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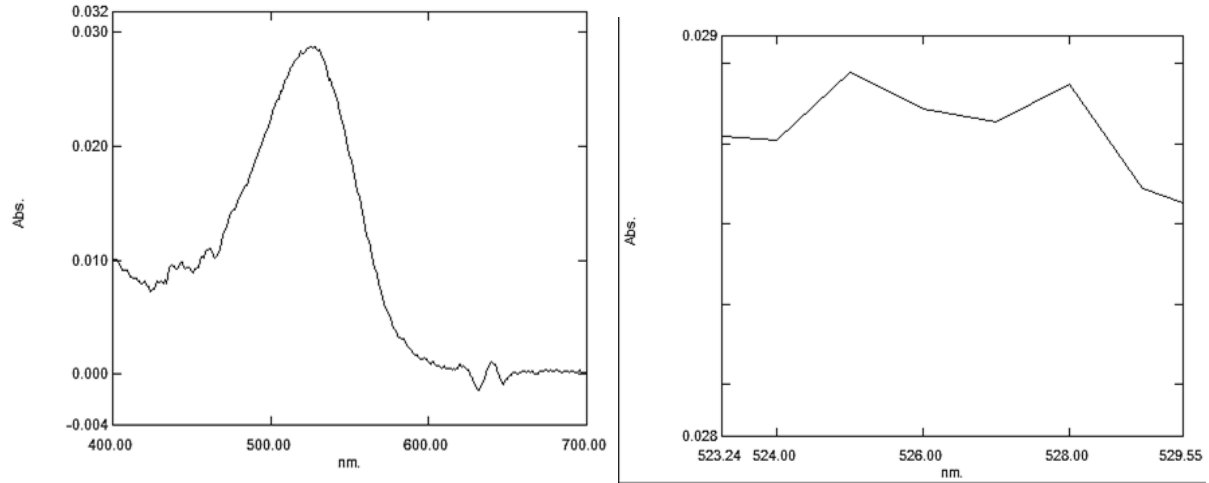
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## APPENDICES

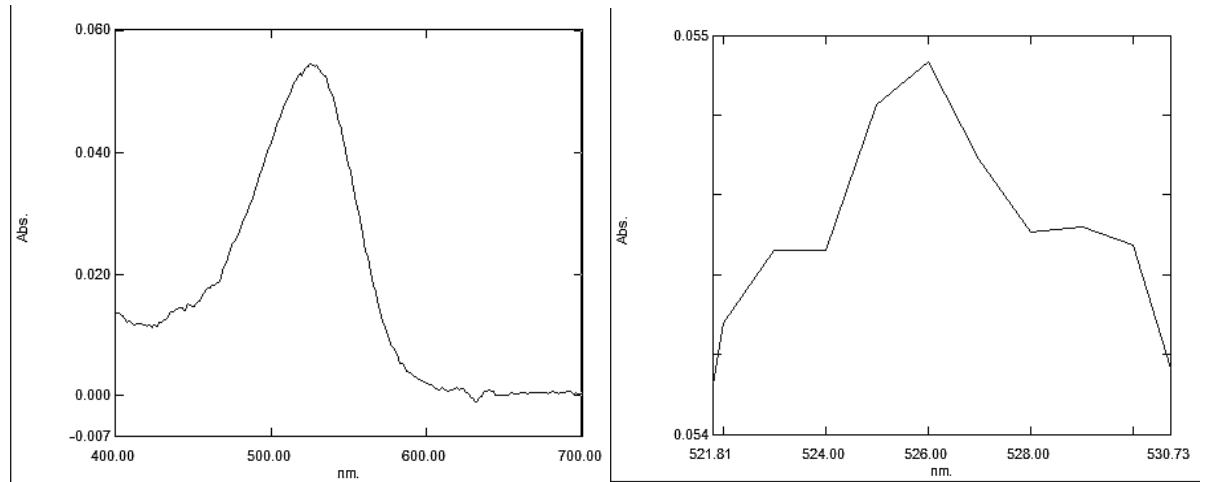
**Appendix 1. Determination of maximum wavelength in PSP on control and blanching treatment on Day 0 (left: whole line graph; right: maximum peak close up of line graph)**

pH 2 Buffer

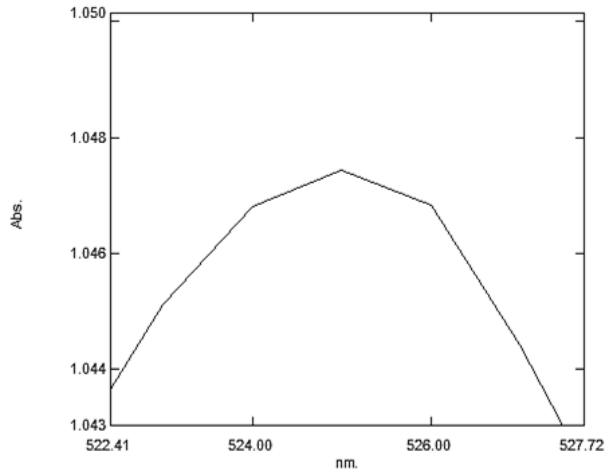
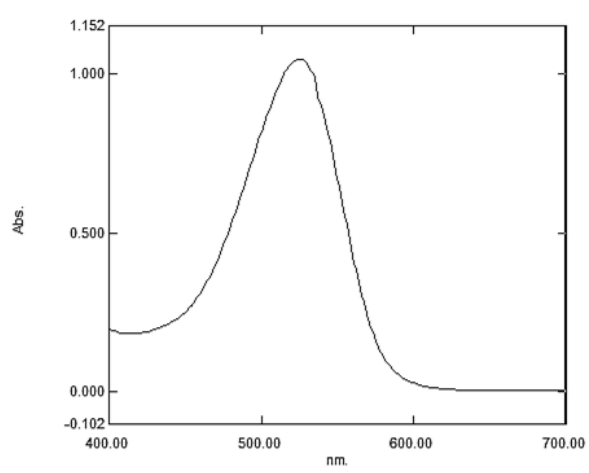
PSPE LC → 528 nm



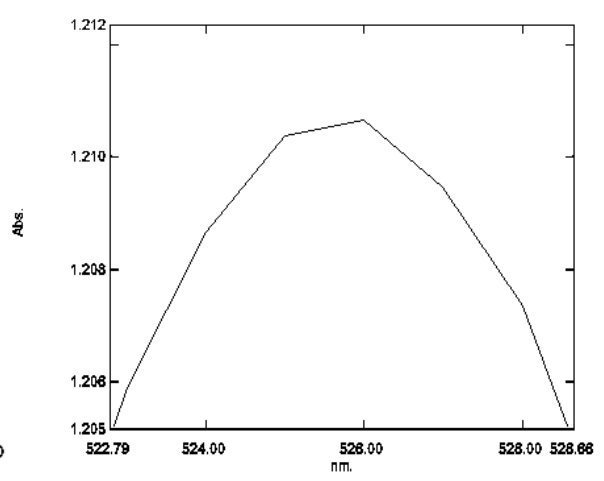
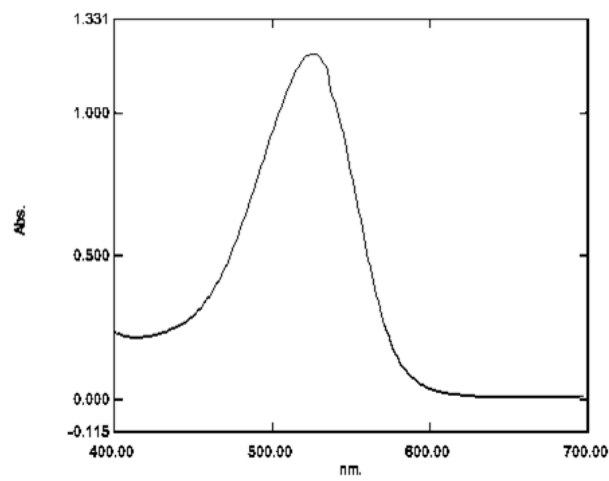
PSPE L000 → 526 nm



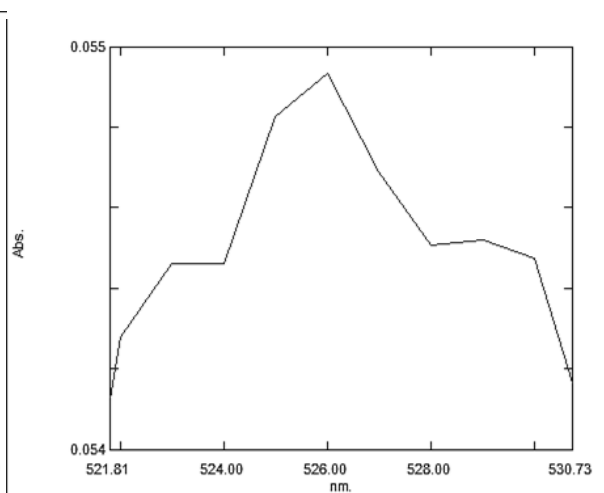
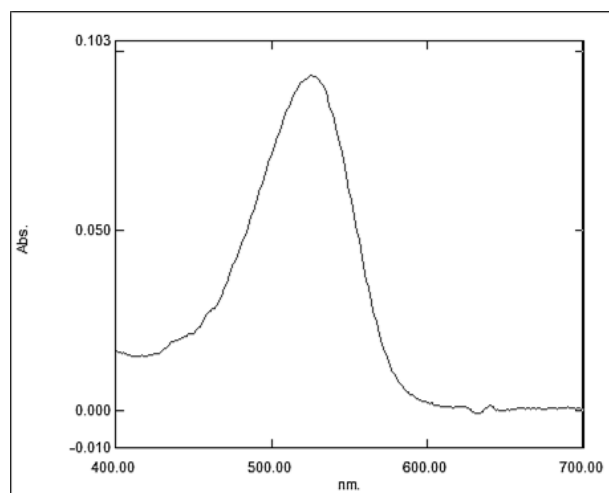
PSPE L001 → 525 nm



PSPE L002 → 526 nm



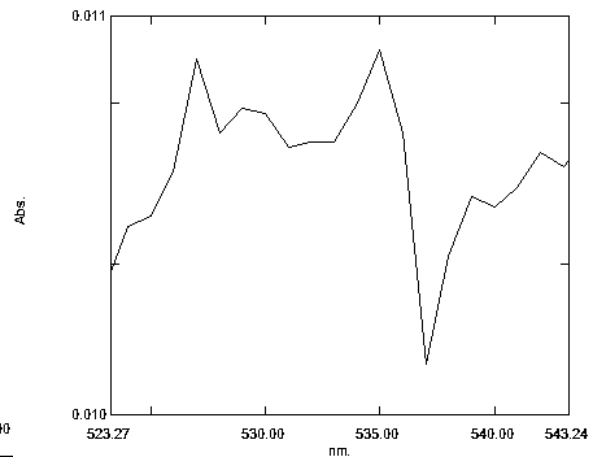
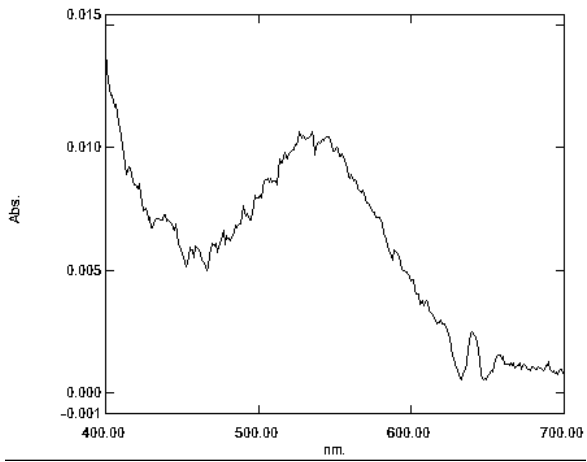
PSPE L003 → 528 nm



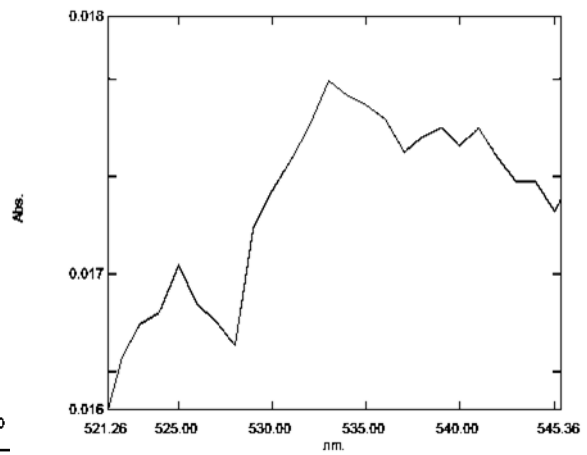
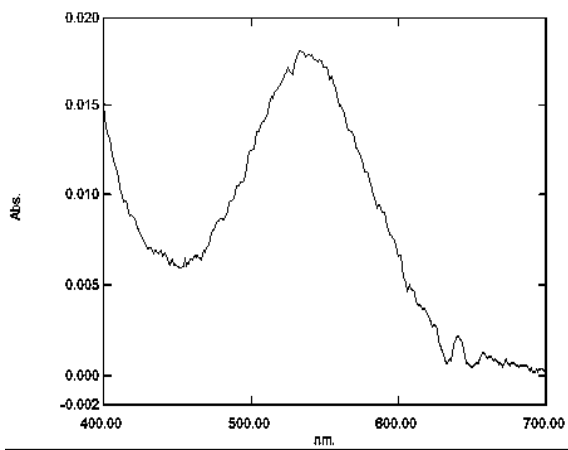


pH 4.5 Buffer

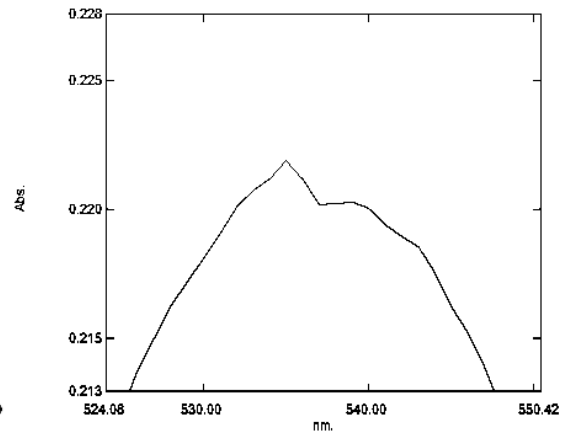
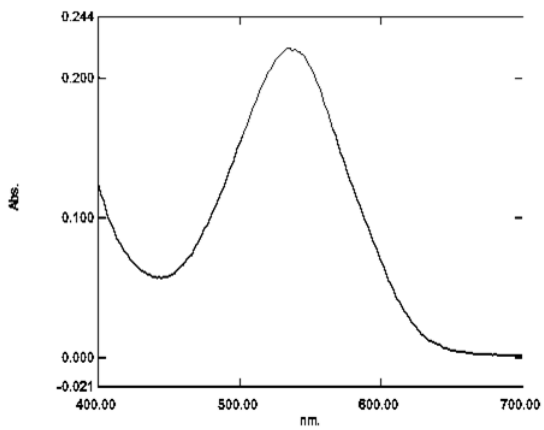
PSPE LC → 535 nm



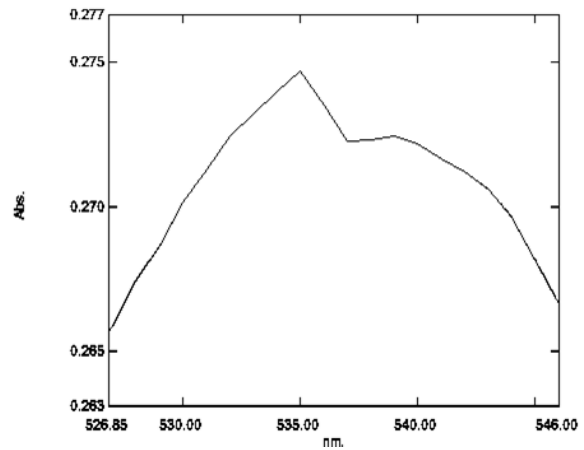
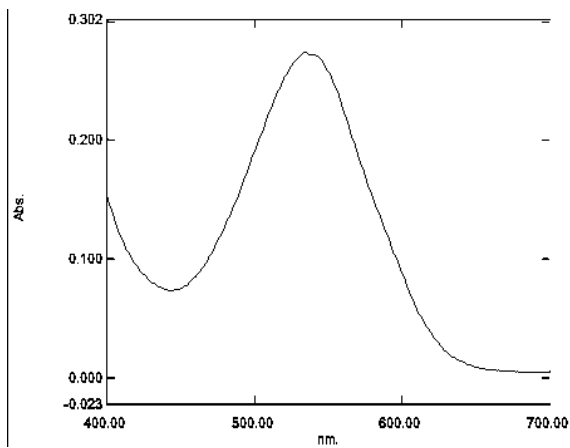
PSPE L000 → 535



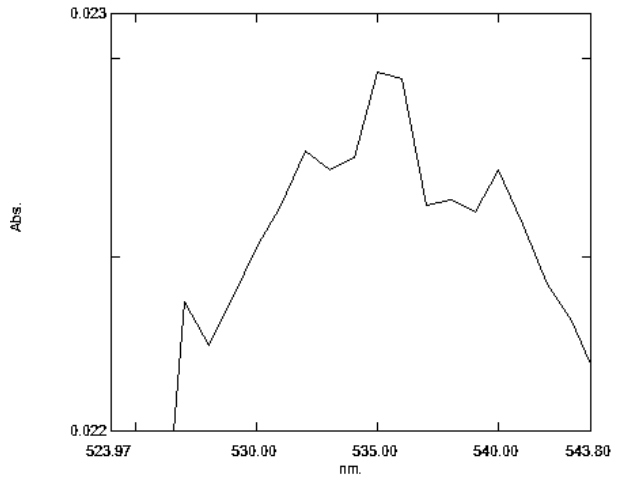
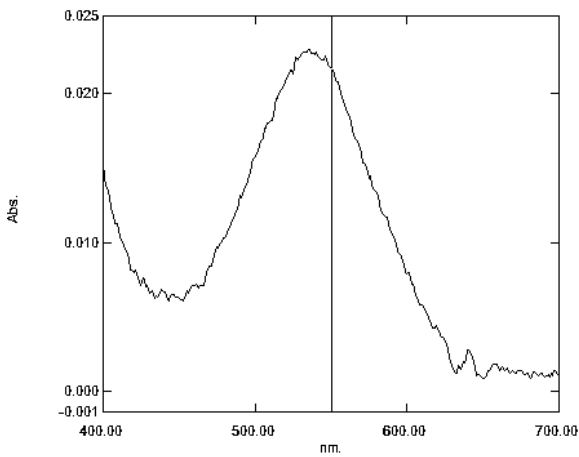
PSPE L001 → 535 nm



PSPE L002 → 535 nm



PSPE L003 → 535 nm



## Appendix 2. Calculation of ACN concentration (Lee *et al.*, 2005)

Steaming blanched PSP (PSPE L002) in  $10^{-1}$  dilution

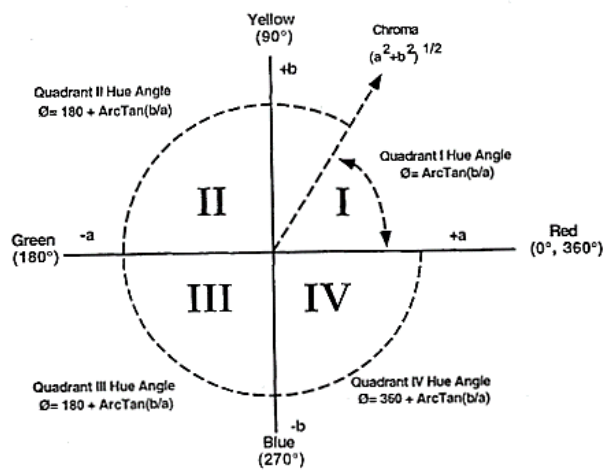
$$A = (A_{528} - A_{700})_{pH\ 2.0} - (A_{535} - A_{700})_{pH\ 4.5}$$

$$= (1.207 - 0.006)_{pH\ 2.0} - (0.275 - 0.004)_{pH\ 4.5} = 0.93$$

$$\text{Total anthocyanin pigment (mg/L)} = \frac{A \times MW \times DF \times 10^3}{\epsilon \times l}$$

$$= \frac{0.93 \times 449.2 \times 10 \times 1000}{26900 \times 1} = 155.30 \text{ mg/L}$$

**Appendix 3. Calculation of chroma and hue (McLellan *et al.*, 1994)**



Steaming blanched PSP (PSPE L002)

$$C^* = \sqrt{(a^*)^2 + (b^*)^2}$$

$$= \sqrt{(-31.9)^2 + (-10.8)^2} = 33.68$$

$$h^* = 180 + \tan^{-1} \frac{b^*}{a^*}$$

$$= 180 + \tan^{-1} \frac{-10.8}{-31.9} = 198.70^\circ$$

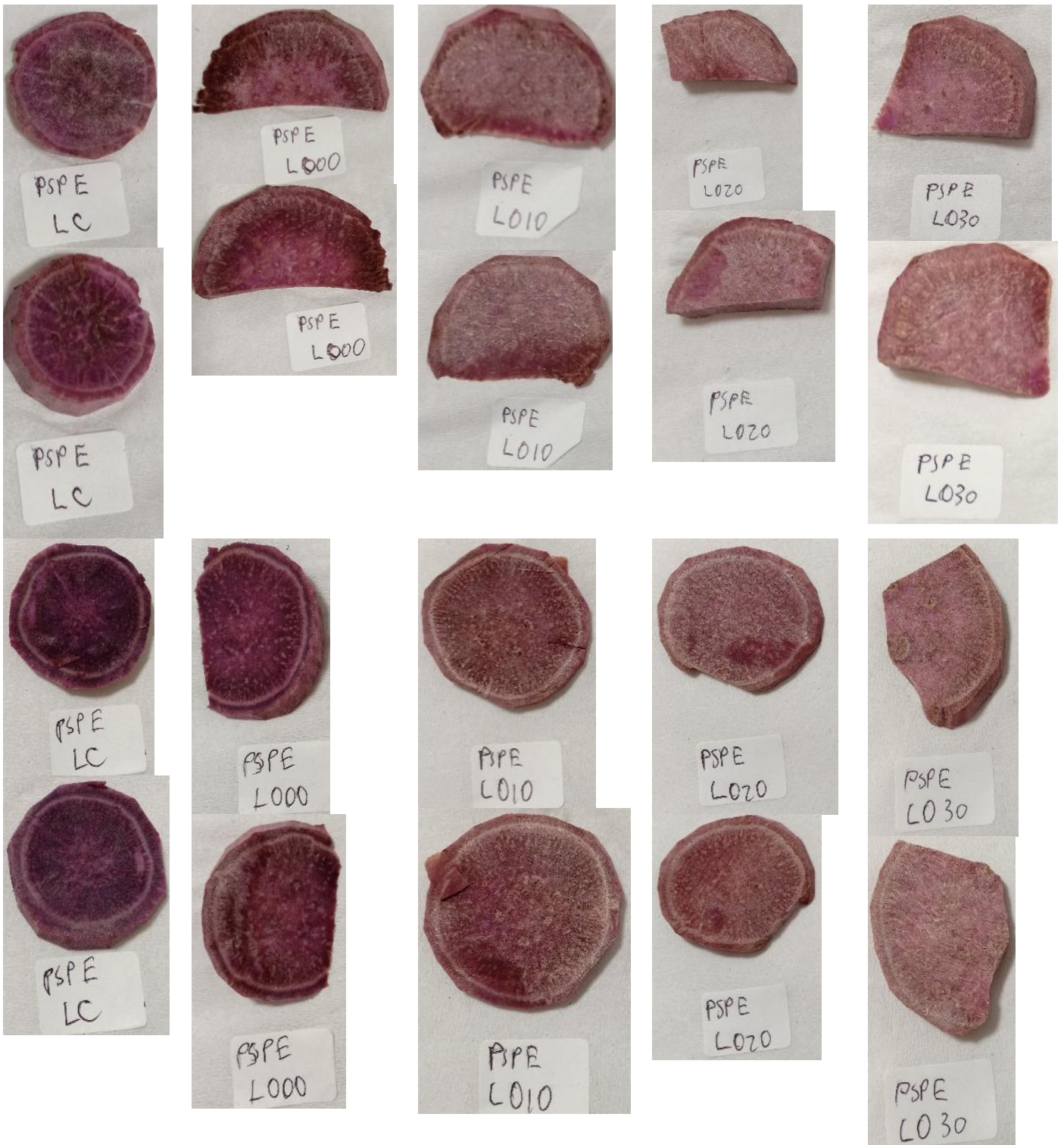
**Appendix 4. Calculation of percentage change**

ACN Concentration in Steaming Blanched PSP (PSPE L002) to control (PSPE LC)

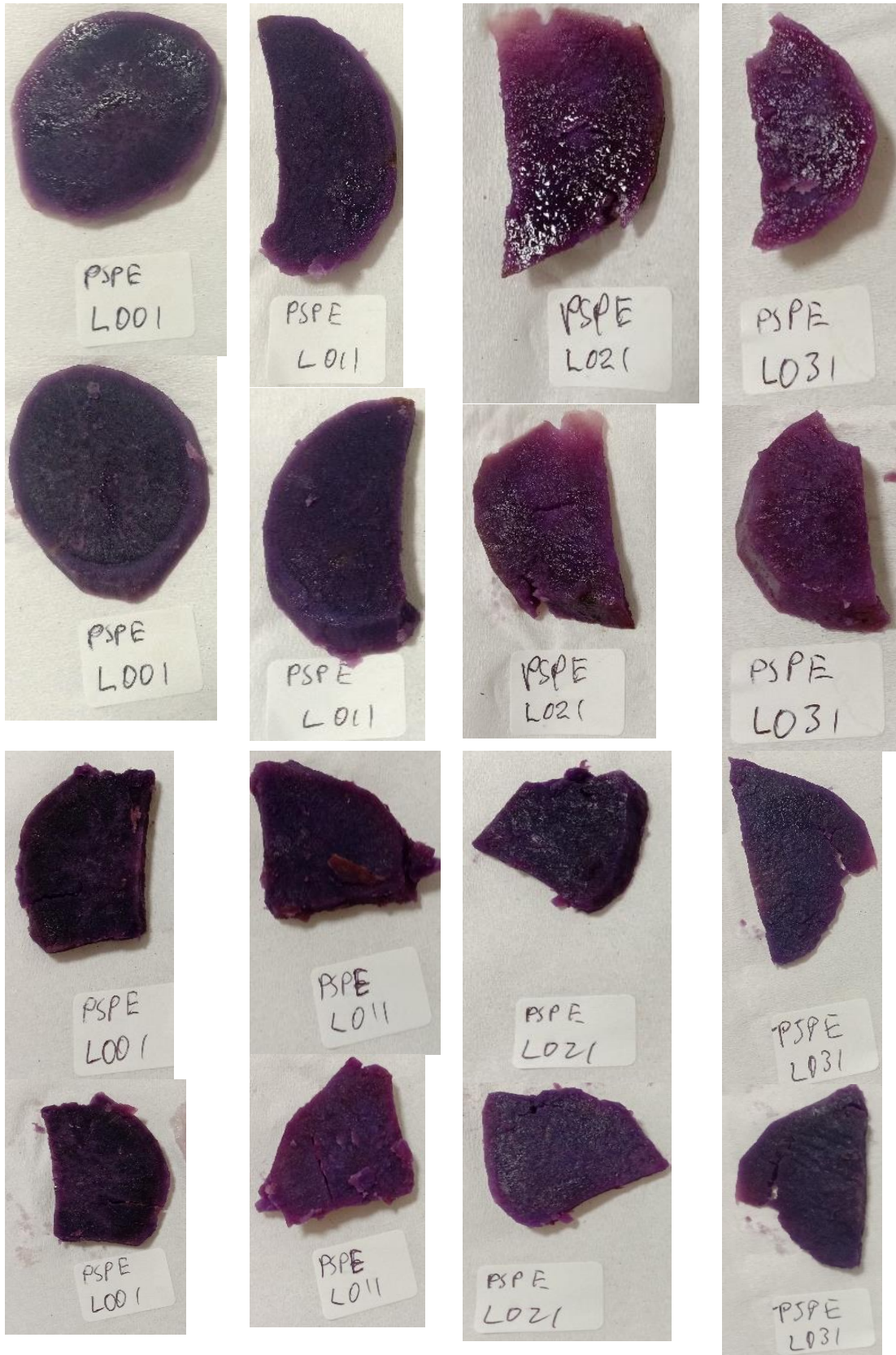
$$\% \text{ Change} = \frac{\text{final} - \text{intial}}{|\text{intial}|} = \frac{134.75 - 99.25}{|99.25|} \times 100\% = 35.77\%$$

## Appendix 5. Documentation of sliced PSP

### Group of Control and Unblanched



Group of Hot Water Blanching





Group of Steam Blanching



Group of Microwave Blanching

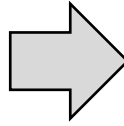




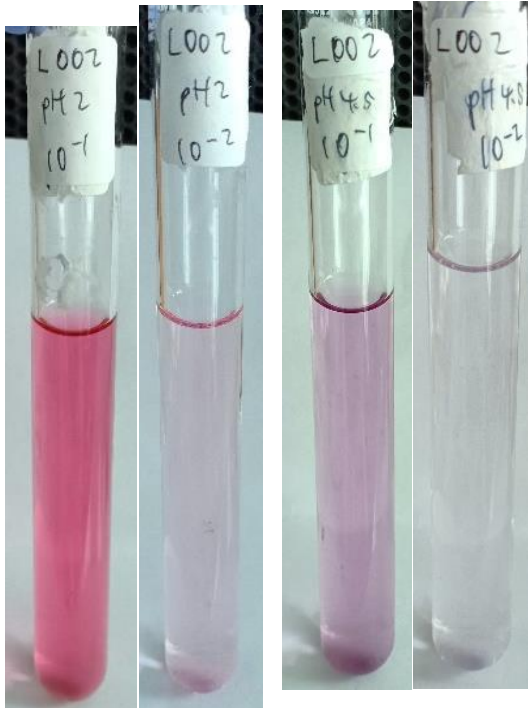
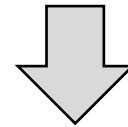
**Appendix 6. Documentation of PSP to be extracted and measured its ACN (PSPE L002)**



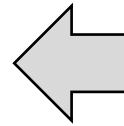
Before maceration



After maceration for 24 hours



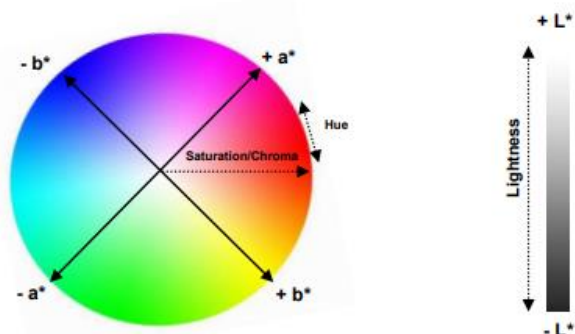
Dilution with pH 2 and 4.5 buffers



Filtrate phase



**Appendix 7. Colorimetry wheel continuum and lightness bar (“Defining and Communicating Color: The CIELAB System”, 2013)**



**Appendix 8. Statistical data output on ACN concentration measurement**

Blanching Treatment	Time	Descriptive Statistics			
		Mean	Std. Deviation	Minimum	Maximum
Control	Control	99.247	26.646	80.405	118.089
Unblanched	Day 0	55.009	18.873	41.664	68.354
	Day 1	63.233	21.727	47.870	78.596
	Day 2	71.221	8.423	65.265	77.177
	Day 3	73.155	7.498	67.853	78.457
Hot Water	Day 0	111.604	9.879	104.619	118.590
	Day 1	103.839	17.712	91.315	116.363
	Day 2	114.527	13.973	104.645	124.407
	Day 3	100.319	10.765	92.707	107.930
Steaming	Day 0	134.746	26.312	116.141	153.351
	Day 1	121.248	2.460	119.508	122.987
	Day 2	105.161	42.095	75.395	134.927
	Day 3	131.378	8.010	125.715	137.042
Microwave	Day 0	92.874	25.505	74.839	110.908
	Day 1	104.048	3.798	101.362	106.734
	Day 2	94.530	62.090	50.625	138.434
	Day 3	83.884	27.906	64.152	103.617

**Appendix 9. Statistical data output on L\* measurement**

Blanching Treatment	Time	Descriptive Statistics			
		Mean	Std. Deviation	Minimum	Maximum
Control	Control	27.592	0.177	27.467	27.717
Unblanched	Day 0	28.500	2.003	27.083	29.917
	Day 1	36.367	3.135	34.150	38.583
	Day 2	37.867	2.899	35.817	39.917
	Day 3	42.733	6.105	38.417	47.050
Hot Water	Day 0	18.783	1.108	18.000	19.567
	Day 1	18.692	1.544	17.600	19.783
	Day 2	19.558	1.049	18.817	20.300
	Day 3	21.008	0.106	20.933	21.083
Steaming	Day 0	21.367	2.381	19.683	23.050
	Day 1	19.950	1.320	19.017	20.883

*continued*

Blanching Treatment	Time	Descriptive Statistics			
		Mean	Std. Deviation	Minimum	Maximum
	Day 2	20.667	1.061	19.917	21.417
	Day 3	20.467	0.519	20.100	20.833
Microwave	Day 0	24.975	0.530	24.600	25.350
	Day 1	22.050	1.862	20.733	23.367
	Day 2	19.450	1.367	18.483	20.417
	Day 3	21.242	2.416	19.533	22.950

**Appendix 10. Statistical data output on a\* measurement**

Blanching Treatment	Time	Descriptive Statistics			
		Mean	Std. Deviation	Minimum	Maximum
Control	Control	-18.192	28.650	-38.450	2.067
Unblanched	Day 0	-3.733	11.149	-11.617	4.150
	Day 1	-21.317	26.941	-40.367	-2.267
	Day 2	-23.842	31.195	-45.900	-1.783
	Day 3	-17.075	25.091	-34.817	0.667
Hot Water	Day 0	-21.683	7.943	-27.300	-16.067
	Day 1	-15.500	1.014	-16.217	-14.783
	Day 2	-21.800	0.330	-22.033	-21.567
	Day 3	-19.975	8.214	-25.783	-14.167
Steaming	Day 0	-22.008	11.726	-30.300	-13.717
	Day 1	-16.442	4.278	-19.467	-13.417
	Day 2	-26.000	3.724	-28.633	-23.367
	Day 3	-30.842	5.810	-34.950	-26.733
Microwave	Day 0	-3.792	14.272	-13.883	6.300
	Day 1	-17.742	21.319	-32.817	-2.667
	Day 2	-22.392	28.485	-42.533	-2.250
	Day 3	-15.200	17.631	-27.667	-2.733

**Appendix 11. Statistical data output on b\* measurement**

Blanching Treatment	Time	Descriptive Statistics			
		Mean	Std. Deviation	Minimum	Maximum
Control	Control	-7.275	3.123	-9.483	-5.067
Unblanched	Day 0	-5.950	1.461	-6.983	-4.917
	Day 1	-4.258	1.167	-5.083	-3.433
	Day 2	-3.483	1.956	-4.867	-2.100
	Day 3	-4.075	0.412	-4.367	-3.783
Hot Water	Day 0	-11.608	1.120	-12.400	-10.817
	Day 1	-12.658	0.200	-12.800	-12.517
	Day 2	-12.908	0.766	-13.450	-12.367
	Day 3	-13.233	1.037	-13.967	-12.500
Steaming	Day 0	-9.383	0.613	-9.817	-8.950
	Day 1	-10.283	0.000	-10.283	-10.283
	Day 2	-10.250	0.731	-10.767	-9.733
	Day 3	-10.050	1.202	-10.900	-9.200
Microwave	Day 0	-7.008	1.992	-8.417	-5.600
	Day 1	-9.092	1.850	-10.400	-7.783
	Day 2	-9.400	2.357	-11.067	-7.733
	Day 3	-10.350	0.990	-11.050	-9.650

### Appendix 12. Statistical data output on C\* measurement

Blanching Treatment	Time	Descriptive Statistics			
		Mean	Std. Deviation	Minimum	Maximum
Control	Control	23.402	22.951	7.173	39.631
Unblanched	Day 0	10.554	4.449	7.408	13.699
	Day 1	22.688	25.476	4.674	40.703
	Day 2	25.820	28.778	5.471	46.169
	Day 3	20.071	21.171	5.101	35.041
Hot Water	Day 0	24.715	7.542	19.382	30.049
	Day 1	20.111	0.665	19.641	20.582
	Day 2	25.365	0.097	25.297	25.434
	Day 3	24.877	6.312	20.414	29.341
Steaming	Day 0	24.137	10.952	16.393	31.882
	Day 1	19.498	3.571	16.973	22.023
	Day 2	28.011	3.174	25.767	30.255
	Day 3	32.476	5.910	28.297	36.655
Microwave	Day 0	12.445	5.544	8.525	16.365
	Day 1	21.630	18.137	8.805	34.455
	Day 2	26.320	24.944	8.681	43.958
	Day 3	19.962	13.904	10.130	29.793

### Appendix 13. Statistical data output on h\* measurement

Blanching Treatment	Time	Descriptive Statistics			
		Mean	Std. Deviation	Minimum	Maximum
Control	Control	238.820	63.139	194.174	283.466
Unblanched	Day 0	258.195	65.331	211.999	304.391
	Day 1	220.715	47.446	187.165	254.264
	Day 2	181.275	6.772	176.487	186.064
	Day 3	232.227	64.947	186.302	278.151
Hot Water	Day 0	209.411	6.493	204.820	214.002
	Day 1	219.788	2.483	218.032	221.544
	Day 2	210.803	1.692	209.606	211.999
	Day 3	219.067	14.807	208.597	229.537
Steaming	Day 0	205.767	10.570	198.293	213.241
	Day 1	213.017	7.252	207.890	218.145
	Day 2	201.920	4.249	198.916	204.924
	Day 3	198.311	1.021	197.589	199.032
Microwave	Day 0	264.814	75.918	211.132	318.497
	Day 1	225.812	39.651	197.775	253.850
	Day 2	225.542	43.634	194.688	256.395
	Day 3	227.823	36.821	201.786	253.860