The effect of Jade Dragon Wings organic green tea mass per set volume of distilled water on the growth of Broad bean plant (*Vicia faba*)

APPENDIX

SEEDLING LENGTH DATA

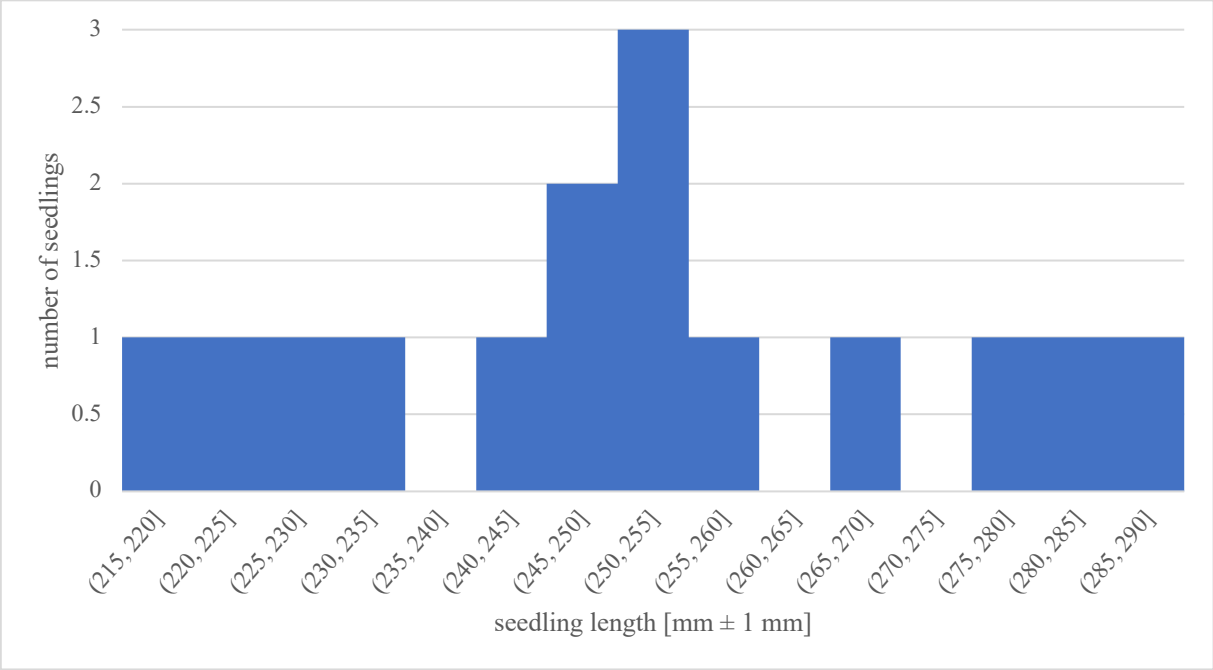
Table 1: raw data for seedling length at different tea masses per set distilled water volume.

Jade Dragon Wings organic tea mass [g ± 0.05 g /100 cm^3 ± 5 cm^3 distilled water]	0.00	2.00	4.00	6.00	8.00	10.00
seedling length [mm ± 1 mm]	218	221	251	276	304	298
	221	237	256	287	297	304
	230	238	263	299	311	311
	234	251	270	305	317	320
	242	268	281	307	326	328
	246	279	285	307	329	339
	250	283	286	318	330	340
	252	287	291	328	330	342
	252	289	294	331	331	345
	253	293	297	333	338	348
	259	294	302	335	340	353
	270	295	323	340	354	364
	278	296	324	340	369	368
	285	300	331	345	362	372
	286	305	339	353	375	374
	/	317	/	358	376	379
	/	/	/	/	/	/
	/	/	/	/	/	/
	/	/	/	/	/	/
	/	/	/	/	/	/

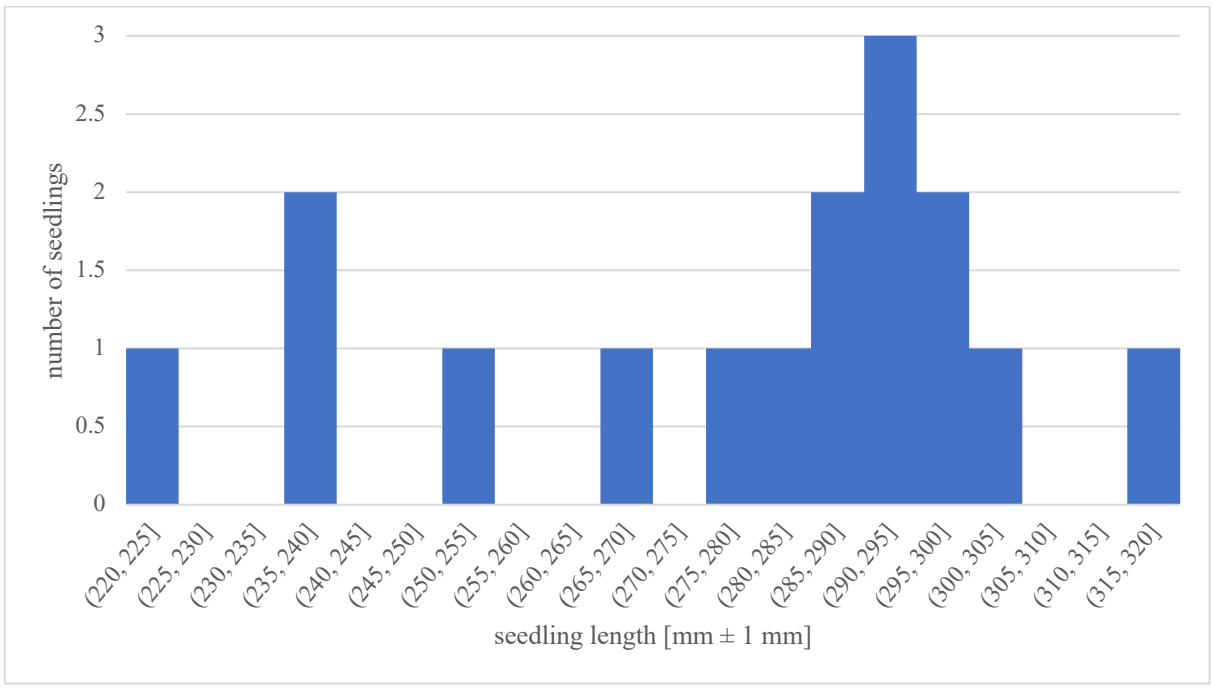
where / means that the planted seed did not germinate.

All histograms, made with Microsoft Excel and used to check for normal distribution are following.

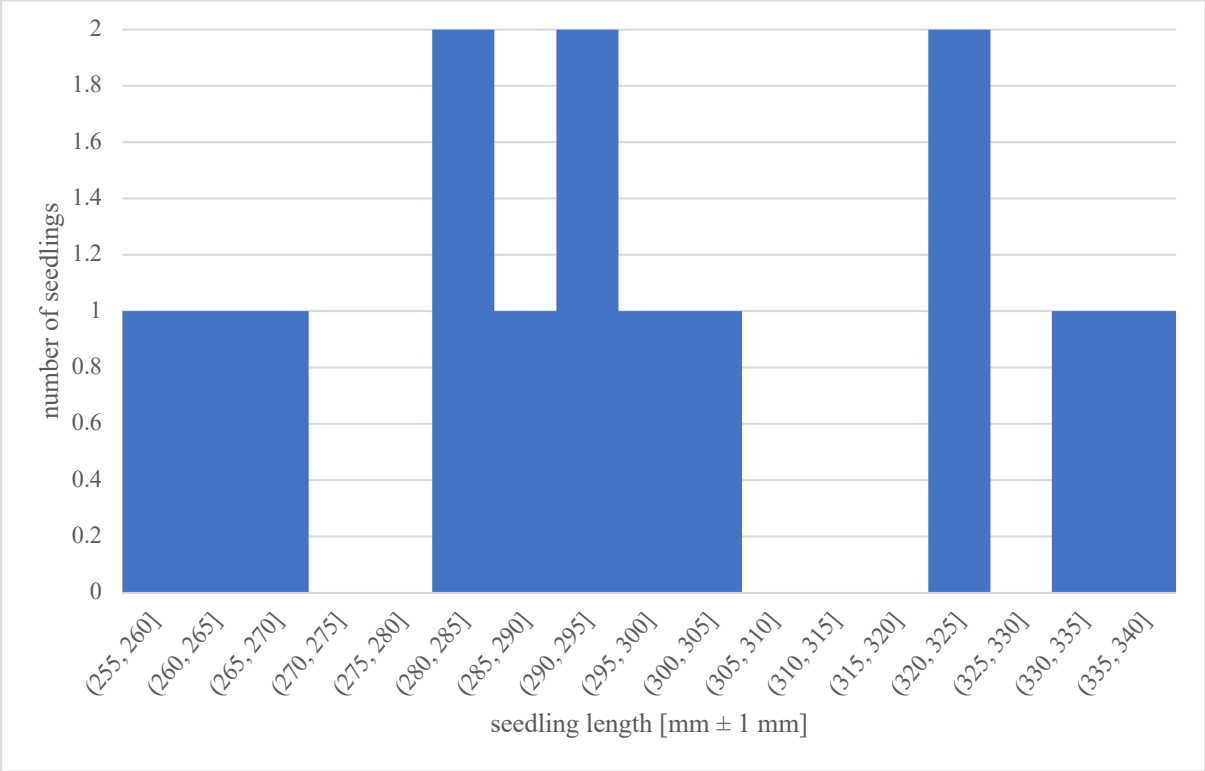
Graph 1: number of seeds within a certain seedling length at 0.00 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.



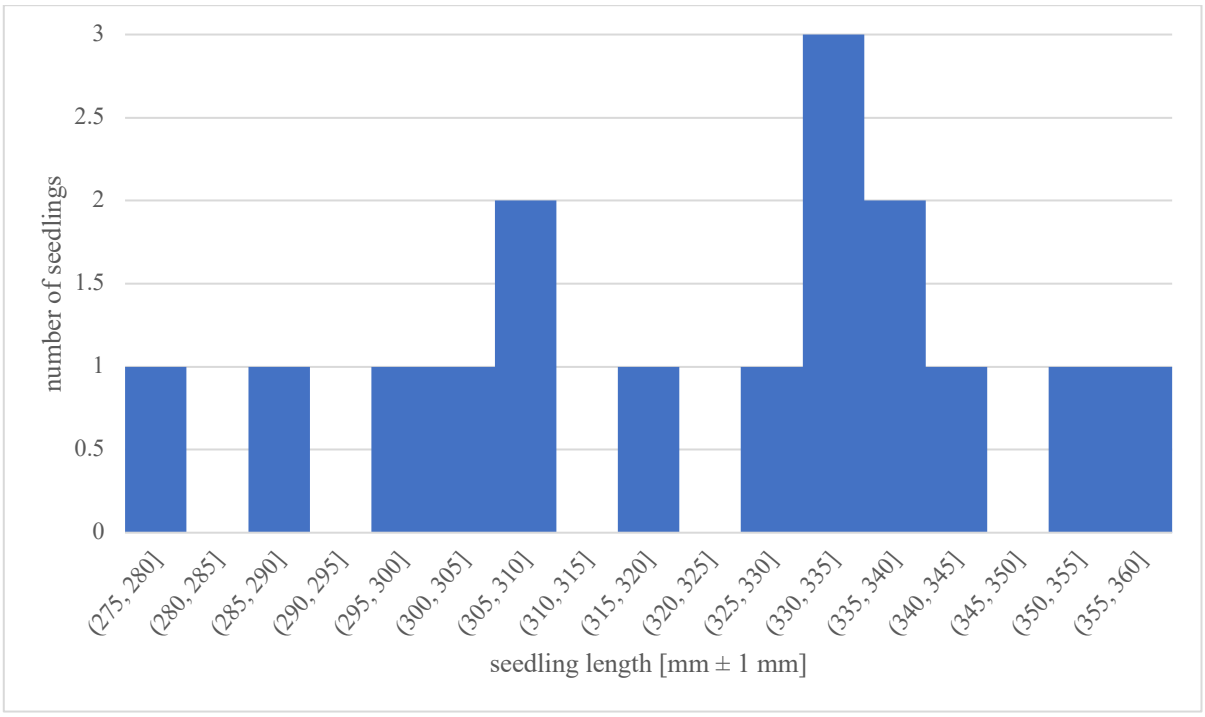
Graph 2: number of seeds within a certain seedling length at 2.00 g ± 0.05 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.



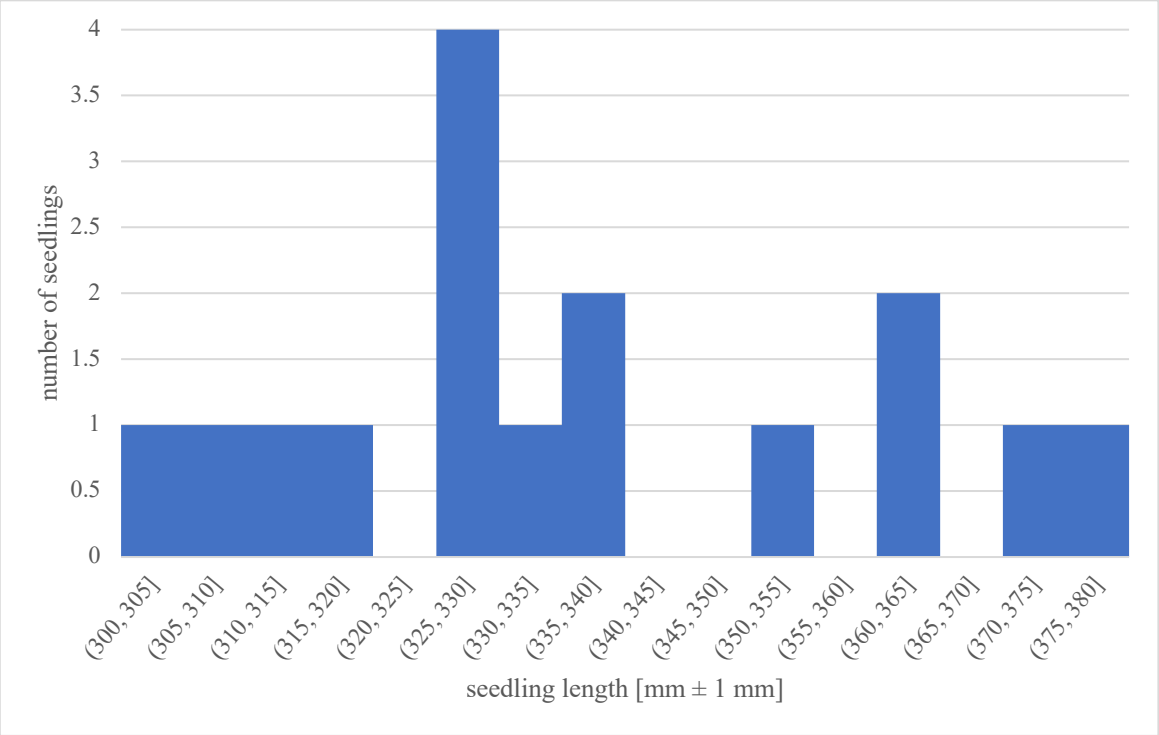
Graph 3: number of seeds within a certain seedling length at 4.00 g ± 0.05 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.



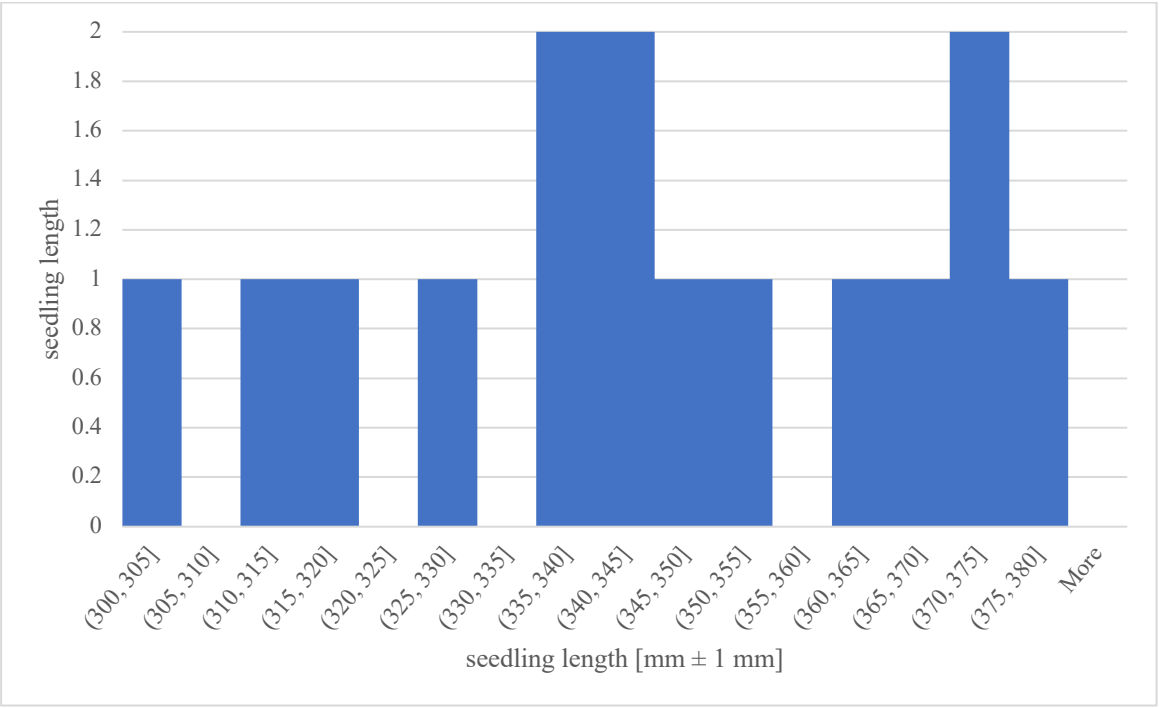
Graph 4: number of seeds within a certain seedling length at 6.00 g ± 0.05 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.



Graph 5: number of seeds within a certain seedling length at 8.00 g ± 0.05 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.



Graph 6: number of seeds within a certain seedling length at 10.00 ± 0.05 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.



STATISTICAL ANALYSIS OF SEEDLING LENGTH DATA

1.1 ONE-WAY ANOVA

Table 2: results of the one-way ANOVA statistical test for seedling length.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	100201.739	5	20040.348	31.941	<0.001
Within Groups	55212.729	88	627.417		
Total	155414.468	93			

1.2 POST HOC TUKEY-KRAMER

Table 3: results of the Tukey-Kramer post hoc test for seedling length data.

(I) concentration	(J) concentration	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
.00	2.00	-26.57917*	9.00230	0.045	-52.8071	-.3513
	4.00	-41.13333*	9.14635	<0.001	-67.7809	-14.4858
	6.00	-70.89167*	9.00230	<0.001	-97.1196	-44.6638
	8.00	-85.07917*	9.00230	<0.001	-111.3071	-58.8513
	10.00	-91.07917*	9.00230	<0.001	-117.3071	-64.8513
2.00	.00	26.57917*	9.00230	0.045	.3513	52.8071
	4.00	-14.55417	9.00230	0.590	-40.7821	11.6737
	6.00	-44.31250*	8.85591	<0.001	-70.1139	-18.5111
	8.00	-58.50000*	8.85591	<0.001	-84.3014	-32.6986
	10.00	-64.50000*	8.85591	<0.001	-90.3014	-38.6986
4.00	.00	41.13333*	9.14635	<0.001	14.4858	67.7809
	2.00	14.55417	9.00230	0.590	-11.6737	40.7821
	6.00	-29.75833*	9.00230	0.017	-55.9862	-3.5304
	8.00	-43.94583*	9.00230	<0.001	-70.1737	-17.7179
	10.00	-49.94583*	9.00230	<0.001	-76.1737	-23.7179
6.00	.00	70.89167*	9.00230	<0.001	44.6638	97.1196
	2.00	44.31250*	8.85591	<0.001	18.5111	70.1139
	4.00	29.75833*	9.00230	0.017	3.5304	55.9862
	8.00	-14.18750	8.85591	0.599	-39.9889	11.6139
	10.00	-20.18750	8.85591	0.214	-45.9889	5.6139
8.00	.00	85.07917*	9.00230	<0.001	58.8513	111.3071
	2.00	58.50000*	8.85591	<0.001	32.6986	84.3014
	4.00	43.94583*	9.00230	<0.001	17.7179	70.1737
	6.00	14.18750	8.85591	0.599	-11.6139	39.9889
	10.00	-6.00000	8.85591	0.984	-31.8014	19.8014
10.00	.00	91.07917*	9.00230	<0.001	64.8513	117.3071
	2.00	64.50000*	8.85591	<0.001	38.6986	90.3014
	4.00	49.94583*	9.00230	<0.001	23.7179	76.1737
	6.00	20.18750	8.85591	0.214	-5.6139	45.9889
	8.00	6.00000	8.85591	0.984	-19.8014	31.8014

* The mean difference is significant at the 0.05 level.

Red-coloured square means that the difference in seedling length between groups is not statistically significant, while green-coloured square means that the difference in seedling length between groups is statistically significant.

LEAF LENGTH DATA

Table 4: raw data for leaf length at 0.00 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.

Jade Dragon Wings organic tea mass [g ± 0.05 g /100 cm^3 ± 5 cm^3 distilled water]	0.00			
leaf length [mm ± 1 mm]	17	28	33	42
	19	28	33	42
	19	29	33	43
	19	29	34	43
	20	29	34	43
	21	29	35	44
	21	29	35	44
	21	29	35	44
	22	29	35	45
	22	29	35	45
	23	29	36	45
	24	30	36	46
	24	30	36	46
	24	30	36	47
	24	31	37	47
	24	31	37	
	25	31	38	
	25	31	38	
	25	31	38	
	25	32	39	
	26	32	39	
	26	32	41	
	26	32	41	
	27	32	42	

Table 5: raw data for leaf length at 2.00 g ± 0.05 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.

Jade Dragon Wings organic tea mass [g ± 0.05 g /100 cm^3 ± 5 cm^3 distilled water]	2.00			
leaf length [mm ± 1 mm]	2	30	40	44
	22	30	40	44
	23	30	40	44
	23	31	40	44
	24	31	41	44
	24	31	41	45
	25	31	41	45
	25	32	41	45
	25	33	41	45
	26	35	41	45
	26	36	41	45
	27	36	41	45
	27	38	42	46
	27	38	42	46
	28	38	42	46
	28	38	42	46
	28	38	42	46
	28	39	42	46
	28	39	42	47
	28	39	42	47
	28	40	43	47
	29	40	43	47
	29	40	44	51
	29	40	44	53

Table 6: raw data for leaf length at 4.00 g± 0.05 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.

Jade Dragon Wings organic tea mass [g ± 0.05 g /100 cm^3 ± 5 cm^3 distilled water]	4.00			
leaf length [mm ± 1 mm]	22	35	42	47
	24	35	42	47
	25	36	42	47
	25	37	42	47
	25	37	43	47
	26	38	43	47
	27	38	43	48
	27	38	43	48
	28	38	44	48
	28	39	44	49
	28	39	44	49
	29	39	44	50
	29	39	44	50
	29	39	45	51
	30	40	45	51
	30	40	45	52
	31	40	45	
	31	40	45	
	32	40	45	
	32	40	46	
	32	41	46	
	33	41	46	
	34	41	46	
	35	41	46	

Table 7: raw data for leaf length at 6.00 g ± 0.05 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.

Jade Dragon Wings organic tea mass [g ± 0.05 g /100 cm^3 ± 5 cm^3 distilled water]	6.00			
leaf length [mm ± 1 mm]	27	38	45	54
	27	38	45	54
	28	39	45	54
	29	39	45	55
	29	39	46	55
	30	40	46	55
	32	40	46	56
	32	40	47	56
	33	41	48	57
	33	41	49	57
	34	41	49	58
	34	41	50	58
	34	42	50	58
	35	42	50	58
	35	42	51	59
	35	43	51	59
	35	43	51	59
	35	43	51	59
	36	44	52	59
	37	44	52	61
	37	44	53	62
	37	44	53	63
	38	44	53	
	38	45	54	

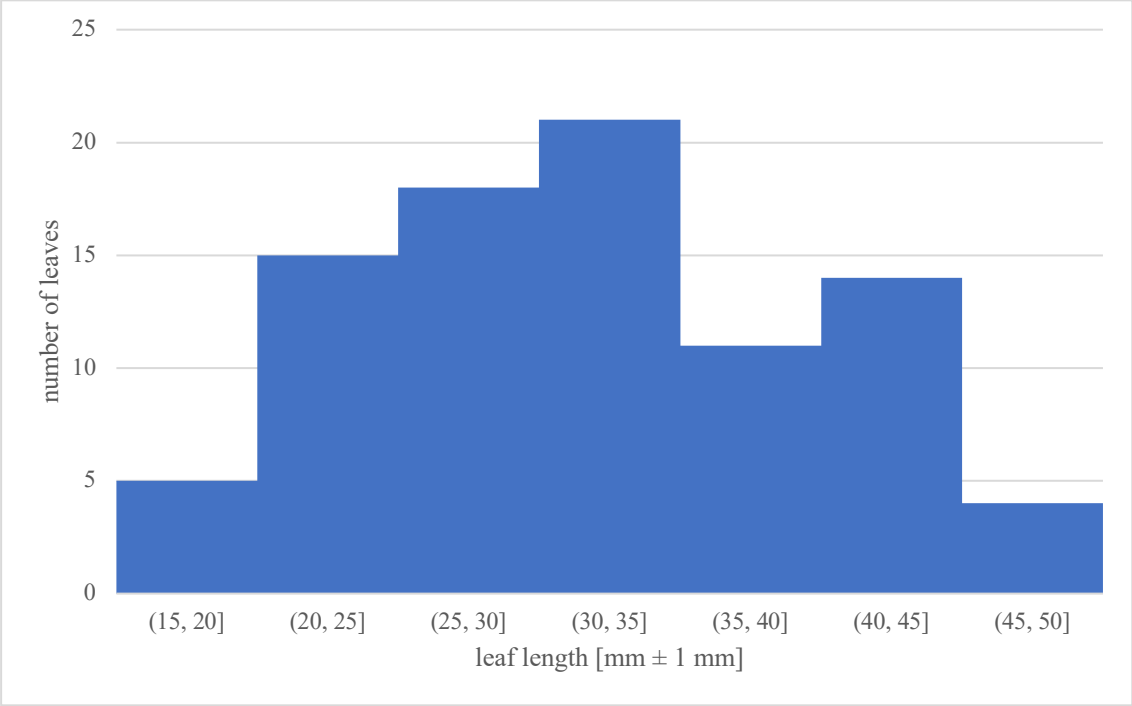
Table 8: raw data for leaf length at 8.00 g ± 0.05 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.

Jade Dragon Wings organic tea mass [g ± 0.05 g /100 cm^3 ± 5 cm^3 distilled water]	8.00			
leaf length [mm ± 1 mm]	26	42	46	56
	27	42	46	56
	28	42	47	57
	30	42	47	58
	30	43	48	58
	31	43	48	58
	32	43	48	58
	33	43	49	59
	33	44	49	59
	34	44	50	60
	34	44	51	60
	34	44	52	60
	34	44	52	61
	35	45	52	62
	36	45	53	62
	37	45	54	63
	39	45	54	64
	40	45	54	65
	40	45	54	65
	40	46	54	65
	41	46	54	66
	41	46	55	66
	41	46	55	67
	41	46	56	

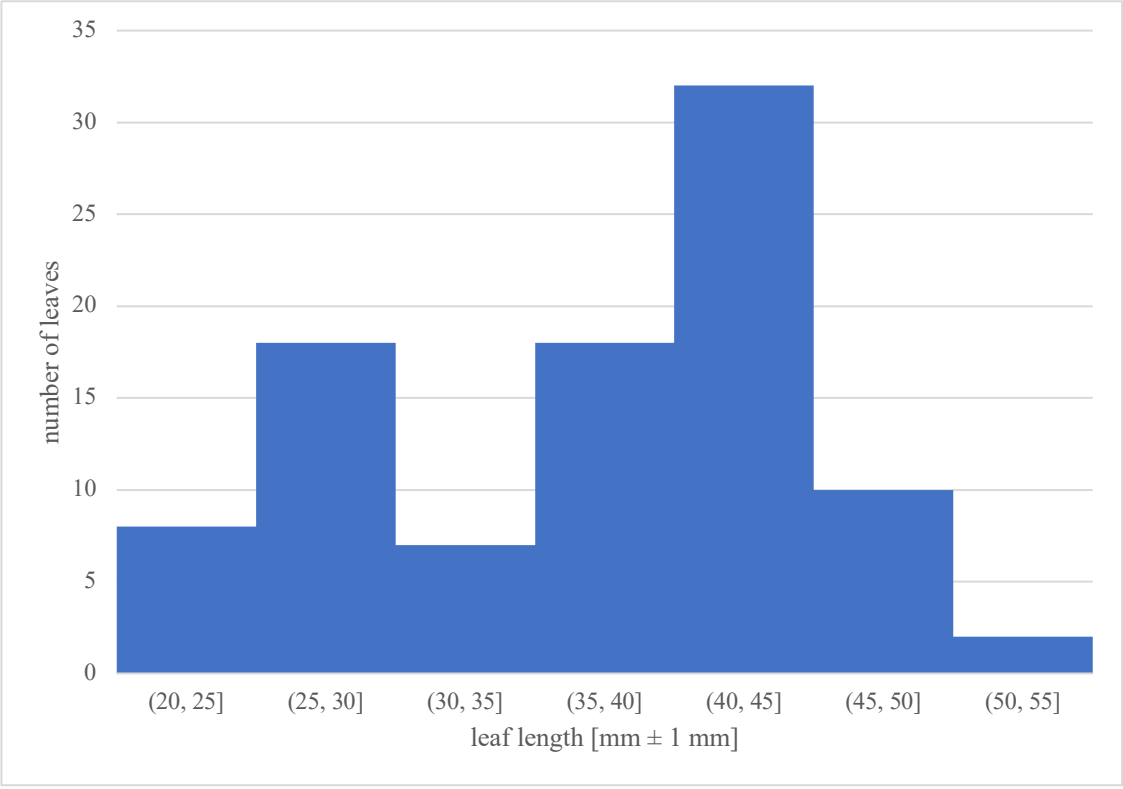
Table 9: raw data for leaf length at 10.00 ± 0.05 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.

Jade Dragon Wings organic tea mass [g ± 0.05 g /100 cm^3 ± 5 cm^3 distilled water]	10.00			
leaf length [mm ± 1 mm]	28	44	52	60
	29	45	52	60
	30	45	52	60
	30	46	53	60
	30	46	53	60
	31	46	53	61
	31	47	54	61
	32	47	54	61
	33	47	54	61
	34	47	54	61
	34	47	54	61
	34	47	55	62
	34	48	56	62
	34	48	56	64
	35	49	56	
	36	49	57	
	37	49	57	
	38	49	58	
	42	49	58	
	43	50	58	
	43	50	59	
	44	50	59	
	44	50	59	
	44	50	60	

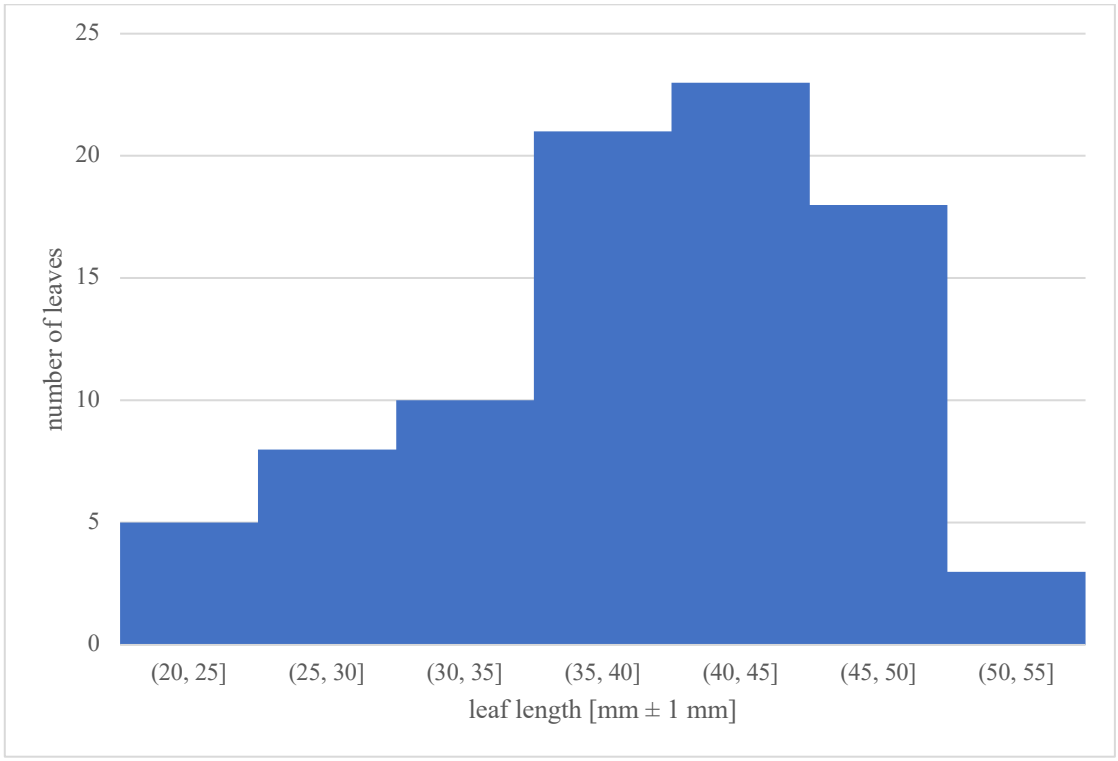
Graph 7: number of leaves within a certain leaf length at 0.00 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.



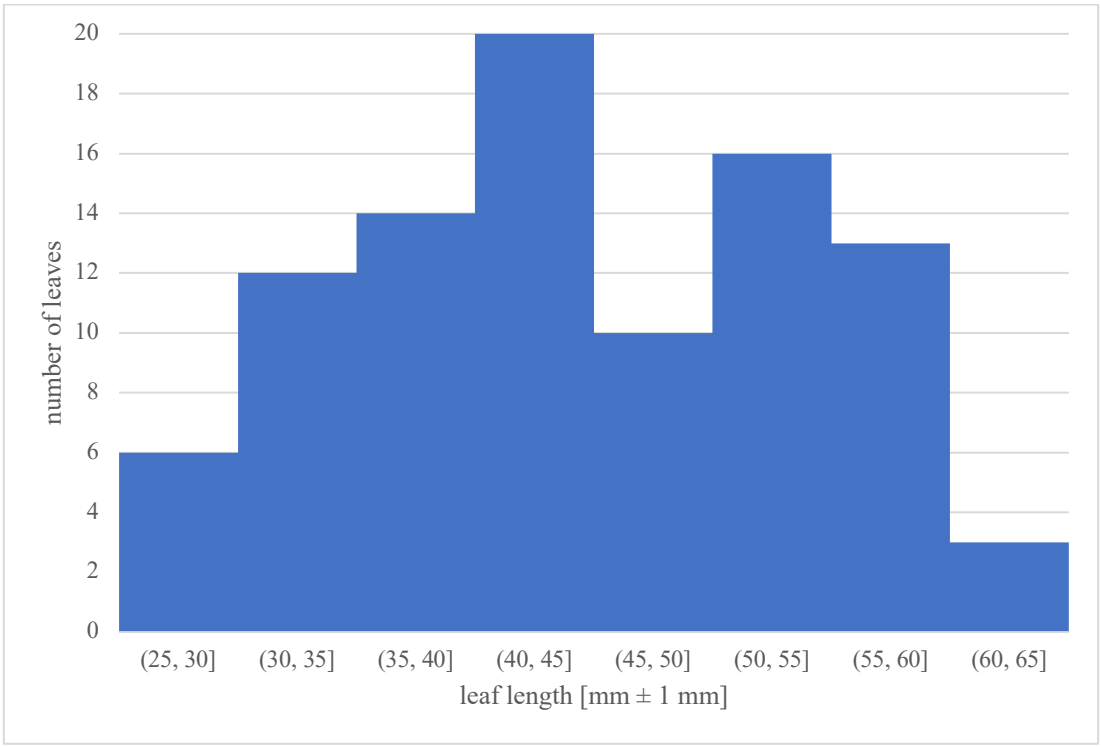
Graph 8: number of leaves within a certain leaf length at 2.00 g ± 0.05 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.



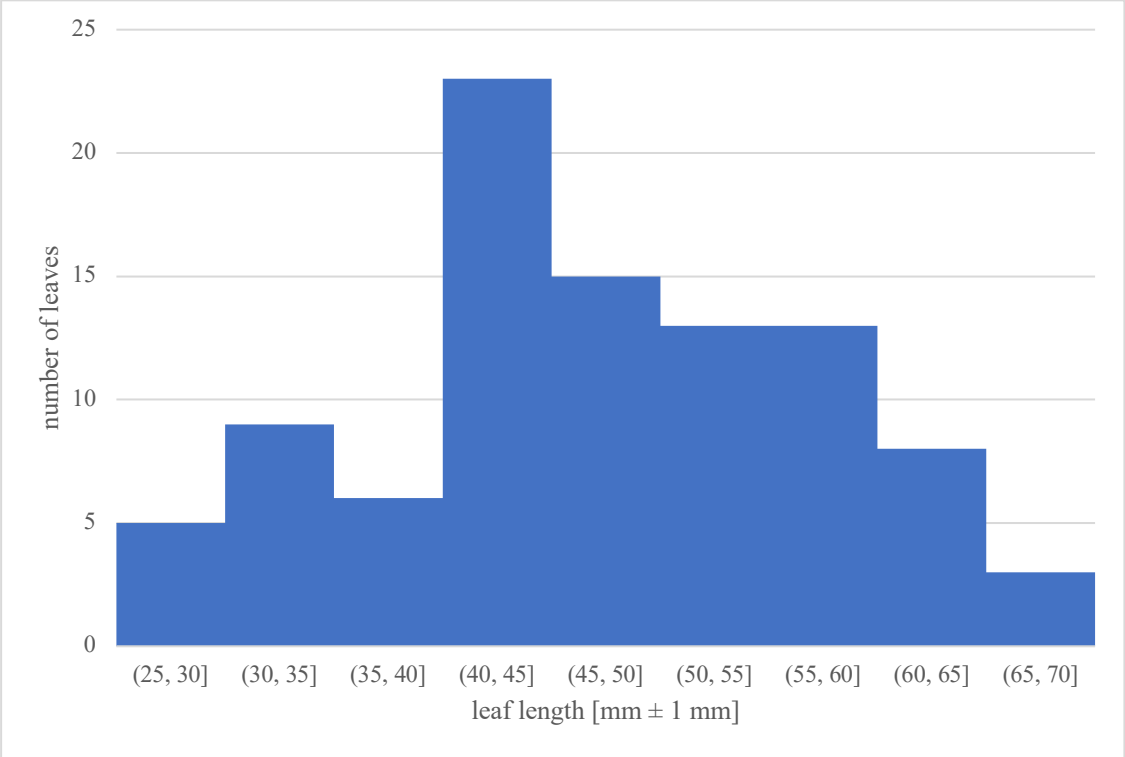
Graph 9: number of leaves within a certain leaf length at 4.00 g ± 0.05 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.



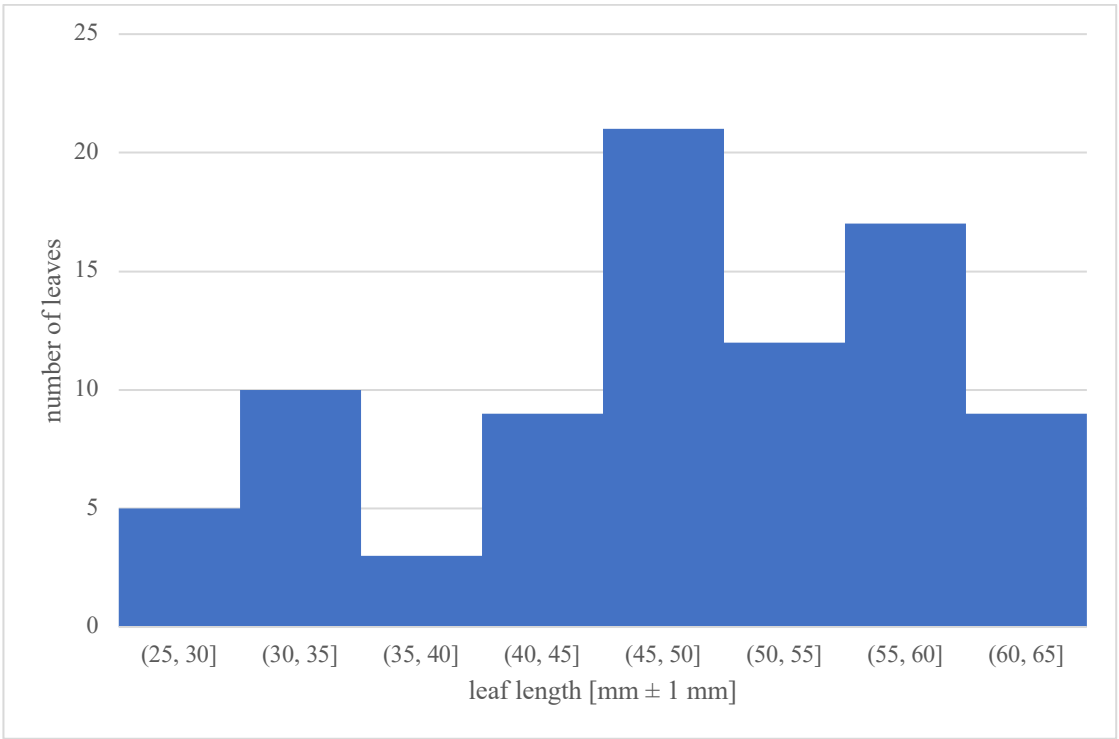
Graph 10: number of leaves within a certain leaf length at 6.00 g ± 0.05 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.



Graph 11: number of leaves within a certain leaf length at 8.00 g ± 0.05 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.



Graph 12: number of leaves within a certain leaf length at 10.00 g ± 0.05 g Jade Dragon Wings organic tea /100 cm^3 ± 5 cm^3 distilled water.



STATISTICAL ANALYSIS OF LEAF LENGTH DATA

1.3 ONE-WAY ANOVA

Table 10: results of the one-way ANOVA statistical test for leaf length.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18520.946	5	3704.189	47.440	<.001
Within Groups	42164.475	540	78.082		
Total	60685.421	545			

1.4 POST HOC TUKEY-KRAMER

Table 11: results of the Tukey-Kramer post hoc test for leaf length data.

(I) concentration	(J) concentration	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
.00	2.00	-5.13194*	1.30737	0.001	-8.8710	-1.3929
	4.00	-6.97727*	1.33214	<0.001	-10.7872	-3.1674
	6.00	-12.80730*	1.31071	<0.001	-16.5559	-9.0587
	8.00	-15.33194*	1.30737	<0.001	-19.0710	-11.5929
	10.00	-16.27563*	1.33986	<0.001	-20.1076	-12.4436
2.00	.00	5.13194*	1.30737	0.001	1.3929	8.8710
	4.00	-1.84533	1.30737	0.720	-5.5844	1.8937
	6.00	-7.67536*	1.28553	<0.001	-11.3520	-3.9988
	8.00	-10.20000*	1.28212	<0.001	-13.8668	-6.5332
	10.00	-11.14370*	1.31524	<0.001	-14.9053	-7.3821
4.00	.00	6.97727*	1.33214	<0.001	3.1674	10.7872
	2.00	1.84533	1.30737	0.720	-1.8937	5.5844
	6.00	-5.83003*	1.31071	<0.001	-9.5786	-2.0814
	8.00	-8.35467*	1.30737	<0.001	-12.0937	-4.6156
	10.00	-9.29836*	1.33986	<0.001	-13.1303	-5.4664
6.00	.00	12.80730*	1.31071	<0.001	9.0587	16.5559
	2.00	7.67536*	1.28553	<0.001	3.9988	11.3520
	4.00	5.83003*	1.31071	<0.001	2.0814	9.5786
	8.00	-2.52464	1.28553	0.365	-6.2012	1.1520
	10.00	-3.46833	1.31856	0.092	-7.2394	.3027
8.00	.00	15.33194*	1.30737	<0.001	11.5929	19.0710
	2.00	10.20000*	1.28212	<0.001	6.5332	13.8668
	4.00	8.35467*	1.30737	<0.001	4.6156	12.0937
	6.00	2.52464	1.28553	0.365	-1.1520	6.2012
	10.00	-.94370	1.31524	0.980	-4.7053	2.8179
10.00	.00	16.27563*	1.33986	<0.001	12.4436	20.1076
	2.00	11.14370*	1.31524	<0.001	7.3821	14.9053
	4.00	9.29836*	1.33986	<0.001	5.4664	13.1303
	6.00	3.46833	1.31856	0.092	-.3027	7.2394
	8.00	.94370	1.31524	0.980	-2.8179	4.7053

* The mean difference is significant at the 0.05 level.

Red-coloured square means that the difference in leaf length between groups is not statistically significant, while green-coloured square means that the difference in leaf length between groups is statistically significant.