

Appendix 4.5: Statistical analysis of pollen germination in different sucrose concentrations in *A. sessilis*.

4.5.1: Test of normality

Characters	Species	Sucrose concentration	Kolmogorov-Smirnov			Shapiro-Wilk			
			Statistic	df	Sig.	Statistic	df	Sig.	
Germination rate	<i>A. sessilis</i> 'Red'								
		10	0.17	10.00	0.20	0.93	10.00	0.40	
		12	0.21	10.00	0.20	0.91	10.00	0.30	
		14	0.24	10.00	0.10	0.90	10.00	0.21	
		16	0.24	10.00	0.12	0.92	10.00	0.34	
		18	0.26	10.00	0.06	0.83	10.00	0.03	
		20	0.26	10.00	0.05	0.82	10.00	0.03	
		22	0.22	10.00	0.20	0.90	10.00	0.19	
		<i>A. sessilis</i> 'Green'	10	0.16	10.00	0.20	0.94	10.00	0.57
	12		0.20	10.00	0.20	0.88	10.00	0.13	
	14		0.18	10.00	0.20	0.91	10.00	0.30	
	16		0.20	10.00	0.20	0.91	10.00	0.27	
	18		0.19	10.00	0.20	0.88	10.00	0.13	
	20		0.17	10.00	0.20	0.94	10.00	0.51	
22	0.23		10.00	0.13	0.84	10.00	0.04		

Characters	Species	Sucrose concentration	Kolmogorov-Smirnov			Shapiro-Wilk		
			Statistic	df	Sig.	Statistic	df	Sig.
The length of tube	<i>A. sessilis</i> 'Red'	10	0.18	10.00	0.20	0.95	10.00	0.70
		12	0.11	10.00	0.20	0.98	10.00	0.97
		14	0.13	10.00	0.20	0.97	10.00	0.85
		16	0.19	10.00	0.20	0.91	10.00	0.28
		18	0.13	10.00	0.20	0.95	10.00	0.64
		20	0.23	10.00	0.13	0.89	10.00	0.18
		22	0.14	10.00	0.20	0.96	10.00	0.79
	<i>A. sessilis</i> 'Green'	10	0.16	10.00	0.20	0.94	10.00	0.57
		12	0.19	10.00	0.20	0.91	10.00	0.25
		14	0.18	10.00	0.20	0.91	10.00	0.30
		16	0.24	10.00	0.11	0.84	10.00	0.05
		18	0.19	10.00	0.20	0.88	10.00	0.13
		20	0.19	10.00	0.20	0.92	10.00	0.35
22		0.23	10.00	0.13	0.84	10.00	0.04	

4.5.2: One way ANOVA and Post Hoc of *A. sessilis*

Test of homogeneity of variances

Variables	Leaf form	Levene Statistic	df1	df2	Sig.
Germination rate	red	5.40	6.00	63.00	0.00
	green	3.19	6.00	63.00	0.01
Length of pollen tube	red	2.17	6.00	63.00	0.06
	green	2.34	6.00	63.00	0.04

ANOVA

	Variables	Leaf form	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	germination rate	red	3116.48	6.00	519.41	8.37	0.00
		green	3.19	6.00	63.00	0.01	
	length of pollen tube	red	23472.33	6.00	3912.06	3.84	0.00
		green	42200.03	6	7033.34	12.84	0.00
Within Groups	germination rate	red	3909.64	63.00	62.06		
		green	6323.55	63.00	100.37		
	length of pollen tube	red	64201.77	63.00	1019.08		
		green	34497.70	63.00	547.58		
Total	germination rate	red	7026.11	69.00			
		green	11854.10	69.00			
	length of pollen tube	red	87674.11	69.00			
		green	76697.72	69			

4.5.2.1: *A. sessilis* 'Red'

A: Games Howell Post Hoc test for germination rate

(I) Sucrose concentration	(J) sucrose concentration	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
10	12	-1.04	1.08	0.96	-4.61	2.54
	14	-16.14	2.30	0.00	-24.26	-8.01
	16	-16.60	2.12	0.00	-24.06	-9.15
	18	-14.48	2.73	0.00	-24.25	-4.71
	20	-9.86	3.01	0.08	-20.72	1.01
	22	-15.66	4.36	0.05	-31.59	0.27
12	10	1.04	1.08	0.96	-2.54	4.61
	14	-15.10	2.29	0.00	-23.22	-6.98
	16	-15.57	2.11	0.00	-23.01	-8.12
	18	-13.44	2.72	0.01	-23.21	-3.68
	20	-8.82	3.01	0.14	-19.68	2.04
	22	-14.62	4.35	0.08	-30.55	1.31
14	10	16.14	2.30	0.00	8.01	24.26
	12	15.10	2.29	0.00	6.98	23.22
	16	-0.47	2.93	1.00	-10.15	9.21
	18	1.66	3.39	1.00	-9.60	12.91
	20	6.28	3.63	0.61	-5.82	18.38
	22	0.48	4.80	1.00	-16.04	17.00
16	10	16.60	2.12	0.00	9.15	24.06
	12	15.57	2.11	0.00	8.12	23.01
	14	0.47	2.93	1.00	-9.21	10.15
	18	2.12	3.28	0.99	-8.80	13.04
	20	6.75	3.52	0.50	-5.07	18.56
	22	0.94	4.72	1.00	-15.43	17.32
18	10	14.48	2.73	0.00	4.71	24.25
	12	13.44	2.72	0.01	3.68	23.21
	14	-1.66	3.39	1.00	-12.91	9.60
	16	-2.12	3.28	0.99	-13.04	8.80
	20	4.63	3.91	0.89	-8.33	17.58
	22	-1.18	5.02	1.00	-18.17	15.82
20	10	9.86	3.01	0.08	-1.01	20.72
	12	8.82	3.01	0.14	-2.04	19.68
	14	-6.28	3.63	0.61	-18.38	5.82
	16	-6.75	3.52	0.50	-18.56	5.07
	18	-4.63	3.91	0.89	-17.58	8.33
	22	-5.80	5.18	0.91	-23.20	11.59
22	10	15.66	4.36	0.05	-0.27	31.59
	12	14.62	4.35	0.08	-1.31	30.55
	14	-0.48	4.80	1.00	-17.00	16.04
	16	-0.94	4.72	1.00	-17.32	15.43
	18	1.18	5.02	1.00	-15.82	18.17
	20	5.80	5.18	0.91	-11.59	23.20

B : Tukey Post Hoc test for the length of pollen tube.

(I) Sucrose concentration	(J) sucrose concentration	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
10	12	0.10	14.28	1.00	-43.38	43.58
	14	-10.60	14.28	0.99	-54.08	32.88
	16	-33.88	14.28	0.23	-77.36	9.60
	18	-21.05	14.28	0.76	-64.53	22.44
	20	23.64	14.28	0.65	-19.85	67.12
12	22	13.99	14.28	0.96	-29.49	57.47
	10	-0.10	14.28	1.00	-43.58	43.38
	14	-10.70	14.28	0.99	-54.18	32.78
	16	-33.99	14.28	0.22	-77.47	9.50
	18	-21.15	14.28	0.75	-64.63	22.33
14	20	23.53	14.28	0.65	-19.95	67.01
	22	13.89	14.28	0.96	-29.59	57.37
	10	10.60	14.28	0.99	-32.88	54.08
	12	10.70	14.28	0.99	-32.78	54.18
	16	-23.28	14.28	0.66	-66.76	20.20
16	18	-10.45	14.28	0.99	-53.93	33.03
	20	34.23	14.28	0.22	-9.25	77.71
	22	24.59	14.28	0.60	-18.89	68.07
	10	33.88	14.28	0.23	-9.60	77.36
	12	33.99	14.28	0.22	-9.50	77.47
18	14	23.28	14.28	0.66	-20.20	66.76
	18	12.84	14.28	0.97	-30.64	56.32
	20	57.52	14.28	0.00	14.04	101.00
	22	47.87	14.28	0.02	4.39	91.35
	10	21.05	14.28	0.76	-22.44	64.53
20	12	21.15	14.28	0.75	-22.33	64.63
	14	10.45	14.28	0.99	-33.03	53.93
	16	-12.84	14.28	0.97	-56.32	30.64
	20	44.68	14.28	0.04	1.20	88.16
	22	35.04	14.28	0.19	-8.44	78.52
22	10	-23.64	14.28	0.65	-67.12	19.85
	12	-23.53	14.28	0.65	-67.01	19.95
	14	-34.23	14.28	0.22	-77.71	9.25
	16	-57.52	14.28	0.00	-101.00	-14.04
	18	-44.68	14.28	0.04	-88.16	-1.20
	22	-9.64	14.28	0.99	-53.12	33.84
	10	-13.99	14.28	0.96	-57.47	29.49
	12	-13.89	14.28	0.96	-57.37	29.59
	14	-24.59	14.28	0.60	-68.07	18.89
	16	-47.87	14.28	0.02	-91.35	-4.39
	18	-35.04	14.28	0.19	-78.52	8.44
	20	9.64	14.28	0.99	-33.84	53.12

4.5.2.2: *A. sessilis* 'Green'

A: Games Howell Post Hoc test for germination rate.

(I) Sucrose concentration	(J) sucrose concentration	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
10	12	-4.59	2.41	0.52	-13.35	4.17
	14	-21.05	3.69	0.00	-34.62	-7.48
	16	-19.26	2.91	0.00	-29.90	-8.62
	18	-21.17	4.80	0.02	-38.87	-3.47
	20	-25.63	3.61	0.00	-38.87	-12.38
12	10	4.59	2.41	0.52	-4.17	13.35
	14	-16.46	4.35	0.02	-31.11	-1.81
	16	-14.67	3.71	0.01	-26.97	-2.37
	18	-16.58	5.32	0.09	-34.92	1.77
	20	-21.03	4.27	0.00	-35.41	-6.65
14	10	21.05	3.69	0.00	7.48	34.62
	12	16.46	4.35	0.02	1.81	31.11
	16	1.79	4.64	1.00	-13.65	17.23
	18	-0.12	6.01	1.00	-20.13	19.90
	20	-4.58	5.11	0.97	-21.45	12.30
16	10	19.26	2.91	0.00	8.62	29.90
	12	14.67	3.71	0.01	2.37	26.97
	14	-1.79	4.64	1.00	-17.23	13.65
	18	-1.91	5.56	1.00	-20.77	16.95
	20	-6.36	4.57	0.80	-21.56	8.83
18	10	21.17	4.80	0.02	3.47	38.87
	12	16.58	5.32	0.09	-1.77	34.92
	14	0.12	6.01	1.00	-19.90	20.13
	16	1.91	5.56	1.00	-16.95	20.77
	20	-4.46	5.96	0.99	-24.32	15.41
20	10	25.63	3.61	0.00	12.38	38.87
	12	21.03	4.27	0.00	6.65	35.41
	14	4.58	5.11	0.97	-12.30	21.45
	16	6.36	4.57	0.80	-8.83	21.56
	18	4.46	5.96	0.99	-15.41	24.32
22	10	11.17	2.77	0.03	1.06	21.27
	12	6.58	3.60	0.55	-5.34	18.49
	14	-9.88	4.55	0.36	-25.08	5.31
	16	-8.09	3.95	0.42	-21.14	4.95
	18	-10.00	5.49	0.56	-28.70	8.69
	20	-14.46	4.49	0.06	-29.40	0.49

B: Games Howell Post Hoc test for the length of pollen tube.

(I) Sucrose concentration	(J) sucrose concentration	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
10	12	-22.67	9.21	0.25	-54.75	9.41
	14	-59.73	11.56	0.00	-97.96	-21.50
	16	-38.13	11.26	0.04	-75.41	-0.86
	18	-17.61	12.89	0.81	-60.31	25.10
	20	-5.94	9.51	0.99	-38.58	26.69
	22	21.80	11.70	0.53	-16.86	60.46
12	10	22.67	9.21	0.25	-9.41	54.75
	14	-37.06	8.74	0.01	-67.33	-6.80
	16	-15.46	8.33	0.54	-44.17	13.24
	18	5.06	10.43	1.00	-31.70	41.82
	20	16.72	5.75	0.11	-2.34	35.78
	22	44.47	8.91	0.00	13.53	75.41
14	10	59.73	11.56	0.00	21.50	97.96
	12	37.06	8.74	0.01	6.80	67.33
	16	21.60	10.88	0.46	-14.36	57.56
	18	42.12	12.56	0.05	0.42	83.82
	20	53.79	9.05	0.00	22.90	84.67
	22	81.53	11.33	0.00	44.09	118.97
16	10	38.13	11.26	0.04	0.86	75.41
	12	15.46	8.33	0.54	-13.24	44.17
	14	-21.60	10.88	0.46	-57.56	14.36
	18	20.52	12.28	0.64	-20.37	61.42
	20	32.19	8.66	0.03	2.78	61.59
	22	59.93	11.02	0.00	23.49	96.37
18	10	17.61	12.89	0.81	-25.10	60.31
	12	-5.06	10.43	1.00	-41.82	31.70
	14	-42.12	12.56	0.05	-83.82	-0.42
	16	-20.52	12.28	0.64	-61.42	20.37
	20	11.66	10.70	0.92	-25.51	48.84
	22	39.41	12.68	0.07	-2.66	81.47
20	10	5.94	9.51	0.99	-26.69	38.58
	12	-16.72	5.75	0.11	-35.78	2.34
	14	-53.79	9.05	0.00	-84.67	-22.90
	16	-32.19	8.66	0.03	-61.59	-2.78
	18	-11.66	10.70	0.92	-48.84	25.51
	22	27.75	9.22	0.10	-3.79	59.28
22	10	-21.80	11.70	0.53	-60.46	16.86
	12	-44.47	8.91	0.00	-75.41	-13.53
	14	-81.53	11.33	0.00	-118.97	-44.09
	16	-59.93	11.02	0.00	-96.37	-23.49
	18	-39.41	12.68	0.07	-81.47	2.66
	20	-27.75	9.22	0.10	-59.28	3.79

Appendix 4.5.3: Pollen germination rate and the pollen tube length in different concentrations of sucrose in *A. sessilis*.

Sucrose concentration (in percent)	<i>A. sessilis</i> 'Red'		N	<i>A. sessilis</i> 'Green'		N
	Germination rate	Length of pollen tube (μm)		Germination rate	Length of pollen tube (μm)	
	Mean \pm sd	Mean \pm sd		Mean \pm sd	Mean \pm sd	
4	0.79 \pm 0.49	35.00 \pm 18.03	3	0.24 \pm 0.21	62.50 \pm 17.68	3
6	1.13 \pm 0.37	26.67 \pm 15.28	3	0.46 \pm 0.16	79.33 \pm 17.93	3
8	1.99 \pm 0.57	81.11 \pm 18.36	3	0.65 \pm 0.11	83.33 \pm 35.12	3
10	3.10 \pm 2.45	103.38 \pm 46.38	10	3.26 \pm 1.68	98.04 \pm 26.67	10
12	4.14 \pm 2.39	103.28 \pm 34.94	10	7.85 \pm 7.44	120.70 \pm 11.71	10
14	19.23 \pm 6.83	113.98 \pm 28.00	10	24.31 \pm 11.56	157.77 \pm 25.02	10
16	19.70 \pm 6.24	137.26 \pm 39.54	10	22.52 \pm 9.05	136.17 \pm 23.60	10
18	17.58 \pm 8.27	124.42 \pm 26.40	10	24.43 \pm 15.09	115.64 \pm 30.84	10
20	12.95 \pm 9.21	79.74 \pm 18.26	10	28.88 \pm 11.28	103.98 \pm 13.91	10
22	18.76 \pm 13.56	89.39 \pm 19.59	10	14.42 \pm 8.60	76.24 \pm 25.64	10