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Data Evaluation Report
Ecological Effects Branch

1. **Chemical:** Imazapyr

2. **Test Substance:** AC 243,997, Lot No. 4866-62 received from Boughton/N. Lake. Labeled as 99.5%

3. **Study Type:** Twenty One Day Flow through Study with *Daphnia magna*

4. **Study Identification:**
   Study Author: Manning, Steve C..
   Study Laboratory: Environmental Science & Engineering, Gainesville, Fla.
   Study Dates: Feb 12 to Mar 8, 1988
   Study Identification: ESE No. 87384-0500-2130
   Sponsor: American Cyanamid Co.
   EPA Identification: MRID 413158-05

5. **Reviewed by:** Brian Montague, Fisheries Biologist
   Ecological Effects Branch
   Environmental Fate and Effects Division
   Brian Montague 5/26/92

6. **Approved by:** Les Touart, Supervisory Biologist
   Ecological Effects Branch
   Environmental Fate and Effects Division
   (H7507C)
   6-2-92

7. **Conclusions:** This study was conducted under sound scientific methodology. At residue levels of 97.1 mg/L there were no apparent effects on the growth or reproduction of Daphnia magna over the 21 days of continous exposure. The MATC and the NOEL are therefore ≥ 97.1 mg/L.

8. **Recommendations:** N/A

9. **Submission Purpose:** Submitted to satisfy chronic invertebrate testing guidelines requirements for reregistration of Imazapyr.

10. **Test Protocol and Design:** Protocol was based on ASTM recommendations, ESE protocol titled "Chronic Toxicity of AC 243,997 to the Water Flea, *Daphnia magna* under Flow Through Conditions", and EPA methodologies expressed in manual 600/9-78-010 (EPA 1978).

Study Methods and Procedures: Test Organisms were *Daphnia magna* obtained from continuous cultures maintained at the laboratory. First instar (<26 hours old) daphnids were obtained and isolated in 100% dilution water for 96 hours prior to exposure initiation. Cultures were fed trout chow and yeast supplemented with Selanastrum capricornutum (twice weekly at 12-15 ml per vessel). Algae suspensions were fed automatically to each individual aquaria. 1 ml. of yeast-Trout Chow mixture and one ml of algae suspension were fed twice daily as supplemental feedings. 10 organisms were placed in each replicate vessel(4 replicates per treatment level).

Dilution water was well water from ESE's own well. The water was aerated to near saturation and cooled to 20°C prior to use. pH of well water was 7.8, TOC-50.9 mg/L, with total NH_3 -NH_4 of <0.010 mg/L, as Nitrogen. Filterable solids were 7.0 mg/L. Hardness was 200-270 mg/L as $CaCO_3$.

Stock test solutions were prepared by addition of 65.96 grams of the test substance to 100 ml of dilution water. This solution was recirculated within the toxicant delivery box by peristaltic pump prior to delivery to the diluter mixing chamber.

Four replicate glass crystallization dishes covered with overflow screens served as test vessels in each of the 6 test levels. Each vessel contained 340 ml of test solution. A Mount and Brungs type proportional diluter was used to provide a flow rate of approximately 35 volume additions/day to each test vessel. Concentrations increased by 50% for each of the 5 test levels with nominal levels estimated to be 6.25, 12.5, 25.0, 50.0, and 100 mg/L. Water and ambient temperature were maintained at 20°C. A 16D/8N photoperiod was maintained with a 15 minute transition period. Concentration samples were taken on days 0, 4, 6, 11, 14, 18, and 21 during the test. Samples were removed from 2 of the four replicate vessels on each sample date. These were analyzed using HPLC methodology. Recovery rates averaged above 91% of the nominal estimated concentrations.

Test organisms were monitored daily for survival and behavioral effects. Reproduction was monitored from day 6 (first reproductive day) until termination. Growth of first generation daphnids was determined at exposure termination by length and dry weight(1 hour at 100°C) measurement.

11. **Reported Test Results:** The concentration analysis yielded mean measured concentrations of 5.73, 11.7, 23.8, 45.6, and 97.1 mg/L, respectively. No contaminants were detected in control vesels.

Mortality means(replicate range in parenthesis) were 12.5(0-30)% for controls, 7.5(10-30) % for the 5.73 mg/L group, 17.5(10-30)% for the 11.7 mg/L group, 15(10-30)% for the 23.5 mg/L group, 17.5(0-30)% for the 45.6 mg/L group and 15(0-20)% for the 97.1 mg/L test group.

Mean 21 day production of young for controls was 48.1 offspring per adult. Twenty one day production of young per adult daphnid for treatment levels was 41.8, 38.0, 36.8, 42.3, and 59.0 for the 5.73 ppm, 11.7 ppm, 23.8 ppm, 45.6 ppm, and 97.1 ppm test levels, respectively.

Mean length of first generation daphnia after 21 days of exposure were reported as 3.73 mm, 3.77 mm, 3.67 mm, 3.75 mm, 3.77 mm, and 4.10 mm for controls, 5.73 ppm, 11.7 ppm, 23.8 ppm, 45.6 ppm, and 97.1 ppm treatment levels, respectively.

Mean 21 day, dry weights of daphnia were 1.34.6 ug. 179.1 ug, 152.7 ug, 163.8 ug, 185.2 ug, and 228.5 ug for controls, 5.7 ppm, 11.7 ppm, 23.8 ppm, 45/6 ppm, and 97.1 ppm test concentrations respectively.

Water quality parameters reported dissolved O_2 above 5.6 mg/L at all times (equivalent to 61% saturation). pH ranged from 7.4 to 7.9. It is reported that one replicate control vessel fell 4.8 mg/l O_2 on day 2, due to over feeding. This returned to 78% saturation on the following day's reading. Hardness ranged from a low of 211 to high of 245 mg/l as $CaCO_3$, Alkalinity from a low of 191 to a high of 222 mg/L as $CaCO_3$, and conductivity of from 240 to 400 microhms/cm^2.

Deviations from acceptable protocol occurred on days, 4,7, and 8 and 9 of the study due to failure of the water chilling unit resulting in departures of +3°C from the mean of 20°C. All other days temperature was 20 ± 1°C.

12. **Study Author's Conclusions:** "Exposure to mean measured AC 243.997 concentrations of ≥97.1 mg/L did not significantly reduce the survival, reproductive success, or growth of first generation *Daphnia magna*. No physical or behavioral

abnormalities were observed at any time during the study. Since mortality of *Daphnia magna* in all AC 243,997 exposure concentrations throughout the 21 day test was less than 20 percent, the LC_{50} values at the 7-, 14-, and 21-day time periods were all > 97.1 mg/L.

The MATC value for *Daphnia magna* exposed to AC 243,997 was 97.1 mg/L based on the lack of adverse effects on survival, reproduction, or growth of first generation daphnids. Since no adverse effects were observed for any of the three test criteria , the NOEC was 97.1 mg/L."

13. **Reviewer's Discussion:** Protocol generally followed ASTM proposed guidelines for conductance of 21 day Flowthrough or Renewal testing of daphnids. Control mortality was 30% for one control replicate during the 21 day test. However, total mean mortality for controls was 13.5%(10%, 0%, 10%, and 30%). The maximum mortality allowed under ASTM guidelines is twenty percent. The control daphnids that remained, did not demonstrate acceptable reproductive performance by ASTM standards(60 offspring/daphnid). Actual mean reproduction was 51.1 offspring/female. As EPA Standard Evaluation Procedures were also used in protocol preparation the minimum of 40 offspring/female is acceptable for this study. No statistically significant difference between controls and treatment groups could be determined for this parameter. Mean differences in length between control daphnia and treatment daphnids were within 0.006 mm of each other with the exception of the highest test group which averaged 0.37 mm above control length measurements. As three of the 97.1 mg/L test replicates contained only 8 organisms this larger size may be attributable in part to additional food available per organism. Higher mean dry weights were displayed by treatment groups than by control groups. As tested residue levels were nearly 100 ppm the test has satisfied testing requirements for chronic affects of Imazapyr to freshwater invertebrates at EEC levels of $\leq$ 100 ppm.

Adequacy of Study:
Clasification: Core
Rationale: Study author's conclusions are supported by the reported study results.
Repairability: N/A

APPENDIX D

Survival of Daphnia magna Exposed to AC 243,997 in a 21-Day Life Cycle Toxicity Test

Mean Measured Concentration (mg/L)	Replicate	Survival Day 2	Day 5	Day 7	Day 10	Day 14	Day 17	Day 21	Mean Survival
Control	1	100	100	100	90	90	90	90	
	2	100	100	100	100	100	100	100	87.5
	3	100	100	100	100	100	90	90	
	4	100	90	90	90	90	90	70	
5.7	1	100	100	100	100	90	90	90	
	2	100	100	100	100	100	100	100	92.5
	3	100	100	100	100	100	90	90	
	4	100	100	100	100	100	90	90	
11.7	1	100	100	100	100	100	100	90	
	2	100	90	90	90	90	80	80	82.5
	3	100	100	100	100	100	100	90	
	4	100	100	90	90	80	80	70	
23.8	1	100	100	100	100	90	90	90	
	2	100	100	100	100	100	90	90	85
	3	100	80	80	80	80	70	70	
	4	100	100	100	100	90	90	90	
45.6	1	100	90	90	70	70	70	70	
	2	100	100	100	100	100	100	90	82.5
	3	100	70	70	70	70	70	70	
	4	100	100	100	100	100	100	100	
97.1	1	100	100	100	100	100	100	100	
	2	100	100	100	90	90	90	80	85
	3	100	90	90	90	90	80	80	
	4	100	80	80	80	80	80	80	

Source: ESE, 1988.

APPENDIX E

Production of Young/Adult in a Daphnia magna 21-Day Life Cycle Exposure to AC 243,997

Mean Measured Concentration (mg/L)	Replicate	Neonate Production/Total Surviving Adults														
		Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21
Control	1	0/10	9/10	115/9	116/9	225/9	323/9	325/9	364/9	418/9	424/9	452/9	476/9	497/9	507/9	507/9
	2	0/10	81/10	119/10	120/10	283/10	326/10	326/10	437/10	472/10	500/10	534/10	549/10	585/10	598/10	605/10
	3	0/10	0/10	22/10	40/10	88/10	117/10	184/10	186/10	208/10	241/9	283/9	306/9	325/9	339/9	365/9
	4	0/9	0/9	15/9	36/9	61/9	107/9	129/9	144/9	171/9	200/9	249/9	290/8	318/8	326/7	330/7
5.7	1	0/10	9/10	32/10	79/10	123/10	142/9	183/9	242/9	263/9	290/9	328/9	346/9	346/9	352/9	358/9
	2	0/10	0/10	35/10	76/10	102/10	156/10	211/10	234/10	286/10	304/10	347/10	374/10	395/10	399/10	406/10
	3	0/10	8/10	37/10	87/10	103/10	154/10	233/10	278/10	280/10	343/9	367/9	379/9	383/9	387/9	388/9
	4	0/10	0/10	67/10	119/10	121/10	269/10	344/10	372/10	375/10	401/10	439/9	465/9	466/9	472/9	472/9
11.7	1	0/10	10/10	30/10	75/10	107/10	133/10	186/10	187/10	226/10	280/10	294/10	332/10	358/9	376/9	397/9
	2	1/9	1/9	22/9	72/9	89/9	106/9	120/9	123/9	135/9	150/9	173/8	176/8	190/8	195/8	196/8
	3	0/10	0/10	0/10	25/10	52/10	61/10	136/10	177/10	180/10	225/10	261/10	263/9	296/9	338/9	339/9
	4	1/9	1/9	8/9	51/9	68/9	93/9	184/8	212/8	265/8	328/8	357/8	384/8	412/8	431/8	443/7
23.8	1	0/10	17/10	27/10	97/10	134/10	147/9	198/9	226/9	238/9	238/9	256/9	270/9	270/9	313/9	349/9
	2	0/10	0/10	12/10	16/10	58/10	58/10	104/10	140/9	148/9	149/9	175/9	215/9	215/9	221/9	239/9
	3	0/8	11/8	73/8	94/8	108/8	139/8	142/8	180/8	188/7	215/7	238/7	252/7	288/7	288/7	288/7
	4	0/10	0/10	111/10	122/10	139/10	277/10	289/9	325/9	342/9	360/9	379/9	391/9	428/9	436/9	445/9
45.6	1	0/9	6/8	14/8	23/7	41/7	62/7	79/7	121/7	154/7	170/7	181/7	193/7	196/7	216/7	248/7
	2	0/10	0/10	14/10	57/10	101/10	166/10	220/10	284/10	302/10	340/10	366/10	383/10	401/10	401/9	430/9
	3	0/7	0/7	4/7	21/7	74/7	118/7	149/7	177/7	192/7	243/7	259/7	274/7	316/7	329/7	338/7
	4	0/10	9/10	28/10	71/10	134/10	158/10	217/10	281/10	293/10	314/10	343/10	353/10	390/10	398/10	425/10
97.1	1	0/10	16/10	16/10	81/10	158/10	158/10	269/10	294/10	325/10	354/10	431/10	465/10	466/10	532/10	560/10
	2	0/9	0/9	16/9	79/9	97/9	126/9	225/9	236/9	248/9	259/9	277/9	289/9	295/9	300/9	314/8
	3	0/9	0/9	8/9	45/9	72/9	122/9	223/9	238/9	269/9	383/9	439/9	439/9	536/8	566/8	572/8
	4	8/8	22/8	59/8	109/8	122/8	204/8	274/8	298/8	361/8	438/8	462/8	478/8	545/8	603/8	615/8

APPENDIX F

Length of First Generation Daphnia magna Exposed to AC 243,997 for 21 Days in a Life Cycle Toxicity Test

Measured Concentration (mg/L; ppm)	Replicate	Individual Lengths*										X (SD+)
Control	A	81	81	79	85	68	88	81	79	87		81.0 (5.9)
	B	82	76	82	81	81	80	77	78	79	87	80.3 (3.1)
	C	73	74	81	78	65	74	71	79	79		74.9 (5.0)
	D	85	76	71	73	86	72	69				76.7 (6.7)
5.7	A	85	83	82	78	79	85	88	65	80		80.6 (6.7)
	B	65	81	80	78	84	70	78	79	74	84	77.3 (6.1)
	C	81	73	79	84	88	68	90	67	79		78.8 (8.2)
	D	76	70	81	80	87	87	79	84	76		80.0 (5.6)
11.7	A	68	88	75	85	79	91	79	70	85		80.0 (8.0)
	B	72	69	67	74	75	73	70	71			71.4 (2.7)
	C	70	69	79	89	66	87	80	71	87		77.6 (5.0)
	D	91	72	87	73	72	83	82				80.0 (5.0)
23.8	A	79	81	90	79	84	85	73	81	77		81.0 (4.9)
	B	75	83	70	65	77	85	83	77	87		78.0 (7.3)
	C	83	82	60	85	79	67	83				77.0 (9.6)
	D	75	77	78	87	74	84	76	76	81		78.7 (4.4)
45.6	A	89	73	66	81	87	84	82				80.3 (8.1)
	B	80	89	88	82	74	72	83	80	80		80.9 (5.6)
	C	81	81	89	79	67	83	77				79.6 (6.7)
	D	73	61	84	82	82	80	70	71	80	84	76.6 (7.6)
97.1	A	96	69	93	91	78	98	89	92	97	82	88.5 (9.4)
	B	85	88	83	85	74	59	65	87			78.3 (11.0)
	C	89	98	87	78	93	94	94	99			91.5 (6.8)
	D	87	93	74	74	85	85	96	94			86.0 (8.5)

+Standard deviation.

*Unadjusted increment measurements taken from a microscope ocular micrometer. Actual length in millimeters was determined by multiplying the increment measurement by a correction factor of 0.0476 based upon the following formula: $\frac{\text{Ocular micrometer measurement}}{\text{micrometer increments equal to 1 millimeter}}$

Source: ESE, 1988.

APPENDIX G

Dry Weight of First Generation Daphnia magna Exposed to AC 243,997 for 21 Days in a Life Cycle Toxicity Test

Measured Concentration (mg/L; ppm)	Replicate	Individual Dry Weights (micrograms)										X (SD+)
Control	A	200	220	200	160	170	210	110	60	190		168.9 (52.5)
	B	190	150	60	160	170	120	250	90	120	140	145.0 (53.2)
	C	160	80	100	120	50	120	90	100	90		101.1 (30.6)
	D	100	130	80	110	150	120	140				118.6 (24.1)
5.7	A	240	140	120	150	180	250	120	210	240		183.3 (53.2)
	B	110	220	170	280	220	300	210	120	140	280	205.0 (6.87)
	C	160	180	200	220	210	90	150	100	80		154.4 (53.4)
	D	160	90	190	150	180	170	180	250	190		173.3 (42.1)
11.7	A	190	90	130	220	180	150	80	110	250		155.6 (58.8)
	B	90	150	140	160	80	140	90	140			123.8 (31.6)
	C	170	240	160	190	220	50	70	250	330		186.7 (87.9)
	D	180	80	100	150	150	190	120				138.6 (40.6)
23.8	A	90	90	80	210	150	90	190	250	170		146.7 (62.4)
	B	110	110	130	230	160	150	120	120	160		143.3 (38.1)
	C	220	240	280	110	190	190	160				198.6 (55.2)
	D	120	230	230	190	120	190	210	90	190		174.4 (51.5)
45.6	A	210	180	270	240	220	130	220				210.0 (44.7)
	B	220	280	120	210	130	230	200	190	240		202.2 (50.9)
	C	230	210	90	200	170	90	260				167.8 (64.6)
	D	140	170	230	230	100	150	120	170	140	120	157.0 (44.2)
97.1	A	250	140	220	300	320	100	180	190	310	310	232.0 (78.4)
	B	130	190	60	150	100	120	100	150			125.0 (39.6)
	C	380	280	240	210	310	200	300	330			281.3 (61.7)
	D	210	270	240	240	350	360	220	310			275.0 (58.3)

+Standard deviation

Source: ESE, 1988.

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~~Triclopyr~~ 21 Day Reproduction/Parental Daphnid
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SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	Controls	4	40.500	60.500	51.100
2	5.7	4	39.800	52.400	43.950
3	11.7	4	24.500	63.280	42.385
4	23.8	4	26.500	49.400	38.925
5	45.6	4	35.400	48.300	43.500
6	97.1	4	39.250	76.900	60.913

~~Triclopyr~~ 21 Day Reproduction/Parental Daphnid
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SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM
1	Controls	81.253	9.014	4.507
2	5.7	33.583	5.795	2.898
3	11.7	260.580	16.143	8.071
4	23.8	89.629	9.467	4.734
5	45.6	36.047	6.004	3.002
6	97.1	287.031	16.942	8.471

~~Triclopyr~~ 21 Day Reproduction/Parental Daphnid
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ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	1272.692	254.538	1.938
Within (Error)	18	2364.370	131.354	
Total	23	3637.062		

Critical F value = 2.77 (0.05,5,18)
Since F < Critical F FAIL TO REJECT Ho:All groups equal

~~Triclopyr~~ 21 Day Reproduction/Parental Daphnid
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DUNNETTS TEST - TABLE 1 OF 2 Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	Controls	51.100	51.100		
2	5.7	43.950	43.950	0.882	
3	11.7	42.385	42.385	1.075	
4	23.8	38.925	38.925	1.502	
5	45.6	43.500	43.500	0.938	
6	97.1	60.913	60.913	-1.211	

Dunnett table value = 2.41 (1 Tailed Value, P=0.05, df=18,5)

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~~Triclopyr~~ 21 Day Reproduction/Parental Daphnid
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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	Controls	4			
2	5.7	4	19.531	38.2	7.150
3	11.7	4	19.531	38.2	8.715
4	23.8	4	19.531	38.2	12.175
5	45.6	4	19.531	38.2	7.600
6	97.1	4	19.531	38.2	-9.813

~~Triclopyr~~ 21 Day Reproduction/Parental Daphnid
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ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	1272.692	254.538	1.938
Within (Error)	18	2364.370	131.354	
Total	23	3637.062		

Critical F value = 2.77 (0.05,5,18)
Since F < Critical F FAIL TO REJECT Ho:All groups equal

~~Triclopyr~~ 21 Day Reproduction/Parental Daphnid
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BONFERRONI T-TEST - TABLE 1 OF 2 Ho:Control<Treatment

		TRANSFORMED	MEAN CALCULATED IN

	IDENTIFICATION	MEAN	ORIGINAL UNITS	T STAT	SIG
1	Controls	51.100	51.100		
2	5.7	43.950	43.950	0.882	
3	11.7	42.385	42.385	1.075	
4	23.8	38.925	38.925	1.502	
5	45.6	43.500	43.500	0.938	
6	97.1	60.913	60.913	-1.211	

Bonferroni T table value = 2.55 (1 Tailed Value, P=0.05, df=18,5)

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~~Triclopyr~~ 21 Day Reproduction/Parental Daphnid
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BONFERRONI T-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	Controls	4			
2	5.7	4	20.690	40.5	7.150
3	11.7	4	20.690	40.5	8.715
4	23.8	4	20.690	40.5	12.175
5	45.6	4	20.690	40.5	7.600
6	97.1	4	20.690	40.5	-9.813

~~Triclopyr~~ 21 Day Reproduction/Parental Daphnid
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ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	1272.692	254.538	1.938
Within (Error)	18	2364.370	131.354	
Total	23	3637.062		

Critical F value = 2.77 (0.05,5,18)
Since F < Critical F FAIL TO REJECT Ho:All groups equal

~~Triclopyr~~ 21 Day Reproduction/Parental Daphnid
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TUKEY method of multiple comparisons

GROUP	IDENTIFICATION	TRANSFORMED MEAN	ORIGINAL MEAN	GROUP 0 0 0 0 0 0 4 3 5 2 1 6
				- - - - - -

	23.8	38.925	38.925	\
3	11.7	42.385	42.385	. \
5	45.6	43.500	43.500	. . \
2	5.7	43.950	43.950	. . . \
1	Controls	51.100	51.100	. . . . \
6	97.1	60.913	60.913	. . . . . \

* = significant difference (p=0.05) . = no significant difference
Tukey value (6,18) = 4.49 s = 131.354

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~~Triclopyr~~ 21 Day Reproduction/Parental Daphnid
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WILLIAMS TEST (Isotonic regression model) TABLE 1 OF 2

GROUP	IDENTIFICATION	N	ORIGINAL MEAN	TRANSFORMED MEAN	ISOTONIZED MEAN
1	Controls	4	51.100	51.100	43.972
2	5.7	4	43.950	43.950	43.972
3	11.7	4	42.385	42.385	43.972
4	23.8	4	38.925	38.925	43.972
5	45.6	4	43.500	43.500	43.972
6	97.1	4	60.913	60.913	60.913

~~Triclopyr~~ 21 Day Reproduction/Parental Daphnid
File: tricdaph.21D Transform: NO TRANSFORM

WILLIAMS TEST (Isotonic regression model) TABLE 2 OF 2

IDENTIFICATION	ISOTONIZED MEAN	CALC. WILLIAMS	SIG P=.05	TABLE WILLIAMS	DEGREES OF FREEDOM
Controls	43.972				
5.7	43.972	0.880		1.73	k= 1, v=18
11.7	43.972	0.880		1.82	k= 2, v=18
23.8	43.972	0.880		1.85	k= 3, v=18
45.6	43.972	0.880		1.86	k= 4, v=18
97.1	60.913	1.211		1.87	k= 5, v=18

s = 11.461
Note: df used for table values are approximate when v > 20.

~~Triclopyr~~ 21 Day Reproduction/Parental Daphnid
File: tricdaph.21D Transform: NO TRANSFORM

KRUSKAL-WALLIS ANOVA BY RANKS - TABLE 1 OF 2

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	RANK SUM
1	Controls	51.100	51.100	63.000