

Supplementary Material

Table S1. Post-harvest evolution of quality parameters (mean) of “Braeburn” and “Cripps Pink” apples from the harvest date 2 (HT2) during long-term CA storage.

Variety	“Braeburn”						“Cripps Pink”					
analysis time-point	0	7	15	21	28	32	0	6	15	20	27	30
sample number	30	30	29	30	29	30	30	30	29	30	29	29
weight [g] *	209.5	205.8	211.8	195.4	201.2	204.2	211.1	214.0	207.8	214.3	213.0	203.9
total juice [mL] *		123.8 ^a	127.8 ^a	99.5 ^{b,c}	94.2 ^c	117.4 ^{a,b}		129.1 ^a	120.1 ^{a,b}	107.2 ^{b,c}	103.2 ^c	111.8 ^{b,c}
pH [#]	3.54 ^{a,b}	3.52 ^a	3.62 ^c	3.58 ^b	3.65 ^c		3.49 ^a	3.59 ^b	3.70 ^c	3.67 ^c	3.77 ^d	3.84 ^e
TA [g/L malic acid] [#]	5.3 ^a	5.2 ^{a,b}	4.8 ^{b,c}	4.7 ^{b,c}	4.4 ^c		5.1 ^a	4.6 ^b	3.9 ^c	3.9 ^c	3.4 ^d	3.2 ^d
TSS [°Brix] *	9.9 ^a	12.4 ^b	12.1 ^b	12.1 ^b	12.7 ^b		13.3 ^a	11.9 ^c	12.8 ^{a,b}	12.2 ^{b,c}	13.2 ^a	12.9 ^{a,b}
F _f [N] *	86.7 ^a	82.6 ^{a,b}	76.8 ^{b,c}	71.5 ^{c,d}	69.3 ^d	72.1 ^{c,d}	105.0 ^a	93.2 ^b	84.5 ^c	83.9 ^c	81.6 ^c	
D [mm] *	3.55 ^{a,b}	3.56 ^{a,b}	3.33 ^{a,b}	3.51 ^{a,b}	3.25 ^a	3.63 ^b	4.90 ^{a,b}	4.60 ^{b,c}	5.20 ^a	4.33 ^c	4.30 ^c	
W _f [J] *	0.18 ^a	0.16 ^{a,b}	0.15 ^{b,c}	0.15 ^{b,c}	0.13 ^c	0.16 ^{a,b}	0.29 ^a	0.25 ^b	0.22 ^{b,c}	0.21 ^c	0.20 ^c	
F _{LC} [N] *	63.2 ^a	60.4 ^{a,b}	58.3 ^{a,b}	54.9 ^{b,c}	51.0 ^c	55.2 ^{b,c}	92.2 ^a	77.0 ^b	66.3 ^c	63.2 ^c	57.5 ^d	
S [N/mm] *	39.6 ^{a,b}	47.5 ^a	32.3 ^b	37.0 ^{a,b}	47.7 ^a	35.8 ^{a,b}	37.0 ^a	32.2 ^{a,b}	55.6 ^c	28.1 ^b	31.0 ^{a,b}	
glucose [g/100 g] [#]		0.8	1.0	1.1	1.0	1.2		0.5	0.6	0.6	0.6	0.6
xylose [g/100 g] *		0.03 ^a	0.04 ^{a,b}	0.05 ^b	0.06 ^b	0.05 ^b		0.04 ^a	0.05 ^{a,b}	0.06 ^b	0.06 ^b	0.06 ^b
sucrose [g/100 g] [#]		2.0	1.8	1.6	1.4	1.4		3.6 ^a	3.2 ^{a,b}	3.2 ^{a,b}	2.6 ^{b,c}	2.4 ^c
fructose [g/100 g] *		3.4	3.5	3.5	3.2	2.6		3.0	3.1	2.8	2.8	2.8

Means with different superscript letters in the same row differ significantly ($p < 0.05$) within one cultivar; * ANOVA followed by the Tukey test; # Kruskal-Wallis test followed by the Mann-Whitney U test with Bonferroni correction.

Table S2. Post-harvest evolution of quality parameters (mean) of “Braeburn” and “Cripps Pink” apples from the harvest date 3 (HT3) during long-term CA storage.

Variety	“Braeburn”						“Cripps Pink”					
analysis time-point	0	7	15	21	28	32	0	6	15	20	27	30
sample number	30	28	28	29	27	29	30	30	30	30	30	29
weight [g] *	208.8	214.3	220.9	218.9	214.2	213.2	215.4	220.4	220.9	215.8	205.7	202.7
total juice [mL] *		127.1 ^a	130.7 ^a	115.6 ^{a,b}	101.4 ^b	121.5 ^{a,b}		128.1 ^a	130.6 ^a	115.7 ^{a,b}	104.3 ^b	111.7 ^b
pH [#]	3.58 ^a	3.62 ^{a,b}	3.65 ^{b,c}	3.62 ^{a,b}	3.69 ^c	3.81 ^d	3.49 ^a	3.56 ^b	3.67 ^c	3.66 ^c	3.82 ^d	3.85 ^d
TA [g/L malic acid] [#]	4.6 ^a	4.8 ^a	4.5 ^a	4.5 ^{a,b}	4.1 ^b	3.4 ^c	5.4 ^a	4.8 ^b	4.2 ^c	4.0 ^c	3.3 ^d	3.3 ^d
TSS [°Brix] *	12.2	13.2	12.3	12.7	13.0	12.9	13.2 ^a	12.6 ^b	13.1 ^{a,b}	12.9 ^{a,b}	13.0 ^{a,b}	12.6 ^b
F _f [N] *	87.2 ^a	79.6 ^{a,b}	79.0 ^b	72.6 ^{b,c}	67.5 ^c	65.0 ^c	94.4 ^a	92.9 ^a	85.6 ^b	79.7 ^{b,c}	74.1 ^c	
D [mm] *	3.68 ^{a,b}	3.75 ^a	3.39 ^{a,b}	3.40 ^{a,b}	3.27 ^b	3.54 ^{a,b}	5.01 ^a	4.99 ^a	6.22 ^b	4.74 ^a	4.51 ^a	
W _f [J] *	0.18 ^a	0.17 ^{a,b}	0.16 ^{a,b,c}	0.15 ^{b,c}	0.13 ^c	0.14 ^{b,c}	0.28 ^a	0.28 ^a	0.28 ^a	0.23 ^b	0.20 ^b	
F _{LC} [N] *	63.8 ^a	60.8 ^a	58.9 ^{a,b}	53.5 ^{b,c}	52.3 ^{b,c}	52.0 ^c	84.2 ^a	82.7 ^{a,b}	76.1 ^{b,c}	70.4 ^c	62.2 ^d	
S [N/mm] *	33.5 ^a	44.6 ^b	32.3 ^a	35.0 ^a	54.4 ^b	34.8 ^a	36.9	32.1	30.9	31.2	28.3	
glucose [g/100 g] [#]		0.8 ^a	1.0 ^{a,b}	1.0 ^{a,b}	1.0 ^{a,b}	1.3 ^b		0.4 ^a	0.5 ^a	1.1 ^b	0.5 ^a	0.5 ^a
xylose [g/100 g] *		0.02 ^a	0.03 ^{a,b}	0.05 ^c	0.05 ^{b,c}	0.03 ^{a,b}		0.02 ^a	0.04 ^{a,b}	0.06 ^{b,c}	0.05 ^{b,c}	0.06 ^c
sucrose [g/100 g] [#]		2.1 ^a	1.6 ^{a,b}	1.9 ^{a,b}	1.2 ^b	3.3 ^c		3.5 ^a	3.8 ^a	2.4 ^b	2.1 ^b	2.3 ^b
fructose [g/100 g] *		3.0 ^a	3.0 ^a	3.0 ^a	2.9 ^a	1.3 ^b		2.7 ^{a,b,c}	3.1 ^{b,c}	3.3 ^c	2.2 ^a	2.5 ^{a,b}

Means with different superscript letters in the same row differ significantly ($p < 0.05$) within one cultivar; * ANOVA followed by the Tukey test; # Kruskal-Wallis test followed by the Mann-Whitney U test with Bonferroni correction.

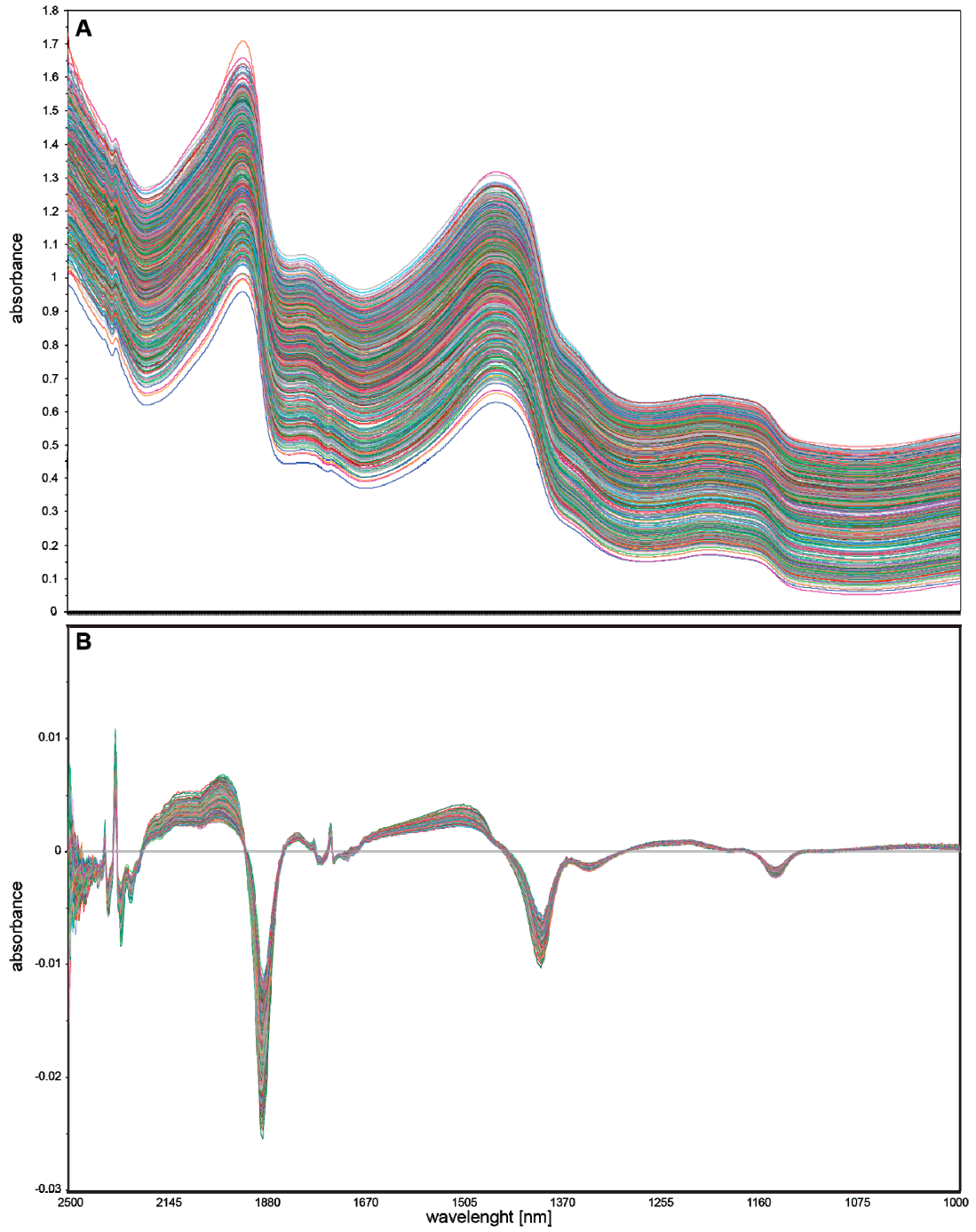


Figure S1. Raw NIR spectra (A) and spectra pretreated by de-trending and first derivative Savitzky-Golay (B) for 1049 apples.

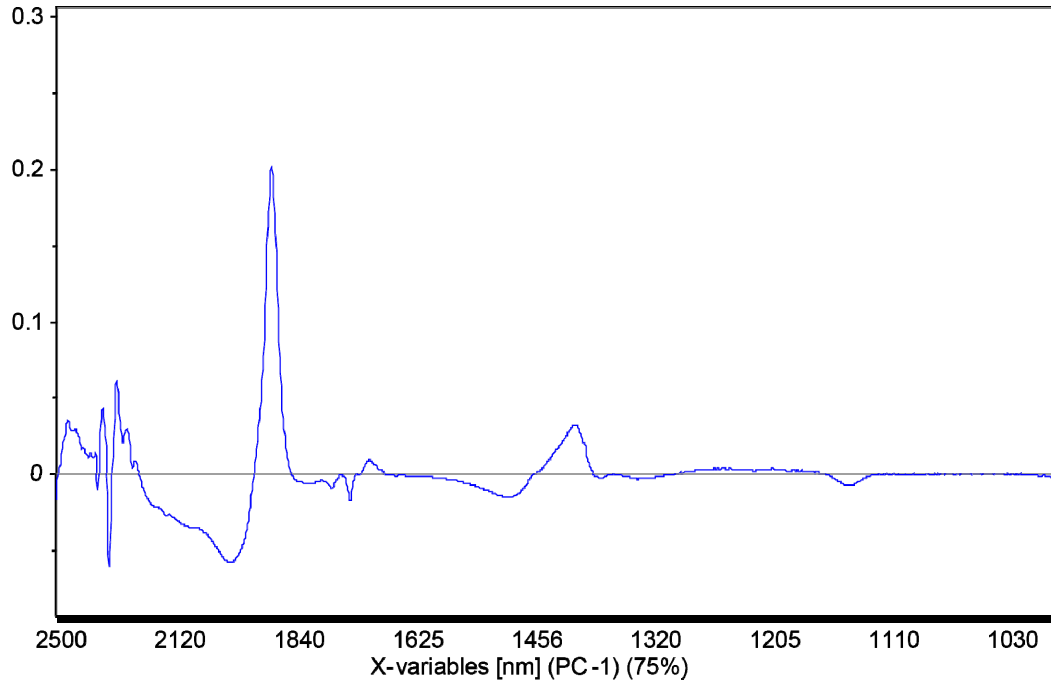


Figure S2. PCA loadings plot of NIR data acquired from the complete data set (515 “Braeburn” and 534 “Cripps Pink” apples).