 µm mesh screen	- Test compartments were 10-cm diameter glass Petri dishes with 12-cm high collar of Nitex® screen. - Reproductive compartments were 6-cm glass petri dishes with 12-cm high collar of Nitex® screen.
Type of Dilution System Intermittent flow proportional diluters or continuous flow serial diluters should be used.	An intermittent-flow proportional diluter was used to deliver each concentration of the test substance and a negative (saltwater) control.
Toxicant Mixing 1. Mixing chamber is recommended but not required; aeration should not be used for mixing. 2. If a mixing chamber was not employed, was it demonstrated that the test solution was completely mixed before introduction into the test system? 3. Was flow splitting accuracy within 10%?	1. Not reported. 2. The diluter was in operation for approximately 50 hours prior to the introduction of mysids. 3. Not reported.
Flow Rate 1. 5-10 volume additions per 24 hours. 2. Did the flow rate maintain the toxicant level and the DO at ≥60% of saturation? 3. Were the meter systems calibrated before study and checked twice daily during test period?	1. 7.8 volume additions/day 2. Yes 3. Yes
Solvents - Acceptable solvents include triethylene glycol, methanol, acetone, and methanol.	No solvents were used.

7

Guideline Criteria	Reported Information
- Solvent should not exceed 0.1 mL/L in a flow-through system.	
Aeration Dilution water should be vigorously aerated, but the test tanks should not be aerated.	The dilution water was aeration prior to use. The test chambers were not aerated.

C. Test Design

Guideline Criteria	Reported Information
Duration of the Test Approximately 28 days. Was the test terminated within 7 days of the median time of first brood release in the controls?	28 days No, the study duration was adequate. The first brood release occurred on Day 16 (p. 14).
Nominal Concentrations Negative control, a solvent control (when applicable), and at least five treatment levels, one of which must adversely affect a life stage and one must not affect any life stage. The dilution factor should not be >50%.	Nominal test concentrations were 0 (negative control), 8.4, 16, 30, 60, and 120 ppm.
Distribution Number of mysids before pairing: Minimum of 15 mysids per compartment, 2 compartments per chamber, 2 chambers per concentration for a total of 60/treatment level. Number of mysids after pairing: ≥20 randomly selected pairs/treatment (excess males should be held in separate compartment in same treatment to replace paired males).	60 mysids/level: 15 mysids/compartment, 2 compartments/aquarium, and 2 replicate test aquaria/level. Up to 20 pair/level: 1 pair/compartment, up to 10 compartments/aquarium, and 2 replicate test aquaria/level. Extra, unpaired mysids were maintained in two extra compartments per aquarium.
Pairing Should be conducted when most of the mysids are sexually mature, usually 10-14 days after test initiation. All pairing should occur on the same day.	Female and male adults were paired on Day 14 and reproduction was monitored from Days 16 (first offspring produced) through 28.
Test organisms randomly or impartially assigned to test vessels?	Yes
Were treatments randomly assigned to individual test chamber locations?	Yes

9

Guideline Criteria	Reported Information
Feeding Mysids should be fed live brine shrimp nauplii at least once daily. 150 live brine shrimp nauplii per mysid per day or 75 twice a day is recommended.	Mysids were fed live brine shrimp *Artemia salina* nauplii, *ad libitum*, 3 times/day (150 to 600 *Artemia* per mysid per day) during the test, except during the final 24 hours of the test.
Counts Live adult mysids should be counted at initiation, at pairing, and daily after pairing. Live young must be counted and removed daily. Missing or impinged animals should be recorded.	Yes Yes Missing mysids were reported (one in control).
Controls Negative control and carrier control (when applicable) are required.	A negative saltwater control was used. No solvents were used.
Water Parameter Measurements 1. Temperature should be monitored daily in one chamber and at least three times in all chambers. 2. Salinity should be measured daily in at least one test vessel. 3. pH should be measured at the beginning, the end, and at least weekly during the test in the control vessels and highest test level. 4. Dissolved oxygen must be measured at each concentration at least once a week. **Chemical Analysis** Toxicant concentration must be measured in one chamber at each toxicant level every week.	1. Temperature was measured daily in each replicate test vessel, and continuously in one negative control test vessel. 2.- 4. Salinity, pH, and DO were measured daily in each replicate test vessel. Samples for HPLC analysis were collected from alternating replicate test vessels on

Guideline Criteria	Reported Information
	Days 0, 7, 14, 21, and 28.

12. REPORTED RESULTS

A. General Results

Guideline Criteria	Reported Information
Quality assurance and GLP compliance statements were included in the report?	Yes
Chemical Analysis For all test groups, a) the measured concentration of the test material should not be <50% of the time-weighted average measured concentration for >10% of the duration of the test, and b) the measured concentration should not be >30% of the time-weighted average measured concentration for >5% of the duration of the test.	Mean-measured concentrations were <0.0881 (LOQ, control), 8.08, 15.2, 29.4, 59.3, and 119 ppm a.i. (Table 2, p. 19). A low level of variability existed among sample results (all high-low ratios of 1.1).
Controls - Survival of the paired first-generation controls must be ≥70%. - ≥75% of the paired first-generation female controls produced young, or - The average number of young produced by the first-generation female controls was ≥3.	- All criteria met.
Data Endpoints Must Include 1. Survival of first-generation mysids, sex specified 2. Number of live young produced per female 3. Dry weight and length of each first	1. Total survival of first-generation mysids, and of females paired for reproduction. 2. Number of live young produced per female per day. 3. Weights (wet and dry) and length of

Guideline Criteria	Reported Information
generation mysid alive at the end of the test, sex specified **Data Endpoints Should Also Include** 4. Incidence of morphological findings. 5. Survival, development, and behavior of second-generation mysids for at least 4 days.	each first generation living at end of test, but not sex specific (raw data were sex-specific; however, data were combined by the study authors for statistical analyses). 4. Incidence of sub-lethal effects pertaining to behavior or appearance. 5. Survival of second-generation mysids.
Raw data must include 1. Survival of first-generation mysids, sex specified 2. Number of live young produced per female 3. Terminal weight and length measurements, individual and sex specified	1. Daily survival of first-generation mysids, not sex-specific, and of reproductive females (Days 16-28). 2. Number of live young produced (Days 16-28). 3. Terminal weight (wet and dry) and length of individuals, individual and sex specified.

Effects Data

Concentration (ppm a.i.)		Survival Day 14	Survival Day 28			Reproduction, Days 16-28	
Nominal	Mean Measured (% nominal)	_ and _	_	_[1]	_ and _	Total No. of Young[2]	No. Young Per Female
Control	<0.0881	93 (56/60)	NR	100 (17/17)	85 (49/59)	69	4.3
8.4	8.08 (96)	98 (59/60)	NR	100 (20/20)	83 (50/60)	54	2.7
16	15.2 (95)	93 (56/60)	NR	85 (17/20)	68 (41/60)	14	0.8
30	29.4 (98)	95 (57/60)	NR	65 (11/17)	55 (33/60)	32	2.2
60	59.3 (99)	90 (54/60)	NR	85 (17/20)	73 (44/60)	13	0.8
120	119 (99)	93 (56/60)	NR	95 (19/20)	75 (45/60)	1	0.1

NR = Survival of male mysids was not reported and could not be derived from the provided data tables by the reviewer.
[1] Mortality of females following pairing.
[2] Reviewer-calculated from replicate data (Table A.3, p. 29).

Growth, Day 28								
Mean Length, mm			Mean Wet Weight, mg			Mean Dry Weight, mg		
_	_	_ and _	_	_	_ and _	_	_	_ and _
9.1	9.3	9.2	2.33	3.24	2.79	0.64	0.74	0.67
9.0	9.0	9.0	3.26	4.26	3.71	0.50	0.73	0.60
9.0	9.2	9.1	3.92	4.46	4.28	0.51	0.76	0.66
8.8	8.9	8.8	4.15	3.92	3.90	0.54	0.61	0.57
9.1	8.5	8.9	3.62	3.19	3.43	0.46	0.70	0.56*
8.4	8.4	8.4*	1.95	2.74	2.36	0.48	0.68	0.59

*Statistically-different (α=0.05) from control; only combined-sexes data were statistically analyzed by the study authors.

13

B. Statistical Results:

Statistical analyses were performed on survival of the first-generation mysids (Day 28), number of young per surviving female, mean terminal length (combined sexes), and mean terminal wet and dry weights (combined sexes) via TOXSTAT statistical software (Version 3.3; Gulley et al., 1990). Analyses included Bartlett's Test (evaluation of homogeneity) and Chi square test (assessment of normality). ANOVA and Dunnett's or William's tests were then used to compare treatments to the control. The NOAEC and LOAEC were determined from significance data. The MATC was calculated as the geometric mean of the NOAEC and LOAEC. Mean-measured concentrations were used for all estimations.

Most sensitive endpoint: Dry weight (combined sexes).

Results Synopsis

Endpoint	Method[1]	NOAEC	LOAEC	MATC
Survival (Day 28)	ANOVA, Dunnett's or Williams	119 ppm a.i.	>119 ppm a.i.	>119 ppm a.i.
Reproduction (no. young/ female)	ANOVA, Dunnett's or Williams	119 ppm a.i.	>119 ppm a.i.	>119 ppm a.i.
Length (mm)	ANOVA, Dunnett's or Williams	59.3 ppm a.i.	119 ppm a.i.	84.0 ppm a.i.
Wet Weight (g)	ANOVA, Dunnett's or Williams	119 ppm a.i.	>119 ppm a.i.	>119 ppm a.i.
Dry Weight (g)	ANOVA, Dunnett's or Williams	29.4 ppm a.i.	59.3 ppm a.i.	41.8 ppm a.i.

[1] The statistical method was either the Dunnett's or the William's Test (not specified).

13. VERIFICATION OF STATISTICAL RESULTS:

Statistical Method: Endpoints statistically assessed included percent survival (Day 28), reproduction (number of young per female), and terminal lengths, and wet and dry weights. Length, wet weight, and dry weight data were analyzed for males and females separately, as well as for combined sexes. With the exception of percent survival and male and female length, data for all endpoints were determined to be normally distributed

and the variances were homogeneous. The NOAEC and LOAEC for these endpoints were determined using ANOVA, and if necessary, followed by Dunnett's (non-monotonic response) or William's (monotonic response) tests. The NOAEC and LOAEC for data which did not meet the assumptions of ANOVA (and which could not be transformed to satisfy these assumptions) were determined using the non-parametric Kruskal-Wallis test. These analyses were conducted using TOXSTAT statistical software using mean-measured concentrations.

Most sensitive endpoint: Male dry weights.

Results Synopsis

Endpoint	Method	NOAEC	LOAEC
Adult Survival (Day 28)	Kruskal-Wallis	119 ppm a.i.	>119 ppm a.i.
Reproduction (no. young/ female)	ANOVA/Dunnett's	119 ppm a.i	>119 ppm a.i.
Female Length (mm)	Kruskal-Wallis	119 ppm a.i.	>119 ppm a.i.
Male Length (mm)	Kruskal-Wallis	119 ppm a.i.	>119 ppm a.i.
Combined Length (mm)	ANOVA/Dunnett's	59.3 ppm a.i.	119 ppm a.i.
Female Dry Weight (mg)	ANOVA/Dunnett's	119 ppm a.i.	>119 ppm a.i.
Male Dry Weight (mg)	ANOVA/Dunnett's	<8.08 ppm a.i.	8.08 ppm a.i.
Combined Dry Weight (mg)	ANOVA/Dunnett's	119 ppm a.i.	>119 ppm a.i.
Female Wet Weight (mg)	ANOVA/Dunnett's	119 ppm a.i.	>119 ppm a.i.
Male Wet Weight (mg)	ANOVA/Dunnett's	119 ppm a.i.	>119 ppm a.i.
Combined Wet Weight (mg)	ANOVA/Dunnett's	119 ppm a.i.	>119 ppm a.i.

14. REVIEWER'S COMMENTS:

The reviewer's conclusions differed from the study authors'. The reviewer's analysis included sex-specific terminal growth measurements, and determined that male dry

weight was the most sensitive endpoint, with significant reductions from control occurring at all treatment levels. The study authors' analysis determined that dry weight (male and females combined) was the most sensitive endpoint, with significant reductions occurring only at the 59.3 ppm a.i. treatment level. The study authors did not analyze growth parameters separately by sex and, so, did not detect the extent to which male dry weight was adversely affected by treatment with XDE-638. The reviewer's results are reported in the Conclusions section.

This study is scientifically sound. However, deviations from FIFRA Guideline §72-4c included the failure to report survival of first-generation male mysids (following pairing), failure to observed second-generation mysids for 4 days, and failure to establish a NOAEC. As a result, this study does not fulfill the guideline requirement for an aquatic invertebrate life-cycle toxicity test using an estuarine shrimp and is classified Supplemental, but it need not be repeated.

No insoluble test material was observed in any test aquarium during the study (p. 18).

One control mysid was lost during pairing transfer.

The LOD was 0.0264 ppm a.i., and the LOQ was 0.0881 ppm a.i. (p. 16).

This study conformed with Good Laboratory Practice Standards as published by the U.S. Environmental Protection Agency, Office of Pesticide Programs in 40 CFR Part. 160; OECD Principles for Good Laboratory Practice; and Japan MAFF Good Laboratory Practice Standards for Toxicological Studies on Agricultural Chemicals. A Quality Assurance Statement was provided.

16

15. REFERENCES:

ASTM. 1990. Guide for Conducting Life-Cycle Toxicity Test with Saltwater Mysids. Designation E 1191-90.

Gulley, D.D., *et al.* 1990. TOXSTAT Version 3.3. Fish Physiology and Toxicology Laboratory, University of Wyoming, Laramie, Wyoming.

Japan MAFF. 1984. Good Laboratory Practice Standard. 59 NohSan No. 3850.

OECD. 1997. OECD Guidelines for Testing of Chemicals. Annex 2. OECD Principles of Good Laboratory Practice. [C(97)186/Final].

U.S. EPA. 1985. Standard Evaluation Procedure, Fish Early Life Stage. Hazard Evaluation Division, Office of Pesticide Programs, Washington, D.C.

U.S. EPA. 1988. Pesticide Assessment Guidelines. Subdivision E, Hazard Evaluation: Wildlife and Aquatic Organisms. 72-4. Fish Early Life Stage and Aquatic Invertebrate Life-Cycle Studies. Ecological Effects Branch, Hazard Evaluation Division, Office of Pesticide Programs, Washington, D.C. Draft, March 1988.

U.S. EPA. 1993. 40 CFR Part 160. Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); Good Laboratory Practice Standards. Final Rule.

16. RESULTS OF STATISTICAL VERIFICATION:

% survival
File: 1028s Transform: NO TRANSFORM

KRUSKAL-WALLIS ANOVA BY RANKS - TABLE 1 OF 2

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	RANK SUM
1	control	81.500	81.500	17.000
2	8.08	83.000	83.000	20.000
3	15.2	68.000	68.000	12.000
4	29.4	55.000	55.000	6.000
5	59.3	73.500	73.500	10.500
6	119	75.000	75.000	12.500

Calculated H Value = 4.825 Critical H Value Table = 11.070
Since Calc H < Crit H FAIL TO REJECT Ho:All groups are equal.

% survival
File: 1028s Transform: NO TRANSFORM

DUNNS MULTIPLE COMPARISON - KRUSKAL-WALLIS - TABLE 2 OF 2

GROUP	IDENTIFICATION	TRANSFORMED MEAN	ORIGINAL MEAN	GROUP 0 0 0 0 0 0 4 3 5 6 1 2
4	29.4	55.000	55.000	\
3	15.2	68.000	68.000	. \
5	59.3	73.500	73.500	. . \
6	119	75.000	75.000	. . . \
1	control	81.500	81.500	. . . . \
2	8.08	83.000	83.000	. . . . . \

* = significant difference (p=0.05) . = no significant difference
Table q value (0.05,6) = 2.936 SE = 3.548

young/female/day
File: 1028y Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	24.477	4.895	1.863
Within (Error)	6	15.760	2.627	

18

Total	11	40.237

Critical F value = 4.39 (0.05,5,6)
Since F < Critical F FAIL TO REJECT Ho:All groups equal

young/female/day
File: 1028y Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 1 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	control	4.250	4.250		
2	8.08	2.700	2.700	0.956	
3	15.2	0.750	0.750	2.159	
4	29.4	2.200	2.200	1.265	
5	59.3	0.750	0.750	2.159	
6	119	0.050	0.050	2.591	

Dunnett table value = 2.83 (1 Tailed Value, P=0.05, df=6,5)

young/female/day
File: 1028y Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 2 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	control	2			
2	8.08	2	4.587	107.9	1.550
3	15.2	2	4.587	107.9	3.500
4	29.4	2	4.587	107.9	2.050
5	59.3	2	4.587	107.9	3.500
6	119	2	4.587	107.9	4.200

young/female/day
File: 1028y Transform: NO TRANSFORMATION

WILLIAMS TEST (Isotonic regression model) TABLE 1 OF 2

GROUP	IDENTIFICATION	N	ORIGINAL MEAN	TRANSFORMED MEAN	ISOTONIZED MEAN

19

1	control	2	4.250	4.250	4.250
2	8.08	2	2.700	2.700	2.700
3	15.2	2	0.750	0.750	1.475
4	29.4	2	2.200	2.200	1.475
5	59.3	2	0.750	0.750	0.750
6	119	2	0.050	0.050	0.050

young/female/day
File: 1028y Transform: NO TRANSFORMATION

WILLIAMS TEST (Isotonic regression model) TABLE 2 OF 2

IDENTIFICATION	ISOTONIZED MEAN	CALC. WILLIAMS	SIG	TABLE P=.05 WILLIAMS	DEGREES OF FREEDOM
control	4.250				
8.08	2.700	0.956		1.94	k= 1, v= 6
15.2	1.475	1.712		2.06	k= 2, v= 6
29.4	1.475	1.712		2.10	k= 3, v= 6
59.3	0.750	2.160	*	2.12	k= 4, v= 6
119	0.050	2.591	*	2.13	k= 5, v= 6

s = 1.621
Note: df used for table values are approximate when v > 20.

total length (male and female combined)
File: 1028l Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.730	0.146	4.563
Within (Error)	6	0.190	0.032	
Total	11	0.920		

Critical F value = 4.39 (0.05,5,6)
Since F > Critical F REJECT Ho:All groups equal

total length
File: 1028l Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 1 OF 2 Ho:Control<Treatment

20

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	control	9.150	9.150		
2	8.08	9.000	9.000	0.839	
3	15.2	9.100	9.100	0.280	
4	29.4	8.900	8.900	1.398	
5	59.3	8.850	8.850	1.677	
6	119	8.400	8.400	4.193	*

Dunnett table value = 2.83 (1 Tailed Value, P=0.05, df=6,5)

total length
File: 1028l Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 2 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	control	2			
2	8.08	2	0.506	5.5	0.150
3	15.2	2	0.506	5.5	0.050
4	29.4	2	0.506	5.5	0.250
5	59.3	2	0.506	5.5	0.300
6	119	2	0.506	5.5	0.750

total length
File: 1028l Transform: NO TRANSFORMATION

WILLIAMS TEST (Isotonic regression model) TABLE 1 OF 2

GROUP	IDENTIFICATION	ORIGINAL N	ORIGINAL MEAN	TRANSFORMED MEAN	ISOTONIZED MEAN
1	control	2	9.150	9.150	9.150
2	8.08	2	9.000	9.000	9.050
3	15.2	2	9.100	9.100	9.050
4	29.4	2	8.900	8.900	8.900
5	59.3	2	8.850	8.850	8.850
6	119	2	8.400	8.400	8.400

total length
File: 1028l Transform: NO TRANSFORMATION

31

WILLIAMS TEST (Isotonic regression model) TABLE 2 OF 2

IDENTIFICATION	ISOTONIZED MEAN	CALC. WILLIAMS	SIG	TABLE P=.05 WILLIAMS	DEGREES OF FREEDOM
control	9.150				
8.08	9.050	0.562		1.94	k= 1, v= 6
15.2	9.050	0.562		2.06	k= 2, v= 6
29.4	8.900	1.405		2.10	k= 3, v= 6
59.3	**8.850**	**1.686**		**2.12**	**k= 4, v= 6**
119	8.400	4.214	*	2.13	k= 5, v= 6

s = 0.178
Note: df used for table values are approximate when v > 20.

length females
File: 1028lf Transform: NO TRANSFORMATION

KRUSKAL-WALLIS ANOVA BY RANKS - TABLE 1 OF 2

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	RANK SUM
1	control	9.300	9.300	21.000
2	8.08	9.050	9.050	16.500
3	15.2	9.150	9.150	17.500
4	29.4	8.900	8.900	13.000
5	59.3	8.500	8.500	5.000
6	119	8.450	8.450	5.000

Calculated H Value = 8.980 Critical H Value Table = 11.070
Since Calc H < Crit H FAIL TO REJECT Ho:All groups are equal.

length females
File: 1028lf Transform: NO TRANSFORMATION

DUNNS MULTIPLE COMPARISON - KRUSKAL-WALLIS - TABLE 2 OF 2

GROUP	IDENTIFICATION	TRANSFORMED MEAN	ORIGINAL MEAN	GROUP 0 0 0 0 0 0 6 5 4 2 3 1
6	119	8.450	8.450	\
5	59.3	8.500	8.500	. \
4	29.4	8.900	8.900	. . \
2	8.08	9.050	9.050	. . . \
3	15.2	9.150	9.150	. . . . \
1	control	9.300	9.300	. . . . . \

* = significant difference (p=0.05) . = no significant difference
Table q value (0.05,6) = 2.936 SE = 3.536

length males
File: 1028lm Transform: NO TRANSFORM

KRUSKAL-WALLIS ANOVA BY RANKS - TABLE 1 OF 2

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	RANK SUM
1	control	9.100	9.100	16.000
2	8.08	8.950	8.950	13.000
3	15.2	8.950	8.950	13.000
4	29.4	8.800	8.800	13.000
5	59.3	9.100	9.100	20.000
6	119	8.400	8.400	3.000

Calculated H Value = 6.229 Critical H Value Table = 11.070
Since Calc H < Crit H FAIL TO REJECT Ho:All groups are equal.

length males
File: 1028lm Transform: NO TRANSFORM

DUNNS MULTIPLE COMPARISON - KRUSKAL-WALLIS - TABLE 2 OF 2

GROUP	IDENTIFICATION	TRANSFORMED MEAN	ORIGINAL MEAN	GROUP 000000 642351
6	119	8.400	8.400	\
4	29.4	8.800	8.800	. \
2	8.08	8.950	8.950	.. \
3	15.2	8.950	8.950	... \
5	59.3	9.100	9.100	.... \
1	control	9.100	9.100	..... \

* = significant difference (p=0.05) . = no significant difference
Table q value (0.05,6) = 2.936 SE = 3.561

wet weight (male and female combined)
File: 1028ww Transform: NO TRANSFORMATION

ANOVA TABLE

23

SOURCE	DF	SS	MS	F
Between	5	5.308	1.062	5.033
Within (Error)	6	1.267	0.211	
Total	11	6.576		

Critical F value = 4.39 (0.05,5,6)
Since F > Critical F REJECT Ho:All groups equal

wet weight
File: 1028ww Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 1 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	control	2.740	2.740		
2	8.08	3.710	3.710	-2.112	
3	15.2	4.225	4.225	-3.233	
4	29.4	3.990	3.990	-2.721	
5	59.3	3.450	3.450	-1.546	
6	119	2.355	2.355	0.838	

Dunnett table value = 2.83 (1 Tailed Value, P=0.05, df=6,5)

wet weight
File: 1028ww Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 2 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	control	2			
2	8.08	2	1.300	47.4	-0.970
3	15.2	2	1.300	47.4	-1.485
4	29.4	2	1.300	47.4	-1.250
5	59.3	2	1.300	47.4	-0.710
6	119	2	1.300	47.4	0.385

wet weight
File: 1028ww Transform: NO TRANSFORMATION

WILLIAMS TEST (Isotonic regression model) TABLE 1 OF 2

GROUP	IDENTIFICATION	N	ORIGINAL MEAN	TRANSFORMED MEAN	ISOTONIZED MEAN
1	control	2	2.740	2.740	3.666
2	8.08	2	3.710	3.710	3.666
3	15.2	2	4.225	4.225	3.666
4	29.4	2	3.990	3.990	3.666
5	59.3	2	3.450	3.450	3.450
6	119	2	2.355	2.355	2.355

wet weight
File: 1028ww Transform: NO TRANSFORMATION

WILLIAMS TEST (Isotonic regression model) TABLE 2 OF 2

IDENTIFICATION	ISOTONIZED MEAN	CALC. WILLIAMS	SIG	TABLE WILLIAMS P=.05	DEGREES OF FREEDOM
control	3.666				
8.08	3.666	2.015	*	1.94	k= 1, v= 6
15.2	3.666	2.015		2.06	k= 2, v= 6
29.4	3.666	2.015		2.10	k= 3, v= 6
59.3	3.450	1.545		2.12	k= 4, v= 6
119	2.355	0.838		2.13	k= 5, v= 6

s = 0.460
Note: df used for table values are approximate when v > 20.

wet weight males
File: 1028wm Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	7.848	1.570	16.702
Within (Error)	6	0.564	0.094	
Total	11	8.411		

Critical F value = 4.39 (0.05,5,6)
Since F > Critical F REJECT Ho:All groups equal

25

wet weight males
File: 1028wm Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 1 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	control	2.330	2.330		
2	8.08	3.265	3.265	-3.050	
3	15.2	3.925	3.925	-5.202	
4	29.4	4.150	4.150	-5.936	
5	59.3	3.615	3.615	-4.191	
6	119	1.950	1.950	1.239	

Dunnett table value = 2.83 (1 Tailed Value, P=0.05, df=6,5)

wet weight males
File: 1028wm Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 2 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	control	2			
2	8.08	2	0.868	37.2	-0.935
3	15.2	2	0.868	37.2	-1.595
4	29.4	2	0.868	37.2	-1.820
5	59.3	2	0.868	37.2	-1.285
6	119	2	0.868	37.2	0.380

wet weight males
File: 1028wm Transform: NO TRANSFORMATION

WILLIAMS TEST (Isotonic regression model) TABLE 1 OF 2

GROUP	IDENTIFICATION	N	ORIGINAL MEAN	TRANSFORMED MEAN	ISOTONIZED MEAN
1	control	2	2.330	2.330	3.457
2	8.08	2	3.265	3.265	3.457
3	15.2	2	3.925	3.925	3.457
4	29.4	2	4.150	4.150	3.457
5	59.3	2	3.615	3.615	3.457
6	119	2	1.950	1.950	1.950

wet weight males
File: 1028wm Transform: NO TRANSFORMATION

WILLIAMS TEST (Isotonic regression model) TABLE 2 OF 2

IDENTIFICATION	ISOTONIZED MEAN	CALC. WILLIAMS	SIG	TABLE WILLIAMS P=.05	DEGREES OF FREEDOM
control	3.457				
8.08	3.457	3.677	*	1.94	k= 1, v= 6
15.2	3.457	3.677	*	2.06	k= 2, v= 6
29.4	3.457	3.677	*	2.10	k= 3, v= 6
59.3	3.457	3.677	*	2.12	k= 4, v= 6
119	1.950	1.240		2.13	k= 5, v= 6

s = 0.307
Note: df used for table values are approximate when v > 20.

wet weight females
File: 1028wf Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	4.637	0.927	1.843
Within (Error)	6	3.015	0.503	
Total	11	7.652		

Critical F value = 4.39 (0.05,5,6)
Since F < Critical F FAIL TO REJECT Ho:All groups equal

wet weight females
File: 1028wf Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 1 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	control	3.240	3.240		
2	8.08	4.255	4.255	-1.431	
3	15.2	4.465	4.465	-1.727	
4	29.4	3.920	3.920	-0.959	

5	59.3	3.190	3.190	0.070
6	119	2.735	2.735	0.712

Dunnett table value = 2.83 (1 Tailed Value, P=0.05, df=6,5)

wet weight females
File: 1028wf Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 2 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	control	2			
2	8.08	2	2.007	61.9	-1.015
3	15.2	2	2.007	61.9	-1.225
4	29.4	2	2.007	61.9	-0.680
5	59.3	2	2.007	61.9	0.050
6	119	2	2.007	61.9	0.505

wet weight females
File: 1028wf Transform: NO TRANSFORMATION

WILLIAMS TEST (Isotonic regression model) TABLE 1 OF 2

GROUP	IDENTIFICATION	ORIGINAL N	ORIGINAL MEAN	TRANSFORMED MEAN	ISOTONIZED MEAN
1	control	2	3.240	3.240	3.987
2	8.08	2	4.255	4.255	3.987
3	15.2	2	4.465	4.465	3.987
4	29.4	2	3.920	3.920	3.920
5	59.3	2	3.190	3.190	3.190
6	119	2	2.735	2.735	2.735

wet weight females
File: 1028wf Transform: NO TRANSFORMATION

WILLIAMS TEST (Isotonic regression model) TABLE 2 OF 2

IDENTIFICATION	ISOTONIZED MEAN	CALC. WILLIAMS	SIG P=.05	TABLE WILLIAMS	DEGREES OF FREEDOM
control	3.987				
8.08	3.987	1.053		1.94	k= 1, v= 6

15.2	3.987	1.053	2.06	k= 2, v= 6
29.4	3.920	0.959	2.10	k= 3, v= 6
59.3	3.190	0.071	2.12	k= 4, v= 6
119	2.735	0.712	2.13	k= 5, v= 6

s = 0.709
Note: df used for table values are approximate when v > 20.

dry weight (males and females combined)
File: 1028dw Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.020	0.004	2.000
Within (Error)	6	0.010	0.002	
Total	11	0.029		

Critical F value = 4.39 (0.05,5,6)
Since F < Critical F FAIL TO REJECT Ho:All groups equal

dry weight
File: 1028dw Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 1 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	control	0.675	0.675		
2	8.08	0.605	0.605	1.565	
3	15.2	0.650	0.650	0.559	
4	29.4	0.575	0.575	2.236	
5	59.3	0.560	0.560	2.571	
6	119	0.590	0.590	1.901	

Dunnett table value = 2.83 (1 Tailed Value, P=0.05, df=6,5)

dry weight
File: 1028dw Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 2 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	control	2			
2	8.08	2	0.127	18.7	0.070
3	15.2	2	0.127	18.7	0.025
4	29.4	2	0.127	18.7	0.100
5	59.3	2	0.127	18.7	0.115
6	119	2	0.127	18.7	0.085

dry weight
File: 1028dw Transform: NO TRANSFORMATION

WILLIAMS TEST (Isotonic regression model) TABLE 1 OF 2

GROUP	IDENTIFICATION	N	ORIGINAL MEAN	TRANSFORMED MEAN	ISOTONIZED MEAN
1	control	2	0.675	0.675	0.675
2	8.08	2	0.605	0.605	0.628
3	15.2	2	0.650	0.650	0.628
4	29.4	2	0.575	0.575	0.575
5	59.3	2	0.560	0.560	0.575
6	119	2	0.590	0.590	0.575

dry weight
File: 1028dw Transform: NO TRANSFORMATION

WILLIAMS TEST (Isotonic regression model) TABLE 2 OF 2

IDENTIFICATION	ISOTONIZED MEAN	CALC. WILLIAMS	SIG	TABLE WILLIAMS P=.05	DEGREES OF FREEDOM
control	0.675				
8.08	0.628	1.191		1.94	k= 1, v= 6
15.2	0.628	1.191		2.06	k= 2, v= 6
29.4	0.575	2.508	*	2.10	k= 3, v= 6
59.3	0.575	2.508	*	2.12	k= 4, v= 6
119	0.575	2.508	*	2.13	k= 5, v= 6

s = 0.040
Note: df used for table values are approximate when v > 20.

dry weight males
File: 1028dm Transform: NO TRANSFORMATION

30

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.0424	0.0085	12.143
Within (Error)	6	0.0044	0.0007	
Total	11	0.0468		

Critical F value = 4.39 (0.05,5,6)
Since F > Critical F REJECT Ho:All groups equal

dry weight males
File: 1028dm Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 1 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	control	0.645	0.645		
2	8.08	0.505	0.505	5.292	*
3	15.2	0.510	0.510	5.103	*
4	29.4	0.535	0.535	4.158	*
5	59.3	0.465	0.465	6.803	*
6	119	0.475	0.475	6.425	*

Dunnett table value = 2.83 (1 Tailed Value, P=0.05, df=6,5)

dry weight males
File: 1028dm Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 2 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	control	2			
2	8.08	2	0.075	11.6	0.140
3	15.2	2	0.075	11.6	0.135
4	29.4	2	0.075	11.6	0.110
5	59.3	2	0.075	11.6	0.180
6	119	2	0.075	11.6	0.170

31

dry weight males
File: 1028dm Transform: NO TRANSFORMATION

WILLIAMS TEST (Isotonic regression model) TABLE 1 OF 2

GROUP	IDENTIFICATION	N	ORIGINAL MEAN	TRANSFORMED MEAN	ISOTONIZED MEAN
1	control	2	0.645	0.645	0.645
2	8.08	2	0.505	0.505	0.517
3	15.2	2	0.510	0.510	0.517
4	29.4	2	0.535	0.535	0.517
5	59.3	2	0.465	0.465	0.470
6	119	2	0.475	0.475	0.470

dry weight males
File: 1028dm Transform: NO TRANSFORMATION

WILLIAMS TEST (Isotonic regression model) TABLE 2 OF 2

IDENTIFICATION	ISOTONIZED MEAN	CALC. WILLIAMS	SIG	TABLE P=.05 WILLIAMS	DEGREES OF FREEDOM
control	0.645				
8.08	0.517	4.718	*	1.94	k= 1, v= 6
15.2	0.517	4.718	*	2.06	k= 2, v= 6
29.4	0.517	4.718	*	2.10	k= 3, v= 6
59.3	0.470	6.433	*	2.12	k= 4, v= 6
119	0.470	6.433	*	2.13	k= 5, v= 6

s = 0.027
Note: df used for table values are approximate when v > 20.

dry weight females
File: 1028df Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.028	0.006	0.750
Within (Error)	6	0.049	0.008	
Total	11	0.077		

Critical F value = 4.39 (0.05,5,6)

32

Since F < Critical F FAIL TO REJECT Ho:All groups equal

dry weight females
File: 1028df Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 1 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	control	0.740	0.740		
2	8.08	0.730	0.730	0.112	
3	15.2	0.755	0.755	-0.168	
4	29.4	0.610	0.610	1.453	
5	59.3	0.705	0.705	0.391	
6	119	0.680	0.680	0.671	

Dunnett table value = 2.83 (1 Tailed Value, P=0.05, df=6,5)

dry weight females
File: 1028df Transform: NO TRANSFORMATION

DUNNETTS TEST - TABLE 2 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	control	2			
2	8.08	2	0.253	34.2	0.010
3	15.2	2	0.253	34.2	-0.015
4	29.4	2	0.253	34.2	0.130
5	59.3	2	0.253	34.2	0.035
6	119	2	0.253	34.2	0.060

dry weight females
File: 1028df Transform: NO TRANSFORMATION

WILLIAMS TEST (Isotonic regression model) TABLE 1 OF 2

GROUP	IDENTIFICATION	N	ORIGINAL MEAN	TRANSFORMED MEAN	ISOTONIZED MEAN
1	control	2	0.740	0.740	0.742
2	8.08	2	0.730	0.730	0.742
3	15.2	2	0.755	0.755	0.742
4	29.4	2	0.610	0.610	0.665

5	59.3	2	0.705	0.705	0.665
6	119	2	0.680	0.680	0.665

dry weight females
File: 1028df Transform: NO TRANSFORMATION

WILLIAMS TEST (Isotonic regression model) TABLE 2 OF 2

IDENTIFICATION	ISOTONIZED MEAN	CALC. WILLIAMS	SIG	TABLE P=.05 WILLIAMS	DEGREES OF FREEDOM
control	0.742				
8.08	0.742	0.018		1.94	k= 1, v= 6
15.2	0.742	0.018		2.06	k= 2, v= 6
29.4	0.665	0.826		2.10	k= 3, v= 6
59.3	0.665	0.826		2.12	k= 4, v= 6
119	0.665	0.826		2.13	k= 5, v= 6

s = 0.091
Note: df used for table values are approximate when v > 20.