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**Table 2.1: Toxicity of 2,4-D**

Name of Herbicide	Grade with Concentration (%)	Doses (mg/ml)	Duration	Mortality	LC Value
2,4-D	Technical 80%	750	96 hrs	All died	LD <sub>100</sub>
		375	96 hrs	Half died	LD <sub>50</sub>
		185	96 hrs	All alive	LD <sub>0</sub>
		130	6 Weeks	All alive	Sub lethal dose

**Table 2.2: Toxicity of Butoxone**

Name of Herbicide	Grade with Concentration (%)	Doses (mg/ml)	Duration	Mortality	LC Value
Butoxone	Technical	700	96 hrs	All died	LD <sub>100</sub>

	85%	350	96 hrs	Half died	LD <sub>50</sub>
		175	96 hrs	All alive	LD <sub>0</sub>
		100	6 Weeks	All alive	Sub lethal dose

Preparation of stock solution, 2,4-D was dissolved in 1 ml distilled water. Different doses were prepared from one stock solution of Butoxone.

**Table 3.1: Showing the long-term effects of 2,4-D on Serum Glutamate Oxalate Transaminase (SGOT) level after treatment of 5 mg/kg bw in Albino rats**

S.No.	Treatment duration	No of treated rats	Control		Treated	
			Range	Average value (in $\mu/l$ ), SD, SE $\pm$	Range	Average value (in $\mu/l$ ), SD, SE $\pm$
1.	1	6	118.3-124.5	122.15, 4.70, $\pm$ 5.43	144.3-149.8	145.56, 8.57, $\pm$ 7.06
2.	5	6	119.7-128.5	123.58, 4.35, $\pm$ 6.76	146.4-151.5	149.59, 9.60, $\pm$ 8.32
3.	15	6	121.1-129.2	124.61, 2.01, $\pm$ 6.27	153.6-156.2	156.40, 7.54, $\pm$ 8.97
4.	25	6	121.9-130.3	125.32, 2.76, $\pm$ 6.13	157.8-159.4	162.58, 7.38, $\pm$ 7.29
5.	35	6	123.8-130.7	126.04, 2.85, $\pm$ 5.69	162.9-179.4	173.62, 8.56, $\pm$ 8.71
6.	75	6	124.1-131.2	127.10, 3.61, $\pm$ 5.24	166.8-184.7	189.33, 10.17, $\pm$ 9.88
7.	115	6	124.9-131.5	128.65, 3.44, $\pm$ 5.90	189.9-198.2	197.55, 10.95, $\pm$ 10.02
8.	145	6	125.4-131.7	129.80, 3.94, $\pm$ 5.47	206.9-214.5	208.57, 8.76, $\pm$ 11.87

**Table 3.2: Showing the long-term effects of 2,4-D on Serum Glutamate Pyruvate Transaminase (SGPT) level after 5 mg/kg bw in Albino rats**

S.No.	Treatment duration	No of treated rats	Control		Treated	
			Range	Average value (in $\mu/l$ ), SD, SE $\pm$	Range	Average value (in $\mu/l$ ), SD, SE $\pm$
1.	1	6	45.2-55.4	52.2, 4.31, $\pm 2.54$	89.7-103.4	96.51, 5.26, $\pm 4.90$
2.	5	6	44.0-58.5	52.8, 6.49, $\pm 2.98$	85.8-98.2	92.50, 5.05, $\pm 4.53$
3.	15	6	43.8-57.8	51.59, 5.76, $\pm 3.63$	71.3-92.8	83.07, 8.84, $\pm 4.72$
4.	25	6	43.2-56.1	51.02, 5.42, $\pm 2.29$	69.7-83.5	76.6, 6.97, $\pm 4.99$
5.	35	6	42.7-55.9	50.55, 6.54, $\pm 3.90$	60.1-78.6	67.50, 7.45, $\pm 3.43$
6.	75	6	42.1-55.4	49.58, 6.66, $\pm 3.85$	90.3-107.9	102.66, 6.40, $\pm 6.85$
7.	115	6	43.9-57.2	50.95, 5.74, $\pm 2.86$	98.3-120.1	113.54, 6.89, $\pm 7.48$
8.	145	6	45.7-57.6	52.05, 4.38, $\pm 3.57$	108.4-132.7	124.34, 4.75, $\pm 6.98$

**Table 3.3: Showing the long-term effects of 2,4-D on Serum Lactate Dehydrogenase (LDH) level after 5 mg/kg bw treatment in Albino rats**

S.No.	Treatment duration	No of treated rats	Control		Treated	
			Range	Average value (in $\mu/l$ ), SD, SE $\pm$	Range	Average value (in $\mu/l$ ), SD, SE $\pm$
1.	1	6	60.3-72.1	66.2, 4.78, $\pm 3.07$	82.0-94.4	88.20, 4.74, $\pm 6.75$
2.	5	6	60.9-73.4	67.15, 5.21, $\pm 3.59$	82.9-94.7	88.80, 4.82, $\pm 6.90$
3.	15	6	61.2-73.2	67.45, 4.98, $\pm 3.70$	84.2-94.9	89.55, 3.69, $\pm 8.37$
4.	25	6	62.7-73.9	67.95, 4.02, $\pm 3.73$	87.3-98.2	92.75, 4.21, $\pm 7.46$
5.	35	6	64.1-74.2	69.15, 3.76, $\pm 4.09$	87.8-99.1	93.45, 4.37, $\pm 7.45$
6.	75	6	65.4-75.1	70.25, 3.52, $\pm 4.26$	88.9-99.7	94.30, 4.39, $\pm 6.78$
7.	115	6	65.9-75.7	70.80, 3.70, $\pm 4.43$	90.2-112.2	101.2, 8.56, $\pm 8.30$
8.	145	6	66.2-76.3	71.25, 3.17, $\pm 4.85$	94.8-126.4	110.6, 12.60, $\pm 8.99$

**after 5 mg/kg b.w treatment in Albino rats**

S.No.	Treatment duration	No. of treated rats	Control		Treated	
			Table 3.4: Showing the long-term effects of 2,4-D on Glucose level Range	Average value (in $\mu/l$ ), SD, SE $\pm$	Range	Average value (in $\mu/l$ ), SD, SE $\pm$
1.	1	6	103.0-119.5	111.25, 6.90, $\pm 9.60$	115.4-122.6	119.0, 4.37, $\pm 11.56$
2.	5	6	98.2-115.3	106.75, 7.40, $\pm 6.10$	106.3-118.2	112.25, 4.87, $\pm 8.99$
3.	15	6	97.1-113.4	105.25, 6.72, $\pm 7.40$	93.7-119.4	101.55, 6.77, $\pm 10.22$
4.	25	6	95.6-112.7	104.15, 6.34, $\pm 9.80$	82.2-96.6	89.40, 5.49, $\pm 6.20$
5.	35	6	98.6-114.3	106.40, 6.85, $\pm 10.34$	87.0-99.7	93.35, 7.15, $\pm 6.98$
6.	75	6	101.3-116.4	108.85, 7.08, $\pm 9.93$	79.4-92.2	85.8, 4.90, $\pm 4.76$
7.	115	6	92.4-112.1	102.25, 8.59, $\pm 9.87$	74.5-89.1	81.8, 5.45, $\pm 6.46$
8.	145	6	91.1-1119	101.5, 8.23, $\pm 7.69$	70.9-84.5	77.7, 5.53, $\pm 5.86$

**Table 3.5: Showing the long-term effects of 2,4-D on Serum Lipid level after 5 mg/kg bw treatment in *Albino rats***

S.No.	Treatment duration	No of treated rats	Control		Treated	
			Range	Average value (in mg/L), SD, SE±	Range	Average value (in mg/L), SD, SE±
1.	1	6	148.4-162.2	155.3, 8.40, ±12.38	176.2-205.9	191.05, 10.23, ±14.05
2.	5	6	143.7-158.1	150.9, 9.64, ±8.79	183.7-212.2	197.95, 10.37, ±13.78
3.	15	6	131.7-149.8	140.75, 7.31, ±8.65	182.5-209.1	195.80, 8.91, ±13.60
4.	25	6	129.2-147.4	138.3, 7.73, ±9.73	171.4-196.6	184.0, 9.47, ±8.52
5.	35	6	146.9-162.8	154.85, 6.92, ±10.54	164.0-189.2	176.60, 8.68, ±11.39
6.	75	6	139.6-148.3	143.95, 6.79, ±9.07	162.9-186.4	174.65, 10.07, ±9.98
7.	115	6	135.5-145.4	140.45, 5.21, ±8.98	170.4-188.3	179.35, 7.41, ±14.08
8.	145	6	130.8-142.6	136.70, 5.83, ±7.79	181.7-195.4	188.55, 6.73, ±13.78



**Table 3.6: Showing the long-term effects of Butoxone on Serum Glutamate Oxalate Transaminase (SGOT) level after 10 mg/kg b.w treatment in *Albino rats***

S.No.	Treatment duration	No of treated rats	Control		Treated	
			Range	Average value (in $\mu/l$ ), SD, SE $\pm$	Range	Average value (in $\mu/l$ ), SD, SE $\pm$
1.	1	6	108.0-121.5	114.75, 10.035, $\pm 2.34$	109.5-137.2	123.4, 12.07, $\pm 2.93$
2.	5	6	108.9-124.2	116.55, 11.23, $\pm 2.40$	119.4-130.7	125.05, 9.045, $\pm 2.70$
3.	15	6	109.2-124.4	116.8, 11.57, $\pm 2.86$	122.2-159.7	140.95, 13.46, $\pm 2.92$
4.	25	6	116.7-121.7	116.2, 4.32, $\pm 2.70$	125.3-166.5	143.9, 17.12, $\pm 2.87$
5.	35	6	110.3-120.5	115.4, 7.13, $\pm 2.42$	130.6-175.8	150.70, 16.40, $\pm 2.29$
6.	75	6	112.2-121.9	117.05, 9.70, $\pm 2.86$	135.3-187.2	161.25, 12.67, $\pm 2.15$
7.	115	6	108.5-127.5	118.0, 12.12, $\pm 2.32$	150.9-191.6	173.25, 12.43, $\pm 2.60$
8.	145	6	115.5-123.4	119.45, 5.074, $\pm 2.10$	159.1-212.7	185.9, 14.62, $\pm 2.92$

**Table 3.7: Showing the long-term effect of butoxone on Serum Glutamate Pyruvate Transaminase (SGPT) level after 10 mg/kg bw treatment in Albino rats**

S.No.	Treatment duration	No. of treated rats	Control		Treated	
			Range	Average value (in $\mu/l$ ), SD, SE $\pm$	Range	Average value (in $\mu/l$ ), SD, SE $\pm$
1.	1	6	22.1-43.2	32.65, 8.43, $\pm 1.77$	32.5-52.2	42.35, 8.10, $\pm 1.75$
2.	5	6	22.8-44.6	33.7, 9.21, $\pm 1.45$	33.9-54.6	44.25, 7.09, $\pm 1.12$
3.	15	6	23.5-45.5	34.5, 8.54, $\pm 1.19$	40.1-57.8	48.95, 3.78, $\pm 1.30$
4.	25	6	25.3-46.2	36.25, 7.65, $\pm 1.99$	45.2-67.0	56.1, 5.34, $\pm 1.16$
5.	35	6	24.6-45.9	35.56, 6.23, $\pm 1.82$	47.1-69.7	58.40, 8.31, $\pm 1.62$
6.	75	6	25.7-46.2	35.95, 7.43, $\pm 1.17$	52.5-73.4	62.95, 7.07, $\pm 2.62$
7.	115	6	23.9-44.1	34.0, 9.05, $\pm 1.45$	56.8-75.3	66.05, 8.50, $\pm 2.18$
8.	145	6	24.2-44.7	34.45, 9.53, $\pm 1.25$	60.08-83.5	71.79, 3.05, $\pm 2.26$

**Table 3.8: Showing the long-term effect of butoxone on Serum Lactate Dehydrogenase (LDH) after 10 mg/kg bw treatment in Albino rats**

S.No.	Treatment duration	No of treated rats	Control		Treated	
			Range	Average value (in $\mu/l$ ), SD, SE $\pm$	Range	Average value (in $\mu/l$ ), SD, SE $\pm$
1.	1	6	52.3-54.8	53.55, 1.076, $\pm 1.73$	62.1-70.4	66.25, 4.054, $\pm 1.43$
2.	5	6	52.0-58.4	55.50, 2.098, $\pm 1.13$	61.5-72.0	66.75, 5.076, $\pm 1.67$
3.	15	6	52.6-60.2	56.40, 5.082, $\pm 1.98$	67.8-80.6	74.20, 6.057, $\pm 1.06$
4.	25	6	50.5-54.2	52.35, 2.046, $\pm 1.62$	75.0-86.6	80.80, 5.084, $\pm 1.31$
5.	35	6	53.2-61.7	57.45, 4.013, $\pm 1.27$	79.5-92.2	85.85, 5.013, $\pm 1.18$
6.	75	6	54.3-64.7	59.50, 5.098, $\pm 1.30$	86.4-95.5	90.95, 5.074, $\pm 1.94$
7.	115	6	55.1-62.4	58.75, 3.059, $\pm 1.21$	91.3-107.5	99.40, 6.083, $\pm 1.29$
8.	145	6	55.9-63.8	59.85, 4.032, $\pm 1.86$	98.9-113.6	106.25, 6.096, $\pm 1.04$

**Table 3.9: Showing the long-term effect of butoxone on glucose after 10 mg/kg b.w treatment in Albino rats**

S.No.	Treatment duration	No of treated rats	Control		Treated	
			Range	Average value (in mg/L), SD, SE±	Range	Average value (in mg/L), SD, SE±
1.	1	6	41.8-68.6	55.20, 3.49, ±1.93	69.4-79.1	74.25, 4.24, ±2.34
2.	5	6	43.1-66.2	54.65, 3.80, ±1.86	68.3-80.4	74.35, 6.79, ±2.24
3.	15	6	48.6-64.9	56.75, 2.76, ±2.02	74.0-87.2	80.60, 6.54, ±2.86
4.	25	6	48.8-65.2	57.0, 4.50, ±1.79	80.2-98.7	89.45, 7.89, ±2.92
5.	35	6	49.5-65.9	57.70, 4.31, ±1.91	86.4-100.3	93.35, 6.62, ±2.38
6.	75	6	47.0-67.3	57.15, 5.09, ±1.75	92.8-107.5	100.15, 6.48, ±3.65
7.	115	6	45.4-66.4	55.90, 4.75, ±1.84	96.4-116.7	106.55, 8.09, ±3.42
8.	145	6	48.3-65.3	56.80, 5.12, ±1.99	105.9-120.5	113.20, 7.49, ±3.50

**Table 3.10: Showing the long-term effect of butoxone on lipid after 10 mg/kg bw in treatment Albino rats**

S.No.	Treatment duration	No of treated rats	Control		Treated	
			Range	Average value (in mg/L), SD, SE±	Range	Average value (in mg/L), SD, SE±
1.	1	6	96.1-119.6	107.85, 9.60, ±3.28	122.6-135.7	129.10, 6.05, ±4.56
2.	5	6	96.7-120.3	108.50, 9.82, ±3.58	123.4-137.8	130.60, 6.98, ±4.70
3.	15	6	95.4-120.0	107.70, 9.51, ±4.09	122.5-132.0	127.25, 5.67, ±4.12
4.	25	6	94.2-119.2	106.70, 8.92, ±4.11	119.3-130.9	125.10, 7.41, ±4.07
5.	35	6	95.7-116.2	105.95, 6.74, ±3.63	114.2-126.5	120.35, 4.35, ±4.95
6.	75	6	95.9-118.6	107.25, 8.54, ±4.15	110.1-122.4	116.25, 4.69, ±4.30
7.	115	6	96.2-117.9	107.05, 7.86, ±3.92	102.5-116.9	109.70, 6.54, ±4.24
8.	145	6	96.9-119.5	108.20, 8.97, ±4.36	88.2-103.8	96.0, 6.71, ±4.10