

Table S1. Sensory evaluation of cherry tomatoes

	color	flavour	mouthfeel texture	overall acceptability
CK	24.5±0.6	23.5±0.5	24.0±0.4	23.0±0.6
HEC	23.5±0.3	23.5±0.2	24.0±0.2	22.0±0.3
HEC-5%SRBP	22.5±0.8	23.5±0.7	24.0±0.7	22.0±0.8
HEC-10%SRBP	22.5±0.3	23.5±0.2	24.0±0.2	22.0±0.3
HEC-15%SRBP	22.0±0.8	23.5±0.7	24.0±0.7	21.5±0.8
HEC-20%SRBP	22.0±0.6	23.5±0.4	24.0±0.4	21.5±0.6
HEC-25%SRBP	10.5±0.8	22.0±0.7	21.5±0.7	17.0±0.8

Table S2. Effect of different treatments on volatile substances of cherry tomatoes

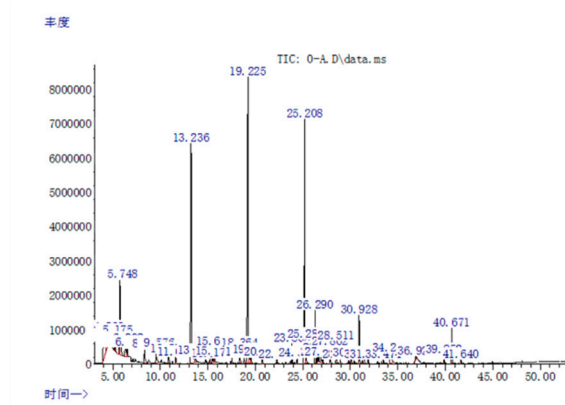
Type of compound	Retention time /min	Aroma component	Storage time /d	content / $\mu\text{g}\cdot\text{kg}^{-1}$			
				CK	HEC	HEC-5%SRBP	HEC-20%SRBP
Aldehydes	17.53	heptanal	0	2.13 ^a	2.13 ^a	2.13 ^a	2.13 ^a
			3	2.31 ^a	2.30 ^a	2.17 ^b	2.16 ^b
			6	5.39 ^d	2.70 ^a	3.35 ^c	2.74 ^b
			9	4.39 ^c	5.61 ^d	3.88 ^b	3.47 ^a
			12	3.22 ^a	3.85 ^b	6.01 ^d	4.55 ^c
			15	2.10 ^a	3.44 ^b	4.69 ^c	6.23 ^d
	23.84	(E)-2- heptenal	0	—	—	—	—
			3	1.82 ^c	1.77 ^b	1.76 ^b	1.46 ^a
			6	8.83 ^d	5.47 ^c	4.83 ^b	4.01 ^a
			9	8.20 ^c	8.96 ^d	6.94 ^a	7.20 ^b
			12	6.52 ^a	6.84 ^b	9.27 ^d	8.43 ^c
			15	4.30 ^a	5.55 ^b	5.72 ^c	9.54 ^d
	19.224	(E)-2- hexenal	0	235.87 ^a	235.87 ^a	235.87 ^a	235.87 ^a
			3	121.04 ^a	126.74 ^b	126.95 ^b	128.09 ^c
			6	85.90 ^a	89.83 ^b	93.34 ^c	95.73 ^d
			9	76.21 ^a	79.46 ^b	82.33 ^c	83.15 ^d
			12	72.26 ^a	77.73 ^b	78.76 ^b	80.09 ^c
			15	65.11 ^a	73.52 ^b	73.53 ^b	74.90 ^d
	13.234	n-Hexanal	0	161.4 ^a	161.42 ^a	161.42 ^a	161.42 ^a
			3	124.65 ^a	127.84 ^b	128.27 ^b	128.91 ^b
			6	75.06 ^a	106.25 ^b	109.91 ^c	111.26 ^d
			9	64.19 ^a	88.56 ^b	89.27 ^c	90.78 ^d
			12	61.27 ^a	79.534 ^b	80.82 ^c	81.05 ^d
			15	54.15 ^a	58.05 ^b	59.41 ^c	59.84 ^c
	26.53	Nonanal	0	2.92 ^a	2.92 ^a	2.92 ^a	2.92 ^a
			3	6.50 ^d	4.91 ^c	4.48 ^b	3.39 ^a
			6	7.99 ^d	5.72 ^c	5.68 ^b	3.90 ^a
			9	7.97 ^c	8.04 ^d	5.83 ^b	5.04 ^a
			12	7.29 ^c	6.33 ^b	8.23 ^d	6.00 ^a

			15	4.69 ^a	5.05 ^b	5.49 ^c	7.28 ^d
	38.44	Trans-2,4-Decadienal	0	—	—	—	—
			3	—	—	—	—
			6	—	—	—	—
			9	—	—	—	—
			12	—	—	—	—
			15	3.36 ^b	2.88 ^a	2.98 ^a	2.86 ^a
	30.92	Benzaldehyde	0	28.44 ^a	28.44 ^a	28.44 ^a	28.44 ^a
			3	13.65 ^d	12.81 ^c	12.33 ^b	10.81 ^a
			6	10.49 ^b	10.32 ^b	8.50 ^a	8.40 ^a
			9	9.39 ^d	7.98 ^b	8.49 ^c	7.75 ^a
			12	8.77 ^d	7.55 ^b	8.41 ^c	7.34 ^a
			15	7.85 ^d	6.23 ^b	6.93 ^c	5.82 ^a
Alcohols	26.29	cis-3-Hexenol	0	29.28 ^a	29.28 ^a	29.28 ^a	29.28 ^a
			3	23.19 ^a	24.88 ^a	24.61 ^a	24.22 ^a
			6	22.56 ^a	23.50 ^a	23.11 ^a	22.75 ^a
			9	22.13 ^a	22.51 ^a	22.70 ^a	22.96 ^a
			12	21.39 ^a	22.03 ^a	22.15 ^a	22.25 ^a
			15	10.18 ^a	15.18 ^b	16.64 ^c	17.25 ^d
	18.81	2-Methyl-1-butanol	0	0.77 ^a	0.77 ^a	0.77 ^a	0.77 ^a
			3	1.12 ^a	0.98 ^a	0.87 ^a	0.81 ^a
			6	1.88 ^a	1.76 ^a	1.72 ^a	1.58 ^a
			9	3.56 ^a	3.47 ^a	3.32 ^a	3.19 ^a
			12	4.84 ^a	4.74 ^a	4.65 ^a	4.57 ^a
			15	7.54 ^c	7.24 ^b	4.68 ^a	4.65 ^a
	40.67	Phenethyl alcohol	0	13.06 ^a	13.06 ^a	13.06 ^a	13.06 ^a
			3	16.91 ^d	14.85 ^c	14.01 ^b	13.23 ^a
			6	25.20 ^d	17.43 ^c	15.73 ^b	15.32 ^a
			9	25.13 ^c	26.43 ^d	23.61 ^b	18.34 ^a
			12	13.01 ^a	19.03 ^b	28.88 ^d	20.84 ^c
			15	8.96 ^a	12.81 ^b	16.45 ^c	29.31 ^d
	20.74	1-Pentanol	0	3.43 ^a	3.43 ^a	3.43 ^a	3.43 ^a
			3	2.61 ^a	2.52 ^a	2.59 ^a	2.61 ^a
			6	2.68 ^a	2.61 ^a	2.68 ^a	2.58 ^a

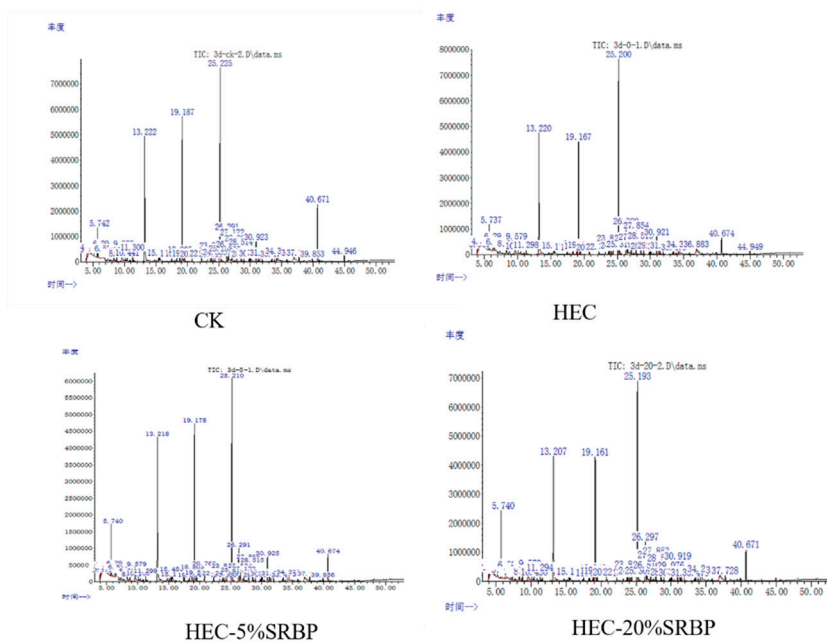
			9	3.50 ^a	3.56 ^a	3.59 ^a	3.54 ^a
			12	2.96 ^a	2.64 ^a	2.87 ^a	3.01 ^a
			15	2.56 ^a	2.55 ^a	2.63 ^b	2.74 ^c
	28.51	1-Octen-3-ol	0	11.72 ^a	11.72 ^a	11.72 ^a	11.72 ^a
			3	10.41 ^c	9.30 ^a	9.23 ^a	9.94 ^b
			6	8.28 ^a	8.69 ^c	8.38 ^b	9.53 ^d
			9	8.31 ^c	7.24 ^a	8.14 ^b	9.60 ^d
			12	8.86 ^d	6.69 ^a	6.87 ^b	7.87 ^c
			15	6.28 ^a	6.93 ^b	7.26 ^c	7.22 ^d
Ketones	24.38	Methylheptenone	0	2.35 ^a	2.35 ^a	2.35 ^a	2.35 ^a
			3	3.35 ^d	2.88 ^c	2.46 ^b	2.24 ^a
			6	3.64 ^d	3.48 ^c	3.23 ^b	2.32 ^a
			9	2.54 ^a	4.86 ^d	3.81 ^c	3.75 ^b
			12	2.02 ^a	2.49 ^b	4.93 ^d	4.17 ^c
			15	1.88 ^a	2.21 ^b	2.48 ^c	5.61 ^d
Hydrocarbons	20.76	Sulforaphane	0	—	—	—	—
			3	3.42 ^a	—	—	—
			6	3.42 ^a	—	—	—
			9	3.31 ^a	3.48 ^b	—	—
			12	3.29 ^a	3.47 ^b	3.51 ^b	—
			15	3.3 ^a	3.45 ^b	3.52 ^c	3.55 ^c
	20.40	α -Terpinene	0	—	—	—	—
			3	—	—	—	—
			6	3.42 ^a	—	—	—
			9	3.31 ^a	3.48 ^a	—	—
			12	3.29 ^a	3.47 ^b	3.51 ^b	—
			15	3.3 ^a	3.45 ^a	3.52 ^b	3.55 ^b
	5.175	2-Methylheptane	0	1.24 ^a	1.23 ^a	1.24 ^a	1.24 ^a
			3	1.23 ^a	1.22 ^a	1.26 ^a	1.25 ^a
			6	1.24 ^a	1.24 ^a	1.27 ^a	1.24 ^a
			9	1.23 ^a	1.29 ^a	1.24 ^a	1.21 ^a
			12	1.25 ^a	1.27 ^a	1.26 ^a	1.26 ^a
			15	1.26 ^a	1.28 ^a	1.27 ^a	1.26 ^a
	5.625	n-octane	0	1.56 ^a	1.56 ^a	1.56 ^a	1.56 ^a

			3	1.44 ^b	1.47 ^b	1.25 ^a	1.30 ^a
			6	1.51 ^a	1.54 ^a	1.76 ^b	1.56 ^a
			9	1.61 ^a	1.60 ^a	1.69 ^a	1.58 ^a
			12	1.58 ^a	1.62 ^b	1.74 ^b	1.59 ^a
			15	1.49 ^a	1.30 ^a	1.56 ^a	1.40 ^a
5.663		2,3,5-					
		Trimethylhexane	0	1.21 ^a	1.21 ^a	1.21 ^a	1.21 ^a
			3	1.18 ^a	1.19 ^a	1.17 ^a	1.18 ^a
			6	1.24 ^a	1.23 ^a	1.22 ^a	1.26 ^a
			9	1.24 ^a	1.25 ^a	1.28 ^a	1.25 ^a
			12	1.32 ^a	1.33 ^a	1.29 ^a	1.30 ^a
			15	1.31 ^a	1.29 ^a	1.27 ^a	1.29 ^a
8.792		2-Methylnonane	0	2.69 ^a	2.69 ^a	2.69 ^a	2.69 ^a
			3	2.64 ^a	2.66 ^a	2.65 ^a	2.66 ^a
			6	2.59 ^a	2.61 ^a	2.65 ^a	2.64 ^a
			9	2.56 ^a	2.6 ^a	2.62 ^a	2.63 ^a
			12	2.59 ^a	2.61 ^a	2.65 ^a	2.64 ^a
			15	2.62 ^a	2.63 ^a	2.64 ^a	2.62 ^a
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Esters	36.65	Methyl salicylate	0	——	——	——	——
			3	2.64 ^d	0.68 ^a	1.27 ^b	1.52 ^c
			6	3.56 ^d	1.98 ^a	2.71 ^c	2.09 ^b
			9	2.01 ^a	3.78 ^d	2.67 ^c	2.44 ^b
			12	1.84 ^a	1.96 ^b	3.56 ^d	2.52 ^c
			15	0.6 ^{7a}	1.56 ^b	1.67 ^c	3.98 ^d
7.09		Ethyl acetate	0	0 ^a	0 ^a	0 ^a	0 ^a
			3	0 ^a	0 ^a	0 ^a	0 ^a
			6	0 ^a	0 ^a	0 ^a	0 ^a
			9	0 ^a	0 ^a	4.93 ^b	3.91 ^a
			12	0 ^a	0 ^a	3.43 ^a	3.66 ^a
			15	0 ^a	0 ^a	3.98 ^a	3.86 ^a

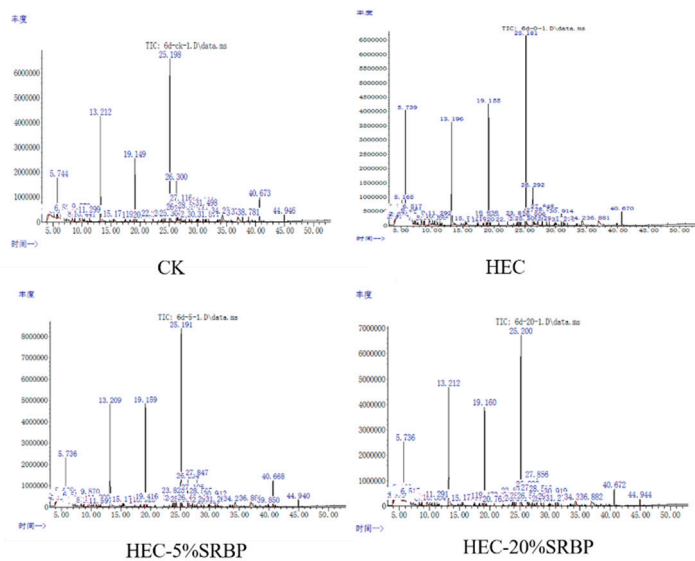
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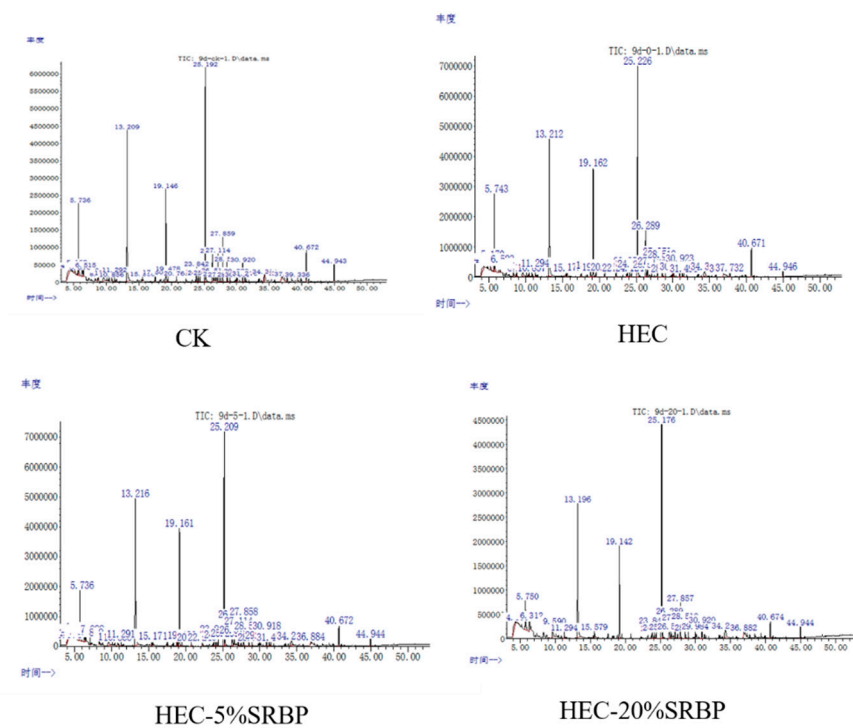
3 d



6 d



9 d



12 d

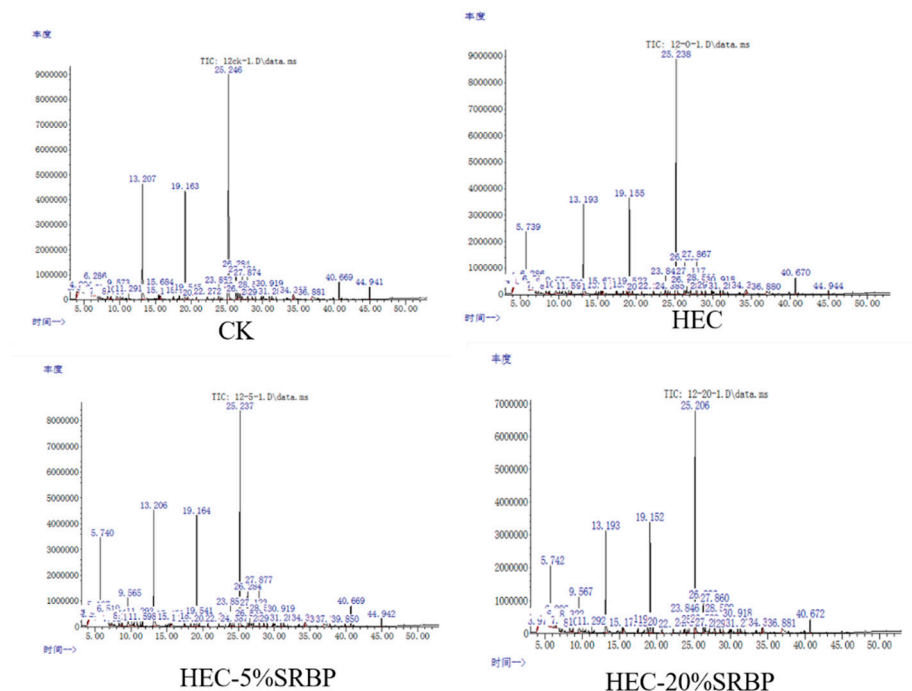


Figure S1. Chromatograms of volatiles substances at different times for different treatments

Table S3. The retention time of n-alkanes

number	Retention time (min)	Match name	item	Molecular weight (amu)	CAS	Spectral library
4	3.97	Pentane		72.094	000109-66-0	D:\GC-MS\GCMS Chemstation\ Raw data for testing \NIST08.L
7	4.373	Hexane		86.11	000110-54-3	D:\GC-MS\GCMS Chemstation\ Raw data for testing \NIST08.L
21	7.432	Nonane		128.157	000111-84-2	D:\GC-MS\GCMS Chemstation\ Raw data for testing \NIST08.L
25	10.245	Decane		142.172	000124-18-5	D:\GC-MS\GCMS Chemstation\ Raw data for testing \NIST08.L
27	14.021	Undecane		156.188	001120-21-4	D:\GC-MS\GCMS Chemstation\ Raw data for testing \NIST08.L
28	18.374	Dodecane		170.203	000112-40-3	D:\GC-MS\GCMS Chemstation\ Raw data for testing \NIST08.L
30	22.849	Tridecane		184.219	000629-50-5	D:\GC-MS\GCMS Chemstation\ Raw data for testing \NIST08.L
32	26.748	Tetradecane		198.235	000629-59-4	D:\GC-MS\GCMS Chemstation\ Raw data for testing \NIST08.L
36	30.025	Pentadecane		212.25	000629-62-9	D:\GC-MS\GCMS Chemstation\ Raw data for testing \NIST08.L
42	32.897	Hexadecane		226.266	000544-76-3	D:\GC-MS\GCMS Chemstation\ Raw data for testing \NIST08.L
49	35.483	Heptadecane		240.282	000629-78-7	D:\GC-MS\GCMS Chemstation\ Raw data for testing \NIST08.L

54	37.86	Octadecane	254.297	000593-45-3	D:\GC-MS\GCMS Chemstation\ Raw data for testing \NIST08.L
57	40.08	Nonadecane	268.313	000629-92-5	D:\GC-MS\GCMS Chemstation\ Raw data for testing \NIST08.L
63	42.165	Eicosane	282.329	000112-95-8	D:\GC-MS\GCMS Chemstation\ Raw data for testing \NIST08.L