APPENDIX

Appendix Table 1 Comparison of developmental period (day) between male and female of *Platydema waterhousei* Gelbien at 25.7± 4.9 °C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

Stage/period	Developmental period X±SE(n)			
	Male	Female	*t*	*p*
Egg				
Incubation period	7.7±0.1(12)	7.8±0.1(18)	0.66	0.52
Larva				
1st instar	2.8±0.1(12)	2.6±0.1(18)	-1.36	0.18
2nd instar	4.6±0.2(12)	4.3±0.1(18)	-1.07	0.30
3rd instar	7.2±0.5(12)	7.5±0.4(18)	0.54	0.60
4th instar	4.9±0.5(12)	4.6±0.3(18)	-0.55	0.60
5th instar	7.1±1.1(12)	6.4±0.5(18)	-0.57	0.62
6th instar	7.2±0.7(12)	7.0±0.4(18)	-0.22	0.83
7th instar	7.4±0.6(12)	6.9±0.4(18)	-0.68	0.50
8th instar	7.9±1.1(12)	8.3±0.8(18)	0.28	0.78
9th instar	11.9±1.4(11)	1.6±0.6(18)	-0.27	0.80
10th instar	14.8±1.2(5)	13.6±1.2(5)	-0.7	0.51
Total larval period	66.2±1.2(12)	63.1±1.2(18)	-1.81	0.80
Pupa				
Pupal period	6.8±0.3(12)	6.4±0.2(18)	-1.00	0.32
Total developmental period				
Egg to adult emergence	80.6±1.2(12)	77.3±1.1(18)	-1.92	0.06

Appendix Table 2 First preliminary test to determine the optimal range of exposure period when eggs of *Platydema waterhousei* Gelbien exposed to four modified atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

Exposure time	% corrected mortality				
(hr)	G1	G2	G3	G4	Untreated check
6	88	92	72	96	0
12	100	100	96	100	0
24	100	100	100	100	0
48	100	100	100	100	0

Appendix Table 3 Second preliminary test to determine the optimal range of exposure period when eggs of *Platydema waterhousei* Gelbien exposed to four modified atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

Exposure time	% corrected mortality				
(hr)	G1	G2	G3	G4	Untreated check
1	64	60	56	60	0
2	64	60	60	60	0
4	68	76	76	72	0
6	100	96	96	96	0

Appendix Table 4 First preliminary test to determine the optimal range of exposure period when larvae of *Platydema waterhousei* Gelbien exposed to four modified atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

Exposure time	% corrected mortality				
(hr)	G1	G2	G3	G4	Untreated check
4	44	40	32	52	0
6	76	76	60	88	0
8	100	100	96	100	0
12	100	100	100	100	0

Appendix Table 5 Second preliminary test to determine the optimal range of exposure period when larvae of *Platydema waterhousei* Gelbien exposed to four modified atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

Exposure time	% corrected mortality				
(hr)	G1	G2	G3	G4	Untreated check
2	40	36	36	36	0
4	80	80	80	84	0
6	96	88	92	84	0
8	100	88	100	100	0

Appendix Table 6 First preliminary test to determine the optimal range of exposure period when pupae of *Platydema waterhousei* Gelbien exposed to four modified atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

Exposure time	% corrected mortality				
(hr)	G1	G2	G3	G4	Untreated check
12	100	88	64	84	0
24	100	88	88	96	0
48	100	100	100	100	0
72	100	100	100	100	0

Appendix Table 7 Second preliminary test to determine the optimal range of exposure period when pupae of *Platydema waterhousei* Gelbien exposed to four modified atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

Exposure time	% corrected mortality				
(hr)	G1	G2	G3	G4	Untreated check
4	24	16	20	40	0
8	72	44	68	48	0
12	100	92	88	96	0
24	100	100	96	100	0

Appendix Table 8 First preliminary test to determine the optimal range of exposure period when adults of *Platydema waterhousei* Gelbien exposed to four modified atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

Exposure time	% corrected mortality				
(hr)	G1	G2	G3	G4	Untreated check
8	100	100	100	100	0
12	100	100	100	100	0
24	100	100	100	100	0
48	100	100	100	100	0

Appendix Table 9 Second preliminary test to determine the optimal range of exposure period when adults of *Platydema waterhousei* Gelbien exposed to four modified atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

Exposure time	% corrected mortality				
(hr)	G1	G2	G3	G4	Untreated check
2	76	72	60	60	0
4	80	80	80	84	0
6	96	88	92	84	0
8	100	100	100	100	0

Appendix Table 10 The corrected percentage mortality of *Platydema waterhousei* Gelbien eggs when exposed to four modified atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

Exposure time	% corrected mortality				
(hr)	G1	G2	G3	G4	Untreated check
0.5	41.6	52.7	38.8	34.6	4.0
1.0	49.9	61.1	49.9	51.3	4.0
2.0	62.5	75.0	59.7	58.3	4.0
4.0	80.5	88.9	68.0	63.8	4.0

Appendix Table 11 The corrected percentage mortality of *Platydema waterhousei* Gelbien larvae when exposed to four modified atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

Exposure time	% corrected mortality				
(hr)	G1	G2	G3	G4	Untreated check
1.0	18.7	17.3	8.0	16.0	0
2.0	44.0	33.3	22.7	29.3	0
4.0	78.7	67.7	72.0	58.7	0
6.0	92.7	92.0	92.0	90.7	0

Appendix Table 12 The corrected percentage mortality of of *Platydema waterhousei* Gelbien pupae when exposed to four modified atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

Exposure time	% corrected mortality				
(hr)	G1	G2	G3	G4	Untreated check
4.0	32.0	28.0	22.7	18.7	0
6.0	44.0	42.7	42.7	44.0	0
8.0	53.3	56.0	53.3	62.7	0
12.0	74.7	74.7	62.7	68.0	0

Appendix Table 13 The corrected percentage mortality of *Platydema waterhousei* Gelbien adults when exposed to four modified atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

Exposure time	% corrected mortality				
(hr)	G1	G2	G3	G4	Untreated check
0.5	34.7	29.3	28.0	30.7	0
1.0	72.0	56.0	45.3	57.3	0
1.5	85.3	81.3	62.7	61.3	0
2.0	93.3	86.7	78.7	77.3	0

Appendix Table 14 The lethal time values for eggs of *Platydema waterhousei* Gelbien when exposed to G1 (100%CO_2) atmospheres, at 25.7± 4.9 °C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 0.00864	.95	0.00000 < LC < 0.07143
2 = 0.01486	.95	0.00000 < LC < 0.09883
3 = 0.02096	.95	0.00000 < LC < 0.12153
4 = 0.02715	.95	0.00000 < LC < 0.14204
5 = 0.03351	.95	0.00001 < LC < 0.16130
10 = 0.06905	.95	0.00008 < LC < 0.25036
20 = 0.16574	.95	0.00128 < LC < 0.43127
30 = 0.31162	.95	0.00966 < LC < 0.65019
40 = 0.53427	.95	0.05254 < LC < 0.95553
50 = 0.88356	.95	0.23246 < LC < 1.50245
60 = 1.46120	.95	0.74588 < LC < 3.25725
70 = 2.50522	.95	1.47542 < LC < 13.16368
80 = 4.71031	.95	2.42981 < LC < 91.19570
90 =11.30678	.95	4.33131 < LC < 1497.00200
95 =23.29700	.95	6.79276 < LC < %15500.57000
96 =28.75684	.95	7.72844 < LC < %30681.45000
97 =37.25185	.95	9.04975 < LC < %71079.11000
98 =52.54814	.95	11.14997 < LC < %217363.50000
99 =90.36820	.95	15.46386 < LC < %1267681.00000

Regression line: Y= A +Slope * (X- M)

A = 5.217935 +/- 0.1348915

Slope = 1.157732 +/- 0.4092092

M = 10.13448

5.083043<A<5.352826

0.748523<B<1.566941

Heterogeneity = 1

% denotes an approximate value

Appendix Table 15 The lethal time values for eggs of *Platydema waterhousei* Gelbien when exposed to G2 (80%CO_2: 20%N_2) atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 0.00665	.95	0.00000 < LC < 0.05776
2 = 0.01104	.95	0.00000 < LC < 0.07840
3 = 0.01523	.95	0.00000 < LC < 0.09521
4 = 0.01941	.95	0.00000 < LC < 0.11023
5 = 0.02363	.95	0.00000 < LC < 0.12421
10 = 0.04648	.95	0.00004 < LC < 0.18751
20 = 0.10545	.95	0.00048 < LC < 0.31097
30 = 0.19036	.95	0.00301 < LC < 0.45218
40 = 0.31524	.95	0.01422 < LC < 0.63153
50 = 0.50470	.95	0.05876 < LC < 0.88764
60 = 0.80804	.95	0.22408 < LC < 1.35207
70 = 1.33809	.95	0.69813 < LC < 2.85958
80 = 2.41557	.95	1.43562 < LC < 12.65171
90 = 5.48033	.95	2.65830 < LC < 146.06370
95 =10.77803	.95	4.12937 < LC < 1178.30500
96 =13.12471	.95	4.67602 < LC < 2172.99700
97 =16.72065	.95	5.44023 < LC < 4617.70200
98 =23.06940	.95	6.64044 < LC < %12599.83000
99 =38.31101	.95	9.06450 < LC < %61470.89000

Regression line: Y = A +Slope * (X- M)

A = 5.490348 +/- 0.1402931

Slope = 1.237462 +/- 0.4299073

M = 10.09929

5.350055<A<5.630641

0.807555<B<1.667369

Heterogeneity = 1

% denotes an approximate value

Appendix Table 16 The lethal time values for eggs of *Platydema waterhousei* Gelbien when exposed to G3 (60%CO_2: 40%N_2) atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 0.00165	.95	0.00000 < LC < 0.04521
2 = 0.00352	.95	0.00000 < LC < 0.06709
3 = 0.00569	.95	0.00000 < LC < 0.08626
4 = 0.00816	.95	0.00000 < LC < 0.10427
5 = 0.01094	.95	0.00000 < LC < 0.12169
10 = 0.02997	.95	0.00000 < LC < 0.20769
20 = 0.10158	.95	0.00000 < LC < 0.40287
30 = 0.24492	.95	0.00000 < LC < 0.66831
40 = 0.51927	.95	0.00000 < LC < 1.10507
50 = 1.04695	.95	0.00491 < LC < 2.68673
60 = 2.11089	.95	0.93182 < LC < 2071.38700
70 = 4.47546	.95	2.01859 < LC < %328568400.00000
80 =10.79094	.95	3.51460 < LC < %5743833000000000.00
90 =36.57271	.95	6.93606 < LC < % 2.855669E+23
95 =%100.18380	.95	11.89763 < LC < % 4.413642E+30
96 =%134.35740	.95	13.89952 < LC < % 5.487481E+32
97 =%192.72990	.95	16.81609 < LC < % 1.701412E+33
98 =%311.32610	.95	21.64129 < LC < % 1.701412E+33
99 =%662.86970	.95	32.15594 < LC < % 1.701412E+33

Regression line: Y = A +Slope * (X- M)

A = 5.106575 +/- 0.1323893

Slope = 0.8305499 +/- 0.3974253

M = 10.14825

4.974185<A<5.238964

0.433125<B<1.227975

Heterogeneity = 1

% denotes an approximate value

Appendix Table 17 The lethal time values for eggs of *Platydema waterhousei* Gelbien when exposed to G4 (100%N_2) atmospheres, at 25.7±4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 0.00150	.95	0.00000 < LC < 0.04587
2 = 0.00328	.95	0.00000 < LC < 0.06863
3 = 0.00539	.95	0.00000 < LC < 0.08870
4 = 0.00784	.95	0.00000 < LC < 0.10764
5 = 0.01063	.95	0.00000 < LC < 0.12605
10 = 0.03027	.95	0.00000 < LC < 0.21762
20 = 0.10749	.95	0.00000 < LC < 0.42899
30 = 0.26805	.95	0.00000 < LC < 0.72415
40 = 0.58487	.95	0.00000 < LC < 1.24763
50 = 1.21124	.95	0.00086 < LC < 5.56719
60 = 2.50844	.95	1.15796 < LC < %4206460000.00000
70 = 5.47330	.95	2.27686 < LC < % 1.571739E+22
80 =13.64824	.95	3.93904 < LC < % 1.701412E+33
90 =48.46516	.95	7.83394 < LC < % 1.701412E+33
95 =%137.97310	.95	13.56083 < LC < % 1.701412E+33
97 = 8.50197	.95	3.80179 < LC < 184.93190
98 =10.45723	.95	4.34265 < LC < 308.14440
99 =14.49068	.95	5.34953 < LC < 689.72900

Regression line: Y = A +Slope * (X- M)

A = 5.055248 +/- 0.1322382

Slope = 0.7999808 +/- 0.3967002

M = 10.15229

4.923009<A<5.187486

0.403281<B<1.196681

Heterogeneity = 1

% denotes an approximate value

Appendix Table 18 The lethal time values for larvae of *Platydema waterhousei* Gelbien when exposed to G1 (100%CO_2) atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 0.35399	.95	0.12313 < LC < 0.60206
2 = 0.43619	.95	0.16876 < LC < 0.70592
3 = 0.49799	.95	0.20603 < LC < 0.78133
4 = 0.55018	.95	0.23933 < LC < 0.84360
5 = 0.59666	.95	0.27028 < LC < 0.89811
10 = 0.78820	.95	0.40945 < LC < 1.11603
20 = 1.10432	.95	0.67207 < LC < 1.46296
30 = 1.40831	.95	0.95135 < LC < 1.79576
40 = 1.73328	.95	1.26445 < LC < 2.16553
50 = 2.10382	.95	1.62160 < LC < 2.62239
60 = 2.55356	.95	2.03367 < LC < 3.24740
70 = 3.14281	.95	2.52417 < LC < 4.19353
80 = 4.00792	.95	3.16303 < LC < 5.81482
90 = 5.61536	.95	4.20565 < LC < 9.40970
95 = 7.41807	.95	5.25632 < LC < 14.17284
96 = 8.04465	.95	5.60246 < LC < 15.98735
97 = 8.88786	.95	6.05618 < LC < 18.54886
98 =10.14701	.95	6.71176 < LC < 22.61626
99 =12.50312	.95	7.88172 < LC < 30.95082

Regression line: Y= A +Slope * (X- M)

A = 5.191918 +/- 0.14555823

Slope = 3.006142 +/- 0.530045

M = 10.38685

5.046335<A<5.3375

2.476097<B<3.536187

Heterogeneity = 1

Appendix Table 19 The lethal time values for larvae of *Platydema waterhousei* Gelbien when exposed to G2 (80%CO_2: 20%N_2) atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 0.35657	.95	0.11046 < LC < 0.62922
2 = 0.44708	.95	0.15679 < LC < 0.74613
3 = 0.51609	.95	0.19570 < LC < 0.83182
4 = 0.57495	.95	0.23112 < LC < 0.90305
5 = 0.62774	.95	0.26455 < LC < 0.96574
10 = 0.84876	.95	0.41954 < LC < 1.21926
20 = 1.22309	.95	0.72660 < LC < 1.63219
30 = 1.59173	.95	1.06588 < LC < 2.04023
40 = 1.99326	.95	1.45373 < LC < 2.51042
50 = 2.45879	.95	1.89717 < LC < 3.11837
60 = 3.03305	.95	2.40393 < LC < 3.98947
70 = 3.79816	.95	3.00396 < LC < 5.35783
80 = 4.94294	.95	3.79370 < LC < 7.77927
90 = 7.12295	.95	5.11258 < LC < 13.38312
95 = 9.63076	.95	6.47167 < LC < 21.16809
96 =10.51512	.95	6.92456 < LC < 24.21677
97 =11.71429	.95	7.52155 < LC < 28.58560
98 =13.52252	.95	8.39019 < LC < 35.65850
99 =16.95518	.95	9.95596 < LC < 50.57830

Regression line: Y = A +Slope * (X- M)

A = 5.086584 +/- 0.1411693

Slope = 2.774672 +/- 0.5116789

M = 10.42193

4.945414<A< 5.227753

2.262993<B<3.3286351

Heterogeneity = 1

Appendix Table 20 The lethal time values for larvae of *Platydema waterhousei* Gelbien when exposed to G3 (60%CO_2: 40%N_2) atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 0.68143	.95	0.33748 < LC < 0.99796
2 = 0.80267	.95	0.42710 < LC < 1.13483
3 = 0.89056	.95	0.49568 < LC < 1.23191
4 = 0.96298	.95	0.55425 < LC < 1.31083
5 = 1.02621	.95	0.60682 < LC < 1.37910
10 = 1.27662	.95	0.82633 < LC < 1.64555
20 = 1.66312	.95	1.19187 < LC < 2.05393
30 = 2.01253	.95	1.53742 < LC < 2.43296
40 = 2.36844	.95	1.89034 < LC < 2.84185
50 = 2.75708	.95	2.26335 < LC < 3.32722
60 = 3.20949	.95	2.67095 < LC < 3.95240
70 = 3.77706	.95	3.14124 < LC < 4.82660
80 = 4.57060	.95	3.74076 < LC < 6.19291
90 = 5.95435	.95	4.68801 < LC < 8.89641
95 = 7.40734	.95	5.60360 < LC < 12.09331
96 = 7.89370	.95	5.89758 < LC < 13.23538
97 = 8.53557	.95	6.27779 < LC < 14.79385
98 = 9.47020	.95	6.81766 < LC < 17.16218
99 =11.15516	.95	7.75660 < LC < 21.70874

Regression line: Y = A +Slope * (X- M)

A = 5.069824 +/- 0.1545181

Slope = 3.833083 +/- 0.6186418

M = 10.45867

4.915306<A<5.224343

3.214441<B<4.451725

Heterogeneity = 1

Appendix Table 21 The lethal time values for larvae of *Platydema waterhousei* Gelbien when exposed to G4 (100%N_2) atmospheres, at 25.7±4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 0.39398	.95	0.12272 < LC < 0.68974
2 = 0.49470	.95	0.17500 < LC < 0.81848
3 = 0.57158	.95	0.21906 < LC < 0.91292
4 = 0.63719	.95	0.25928 < LC < 0.99151
5 = 0.69609	.95	0.29728 < LC < 1.06073
10 = 0.94296	.95	0.47408 < LC < 1.34131
20 = 1.36198	.95	0.82549 < LC < 1.80149
30 = 1.77543	.95	1.21287 < LC < 2.26238
40 = 2.22646	.95	1.65117 < LC < 2.80382
50 = 2.75010	.95	2.14351 < LC < 3.51871
60 = 3.39689	.95	2.69686 < LC < 4.55633
70 = 4.25982	.95	3.34875 < LC < 6.19087
80 = 5.55298	.95	4.21081 < LC < 9.08461
90 = 8.02052	.95	5.66008 < LC < 15.80552
95 =10.86498	.95	7.15949 < LC < 25.19746
96 =11.86926	.95	7.65983 < LC < 28.88938
97 =13.23190	.95	8.31974 < LC < 34.19070
98 =15.28821	.95	9.28046 < LC < 42.79635
99 =19.19647	.95	11.01345 < LC < 61.02332

Regression line: Y = A +Slope * (X- M)

A = 5.010545 +/- 0.1406493

Slope = 2.75727 +/- 0.5151001

M = 10.44317

4.869896<A<5.151194

2.24217<B<3.27237

Heterogeneity = 1

Appendix Table 22 The lethal time values for pupae of *Platydema waterhousei* Gelbien when exposed to G1 (100%CO_2) atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 0.67497	.95	0.01081 < LC < 1.70648
2 = 0.88377	.95	0.02273 < LC < 2.01703
3 = 1.04862	.95	0.03642 < LC < 2.24368
4 = 1.19261	.95	0.05192 < LC < 2.43149
5 = 1.32421	.95	0.06925 < LC < 2.59635
10 = 1.89688	.95	0.18583 < LC < 3.25898
20 = 2.93153	.95	0.60912 < LC < 4.32836
30 = 4.01247	.95	1.41144 < LC < 5.39492
40 = 5.24579	.95	2.79348 < LC < 6.74250
50 = 6.73629	.95	4.77610 < LC < 9.18111
60 = 8.65033	.95	6.72958 < LC < 15.17010
70 =11.30916	.95	8.51327 < LC < 29.66168
80 =15.47917	.95	10.65444 < LC < 68.45205
90 =23.92231	.95	14.17533 < LC < 223.98240
95 =34.26773	.95	17.80311 < LC < 600.70810
96 =38.04908	.95	19.01218 < LC < 801.19130
97 =43.27387	.95	20.60572 < LC < 1141.84700
98 =51.34552	.95	22.92360 < LC < 1829.35700
99 =67.22915	.95	27.09874 < LC < 3847.41300

Regression line: Y = A +Slope * (X- M)

A = 5.025113 +/- 0.1291015

Slope = 2.328797 +/- 0.7579814

M = 10.8392

4.896012<A<5.154214

1.570816<B<3.086779

Heterogeneity = 1

Appendix Table 23 The lethal time values for pupae of *Platydema waterhousei* Gelbien when exposed to G2 (80%CO_2: 20%N_2) atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 0.88700	.95	0.05314 < LC < 1.91988
2 = 1.12734	.95	0.09332 < LC < 2.24148
3 = 1.31260	.95	0.13335 < LC < 2.47394
4 = 1.47178	.95	0.17438 < LC < 2.66532
5 = 1.61542	.95	0.21685 < LC < 2.83247
10 = 2.22400	.95	0.45744 < LC < 3.49758
20 = 3.27583	.95	1.12027 < LC < 4.55403
30 = 4.33101	.95	2.10452 < LC < 5.59363
40 = 5.49714	.95	3.49332 < LC < 6.88133
50 = 6.86687	.95	5.19699 < LC < 9.00499
60 = 8.57788	.95	6.85210 < LC < 13.29641
70 =10.88750	.95	8.45719 < LC < 21.99869
80 =14.39449	.95	10.40090 < LC < 41.27422
90 =21.20224	.95	13.55026 < LC < 101.02210
95 =29.18992	.95	16.73528 < LC < 213.06310
96 =32.03859	.95	17.78537 < LC < 264.95500
97 =35.92408	.95	19.16188 < LC < 346.46220
98 =41.82759	.95	21.14997 < LC < 495.04740
99 =53.16129	.95	24.69385 < LC < 869.32730

Regression line: Y = A +Slope * (X- M)

A = 5.008641 +/- 0.1300722

Slope = 2.617787 +/- 0.7685874

M = 10.86006

4.878568<A<5.138713

1.8492<B<3.386375

Heterogeneity = 1

Appendix Table 24 The lethal time values for pupae of *Platydema waterhousei* Gelbien when exposed to G3 (60%CO_2: 40%N_2) atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 0.70591	.95	0.00656 < LC < 1.81422
2 = 0.93687	.95	0.01540 < LC < 2.15612
3 = 1.12120	.95	0.02646 < LC < 2.40694
4 = 1.28342	.95	0.03974 < LC < 2.61559
5 = 1.43255	.95	0.05531 < LC < 2.79933
10 = 2.08940	.95	0.17164 < LC < 3.54391
20 = 3.30037	.95	0.66840 < LC < 4.77341
30 = 4.58902	.95	1.73497 < LC < 6.07496
40 = 6.08077	.95	3.64216 < LC < 8.02815
50 = 7.90713	.95	5.93983 < LC < 12.75536
60 =10.28206	.95	7.82689 < LC < 25.08252
70 =13.62443	.95	9.69568 < LC < 56.17216
80 =18.94416	.95	12.09353 < LC < 148.77180
90 =29.92381	.95	16.15455 < LC < 584.16010
95 =43.64454	.95	20.39844 < LC < 1817.38600
96 =48.71579	.95	21.82106 < LC < 2530.67000
97 =55.76414	.95	23.70120 < LC < 3802.65100
98 =66.73580	.95	26.44504 < LC < 6535.70300
99 =88.57000	.95	31.41052 < LC < %15353.24000

Regression line: Y = A +Slope * (X- M)

A = 4.886163 +/- 0.1290825

Slope = 2.217534 +/- 0.7564681

M = 10.84669

4.757081<A<5.015246

1.461066<B<2.974002

Heterogeneity = 1

% denotes an approximate value

Appendix Table 25 The lethal time values for pupae of *Platydema waterhousei* Gelbien when exposed to G4 (100%N_2) atmospheres, at 25.7±4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 1.11279	.95	0.13306 < LC < 2.15420
2 = 1.38531	.95	0.21227 < LC < 2.49207
3 = 1.59190	.95	0.28537 < LC < 2.73462
4 = 1.76739	.95	0.35642 < LC < 2.93338
5 = 1.92433	.95	0.42699 < LC < 3.10640
10 = 2.57711	.95	0.79215 < LC < 3.79037
20 = 3.67101	.95	1.65922 < LC < 4.86808
30 = 4.73778	.95	2.78089 < LC < 5.92879
40 = 5.89084	.95	4.18179 < LC < 7.25089
50 = 7.21853	.95	5.72259 < LC < 9.35545
60 = 8.84549	.95	7.18921 < LC < 13.14862
70 =10.99825	.95	8.67594 < LC < 20.03786
80 =14.19430	.95	10.50695 < LC < 33.77349
90 =20.21930	.95	13.45806 < LC < 70.93221
95 =27.07822	.95	16.40662 < LC < 131.71190
96 =29.48263	.95	17.37136 < LC < 157.81580
97 =32.73280	.95	18.63079 < LC < 197.14530
98 =37.61411	.95	20.44042 < LC < 265.08180
99 =46.82594	.95	23.64141 < LC < 422.95700

Regression line: Y = A +Slope * (X- M)

A = 4.957725 +/- 0.131058

Slope = 2.86537 +/- 0.7793037

M = 10.8437

4.826667<A<5.088784

2.086066<B<3.644673

Heterogeneity = 1

Appendix Table 26 The lethal time values for adults of *Platydema waterhousei* Gelbien when exposed to G1 (100%CO_2) atmospheres, at 25.7±4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 0.11811	.95	0.02542 < LC < 0.22523
2 = 0.14462	.95	0.03591 < LC < 0.26050
3 = 0.16445	.95	0.04469 < LC < 0.28578
4 = 0.18114	.95	0.05268 < LC < 0.30646
5 = 0.19596	.95	0.06021 < LC < 0.32443
10 = 0.25671	.95	0.09514 < LC < 0.39505
20 = 0.35603	.95	0.16489 < LC < 0.50356
30 = 0.45072	.95	0.24384 < LC < 0.60306
40 = 0.55127	.95	0.33825 < LC < 0.70823
50 = 0.66523	.95	0.45424 < LC < 0.83157
60 = 0.80274	.95	0.59874 < LC < 0.99474
70 = 0.98182	.95	0.77809 < LC < 1.24699
80 = 1.24294	.95	1.00283 < LC < 1.71349
90 = 1.72385	.95	1.33781 < LC < 2.83767
95 = 2.25824	.95	1.65551 < LC < 4.41190
96 = 2.44301	.95	1.75792 < LC < 5.02727
97 = 2.69099	.95	1.89097 < LC < 5.90746
98 = 3.05999	.95	2.08125 < LC < 7.32840
99 = 3.74687	.95	2.41627 < LC < 10.31166

Regression line: Y = A +Slope * (X- M)

A = 5.503271 +/- 0.1468428

Slope = 3.099495 +/- 0.6601092

M = 9.985342

5.356428<A<5.650114

2.439386<B<3.759604

Heterogeneity = 1

Appendix Table 27 The lethal time values for adults of *Platydema waterhousei* Gelbien when exposed to G2 (80%CO_2: 20%N_2) atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 0.12322	.95	0.02375 < LC < 0.24077
2 = 0.15351	.95	0.03485 < LC < 0.28154
3 = 0.17648	.95	0.04443 < LC < 0.31103
4 = 0.19600	.95	0.05334 < LC < 0.33531
5 = 0.21346	.95	0.06187 < LC < 0.35651
10 = 0.28614	.95	0.10280 < LC < 0.44075
20 = 0.40807	.95	0.18914 < LC < 0.57297
30 = 0.52709	.95	0.29138 < LC < 0.69745
40 = 0.65583	.95	0.41705 < LC < 0.83360
50 = 0.80417	.95	0.57261 < LC < 1.00196
60 = 0.98607	.95	0.76175 < LC < 1.24300
70 = 1.22691	.95	0.98394 < LC < 1.64619
80 = 1.58476	.95	1.25540 < LC < 2.41958
90 = 2.26003	.95	1.67573 < LC < 4.33546
95 = 3.02955	.95	2.09101 < LC < 7.13747
96 = 3.29946	.95	2.22716 < LC < 8.26442
97 = 3.66444	.95	2.40534 < LC < 9.90219
98 = 4.21280	.95	2.66233 < LC < 12.60191
99 = 5.24824	.95	3.12002 < LC < 18.45120

Regression line: Y = A +Slope * (X- M)

A = 5.325021 +/- 0.1384964

Slope = 2.856124 +/- 0.6274611

M = 10.01915

5.186525<A<5.463517

2.228663<B<3.483585

Heterogeneity = 1

Appendix Table 28 The lethal time values for adults of *Platydema waterhousei* Gelbien when exposed to G3 (60%CO_2: 40%N_2) atmospheres, at 25.7± 4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 0.08816	.95	0.00482 < LC < 0.21825
2 = 0.11718	.95	0.00882 < LC < 0.26368
3 = 0.14037	.95	0.01294 < LC < 0.29743
4 = 0.16080	.95	0.01726 < LC < 0.32574
5 = 0.17959	.95	0.02181 < LC < 0.35083
10 = 0.26248	.95	0.04862 < LC < 0.45366
20 = 0.41564	.95	0.12725 < LC < 0.62478
30 = 0.57898	.95	0.25099 < LC < 0.79837
40 = 0.76836	.95	0.43680 < LC < 1.01023
50 = 1.00058	.95	0.69229 < LC < 1.33140
60 = 1.30297	.95	0.98868 < LC < 1.94729
70 = 1.72917	.95	1.30410 < LC < 3.25090
80 = 2.40867	.95	1.69618 < LC < 6.29994
90 = 3.81419	.95	2.35579 < LC < 16.34930
95 = 5.57455	.95	3.05478 < LC < 36.33824
96 = 6.22603	.95	3.29178 < LC < 45.89910
97 = 7.13210	.95	3.60702 < LC < 61.18929
98 = 8.54371	.95	4.07099 < LC < 89.72042
99 =11.35652	.95	4.92156 < LC < 164.15340

Regression line: Y = A +Slope * (X- M)

A = 5.100323 +/- 0.1312499

Slope = 2.205493 +/- 0.5977548

M = 10.04574

4.969273<A<5.231573

1.607738<B<2.803248

Heterogeneity = 1

Appendix Table 29 The lethal time values for adults of *Platydema waterhousei* Gelbien when exposed to G4 (100%N_2) atmospheres, at 25.7±4.9°C, 56.5±11.6 % rh and under a 12:12 (L:D) natural photoperiod.

LT	Level of confidence	Range
1 = 0.05528	.95	0.00064 < LC < 0.17324
2 = 0.07660	.95	0.00144 < LC < 0.21317
3 = 0.09422	.95	0.00241 < LC < 0.24326
4 = 0.11010	.95	0.00353 < LC < 0.26875
5 = 0.12497	.95	0.00483 < LC < 0.29150
10 = 0.19306	.95	0.01410 < LC < 0.38611
20 = 0.32698	.95	0.05122 < LC < 0.54707
30 = 0.47808	.95	0.12813 < LC < 0.71254
40 = 0.66127	.95	0.27368 < LC < 0.91461
50 = 0.89502	.95	0.52375 < LC < 1.22478
60 = 1.21139	.95	0.86504 < LC < 1.90044
70 = 1.67556	.95	1.22447 < LC < 3.68093
80 = 2.44989	.95	1.65313 < LC < 8.88316
90 = 4.14917	.95	2.37905 < LC < 31.76141
95 = 6.41013	.95	3.16691 < LC < 92.26002
96 = 7.27589	.95	3.43813 < LC < 126.00640
97 = 8.50197	.95	3.80179 < LC < 184.93190
98 =10.45723	.95	4.34265 < LC < 308.14440
99 =14.49068	.95	5.34953 < LC < 689.72900

Regression line: Y = A +Slope * (X- M)

A = 5.167372 +/- 0.1303968

Slope = 1.924144 +/- 0.5855311

M = 10.03882

5.036976<A<5.297769

1.338613<B<2.509675

Heterogeneity = 1