

Table S1. Concentrations of amino acids obtained from untreated and treated Cabernet Gernischt grapes during development

Amino Acid	Concentration (g/kg)											
	SD - 1		SD - 2		SD - 3		SD - 4		SD - 5		SD - 6	
	CK	BTH	CK	BTH	CK	BTH	CK	BTH	CK	BTH	CK	BTH
<b>Asp</b>	3.12±0.02	3.03±0.00	nd	nd	nd	nd	1.11±0.17	2.77±0.04	0.22±0.00	1.08±0.17	0.15±0.00	0.05±0.00
<b>Thr</b>	0.5±0.00	0.43±0.00	0.54±0.00	0.49±0.01	0.34±0.00	0.23±0.01	0.71±0.01	0.48±0.01	1.36±0.01	0.92±0.02	1.04±0.01	0.9±0.00
<b>Ser</b>	1.43±0.01	1.46±0.01	1.47±0.01	1.31±0.02	1.06±0.01	0.76±0.02	1.78±0.05	1.2±0.02	2.6±0.03	1.83±0.02	1.93±0.03	1.66±0.01
<b>Glu</b>	16.16±0.19	13.66±0.10	13.8±0.15	11.02±0.24	8.93±0.08	5.53±0.13	12.17±0.22	9.54±0.17	29.8±0.75	15.01±0.35	14.31±0.33	11.94±0.06
<b>Gly</b>	1.17±0.01	1.16±0.01	1.36±0.02	1.08±0.02	1.85±0.02	1.13±0.02	3.02±0.07	2.61±0.09	1.12±0.13	2.52±0.04	2.27±0.03	2.08±0.02
<b>Ala</b>	1.07±0.00	0.95±0.01	1.43±0.04	1.43±0.02	0.98±0.01	0.76±0.01	2.26±0.06	1.25±0.02	2.59±0.01	2.37±0.03	0.48±0.01	0.43±0.00
<b>Tyr</b>	0.64±0.00	0.62±0.00	0.93±0.02	0.74±0.01	1.09±0.02	0.75±0.01	0.57±0.01	0.59±0.02	0.89±0.03	0.83±0.01	0.45±0.00	0.36±0.00
<b>Phe</b>	0.42±0.00	0.54±0.01	0.53±0.00	0.46±0.01	0.49±0.00	0.39±0.01	0.94±0.01	0.93±0.01	0.6±0.01	0.62±0.01	1.44±0.01	1.10±0.00
<b>His</b>	0.74±0.00	0.68±0.01	1.15±0.02	0.88±0.02	1.35±0.02	0.9±0.02	0.58±0.02	0.45±0.01	1.84±0.02	1.35±0.01	0.54±0.02	0.38±0.01
<b>Lys</b>	0.59±0.00	0.59±0.01	0.7±0.01	0.58±0.01	0.55±0.00	0.41±0.01	1.35±0.00	1.29±0.01	0.83±0.01	0.48±0.01	14.72±0.01	10.92±0.00
<b>Arg</b>	2.15±0.02	1.29±0.00	3.75±0.18	3.63±0.10	4.33±0.09	3.21±0.13	0.51±0.13	0.46±0.10	18.24±0.10	9.43±0.38	14.53±0.17	11.44±0.09
<b>Pro</b>	0.67±0.02	nd	0.65±0.00	nd	0.57±0.01	0.46±0.00	8.66±0.03	7.76±0.01	8.87±0.17	4.22±0.23	13.94±0.15	10.52±0.10
<b>Cys</b>	nd	nd	nd	nd	nd	nd	1.76±0.00	1.03±0.04	nd	nd	nd	nd
<b>Total</b>	<b>28.66±0.27</b>	<b>24.41±0.16</b>	<b>26.31±0.5</b>	<b>21.62±0.5</b>	<b>21.54±0.3</b>	<b>14.53±0.4</b>	<b>33.66±0.8</b>	<b>29.33±0.6</b>	<b>68.96±1.3</b>	<b>40.66±1.3</b>	<b>65.8±0.8</b>	<b>51.78±0.3</b>

Data are mean ± standard deviation. Untreated samples (CK); Treated samples (BTH); Sampling date (SD). Glutamic acid (Glu), Arginine (Arg), Proline (Pro), Lysine (Lys), Glycine (Gly), Serine (Ser), Threonine (Thr), Phenylalanine (Phe), Alanine (Ala), Tyrosine (Tyr), Aspartic acid (Asp), Histidine (His), and Cysteine (Cys). not detected (nd).

Table S2. Concentrations of aroma compounds of untreated and treated Cabernet Gernischt grapes during development.

(a) Concentrations of aroma compounds from SD-1 to SD-3 of untreated and treated Cabernet Gernischt grapes						
Compounds	2-Octanol Equivalent Concentration (µg/L)					
	SD-1-CK	SD-1-BTH	SD-2-CK	SD-2-BTH	SD-3-CK	SD-3-BTH
<i>Fatty Acids</i>						
Linoleic acid	nd	nd	nd	nd	0.06±0.01aA	0.02±0.00aA
α-Linolenic acid	nd	nd	nd	nd	nd	nd
Hexanoic acid	nd	0.05±0.00A	nd	0.16±0.01AB	0.06±0.00aA	0.18±0.02bAB
(E)-2-Hexenoic acid	nd	nd	nd	nd	nd	nd
Octanoic acid	nd	nd	nd	nd	nd	nd
<b>Total Fatty Acids</b>	<b>-</b>	<b>0.05±0.00</b>	<b>-</b>	<b>0.16±0.01</b>	<b>0.12±0.01aA</b>	<b>0.2±0.02aA</b>
<i>C<sub>6</sub> Compounds</i>						
Hexanal	8.03±1.81bA	4.24±0.39aA	9.08±0.09aA	10.07±0.07aB	3.68±1.00aA	14.16±0.05bB
2-Hexenal	60.83±9.10bB	39.14±2.31aA	52.79±8.03aB	63.62±4.88bB	48.55±2.75aB	89.82±3.59bB
3-Hexenal	nd	nd	0.37±0.01a	3.55±1.02bB	nd	1.30±0.01A
(E)-2-Hexenal	1.48±0.25b	0.35±0.04aAB	0.96±0.02a	0.66±0.05aAB	nd	0.16±0.00A
(Z)-3-Hexenal	0.21±0.02a	0.49±0.03aB	nd	0.63±0.03B	0.38±0.03	nd
1-Hexanol	6.38±2.59aA	21.80±1.95bB	11.56±1.2aA	17.13±1.3bA	15.70±2.01aA	10.86±0.02aA
3-Hexen-1-ol	0.13±0.01a	0.27±0.06a	nd	0.27±0.08	0.24±0.02	nd
(E)-2-Hexenol	5.64±2.16aA	22.23±3.10bB	8.51±2.13aA	13.51±1.03bA	15.26±0.9bAB	9.76±0.05aA
(Z)-2-Hexen-1-ol	nd	0.21±0.01A	0.22±0.02b	0.12±0.02aA	0.12±0.01	nd
(E)-3-Hexen-1-ol	nd	nd	0.20±0.05	nd	nd	0.14±0.00
(Z)-3-Hexen-1-ol	7.23±0.04aA	18.51±7.22bB	15.06±0.28aB	24.56±1.4aC	16.40±1.02aB	9.24±0.99aAB
<b>Total C<sub>6</sub> Compounds</b>	<b>89.93±15.98aA</b>	<b>107.24±15.11bA</b>	<b>98.74±11.83aA</b>	<b>134.12±9.88bA</b>	<b>100.31±7.74aA</b>	<b>135.44±4.71bB</b>
<i>Carbonyls</i>						
Decanal	0.23±0.02a	0.19±0.01aA	0.42±0.09a	0.43±0.01aB	0.22±0.07a	0.23±0.02aA
Octanal	0.36±0.03aA	0.36±0.05aB	0.54±0.04aA	0.69±0.06aC	0.46±0.03aA	0.64±0.01aC
(E)-2-Octenal	0.26±0.04aA	0.40±0.15aA	0.39±0.07aA	0.33±0.01aA	0.59±0.05aA	1.10±0.00bC
(E)-2-Pentenal	nd	0.34±0.03A	0.37±0.01	nd	nd	1.00±0.00A
Nonanal	1.31±0.05aAB	0.95±0.09aA	1.78±0.09aB	1.29±0.1aB	1.18±0.08aAB	1.61±0.06aB
(E)-2-Nonenal	0.16±0.03a	0.10±0.00aA	nd	0.07±0.00A	0.35±0.00b	0.15±0.04aA
Heptanal	nd	nd	nd	0.08±0.00	nd	nd
(Z)-2-Heptenal	0.85±0.2aA	1.02±0.07aB	0.95±0.05aA	0.89±0.04aA	1.17±0.06aB	2.00±0.01aB
Benzaldehyde	0.30±0.02aAB	0.32±0.04aB	0.37±0.07aAB	0.38±0.03aB	0.33±0.00aAB	0.34±0.02aB
(E, E)-2,4-Nonadienal	nd	nd	nd	nd	nd	nd
(E, Z)-2,6-Nonadienal	nd	nd	nd	nd	0.26±0.00	nd
(E, E)-2,4-Hexadienal	0.11±0.01aA	0.12±0.07aA	0.25±0.08aAB	0.20±0.01aA	0.49±0.09aBC	0.51±0.08aC
(E, E)-2,4-Heptadienal	0.30±0.04aAB	0.21±0.07aA	0.20±0.01aAB	0.66±0.07bB	1.48±0.1aC	1.27±0.1aC

1-Octen-3-one	nd	nd	0.26±0.03A	nd	0.45±0.05B	nd
Penten-3-one	0.08±0.01A	nd	0.03±0.00A	nd	0.12±0.00aA	0.20±0.01aA
Acetophenone	0.35±0.03aAB	0.36±0.05aA	0.43±0.02aB	0.32±0.02aA	0.24±0.02aAB	0.37±0.03bA
6-Methylhept-5-en-2-one	0.87±0.2aBC	0.69±0.03aC	0.33±0.05aAB	0.32±0.04aA	0.75±0.02bB	0.46±0.04aB
<b>Total Carbonyls</b>	<b>5.19±0.68aAB</b>	<b>5.04±0.66aA</b>	<b>6.33±0.58aAB</b>	<b>5.65±0.39aA</b>	<b>8.08±0.57aB</b>	<b>9.88±0.42bB</b>
<b>Alcohols</b>						
1-Decanol	nd	nd	nd	nd	nd	nd
1-Octanol	0.39±0.05aA	0.51±0.01aA	0.44±0.02aA	0.37±0.01aA	0.59±0.04aA	0.81±0.06aA
2-Octanol	20±0.00aA	20±0.00aA	20±0.00aA	20±0.00aA	20±0.00aA	20±0.00aA
(E)-2-Octen-1-ol	0.10±0.02aA	0.19±0.01aA	0.11±0.00A	nd	0.04±0.01aA	0.45±0.03bB
1-Octen-3-ol	0.50±0.03aA	0.64±0.05aA	1.03±0.12aB	0.96±0.03aA	0.40±0.07aA	0.81±0.09bA
1-Octyn-3-ol	nd	nd	nd	0.17±0.04	nd	nd
1-Pentanol	0.42±0.1aB	0.35±0.16aB	0.06±0.01aA	0.15±0.05aA	0.08±0.00A	nd
1-Penten-3-ol	nd	0.22±0.01A	0.03±0.01aA	0.22±0.01aA	0.27±0.00AB	nd
(Z)-2-Penten-1-ol	nd	0.75±0.03B	nd	0.34±0.01A	nd	nd
1-Nonanol	nd	0.39±0.09A	0.31±0.03aA	0.35±0.04aA	0.60±0.03aAB	0.64±0.02aB
2-Nonanol	nd	nd	0.15±0.02a	0.21±0.02a	nd	nd
(E)-2-Nonen-1-ol	nd	nd	nd	nd	0.09±0.00	nd
(Z)-6-Nonen-1-ol	nd	nd	0.04±0.00	nd	nd	nd
1-Heptanol	0.22±0.03aA	0.28±0.08aA	0.45±0.08aB	0.31±0.03aA	0.32±0.07aA	0.80±0.02bB
(E)-2-Hepten-1-ol	nd	0.47±0.07	nd	nd	nd	nd
Dehydrolinalool (Hotrienol)	nd	nd	nd	nd	nd	nd
2-Ethylhexanol	0.32±0.05aA	0.87±0.03bA	0.87±0.08aA	2.45±0.09bB	2.72±0.02aBC	4.83±0.1bC
2-Butyl-1-Octanol	0.03±0.01A	nd	nd	nd	0.11±0.00A	nd
Benzyl alcohol	0.10±0.01aA	0.16±0.04aA	0.23±0.13aA	0.51±0.09bB	0.21±0.03aA	0.18±0.01aA
Phenylethyl Alcohol	0.49±0.06aA	0.24±0.05aA	0.58±0.01aA	0.80±0.08bB	0.44±0.04aA	0.51±0.05aAB
Methylbenzyl Alcohol	nd	nd	nd	nd	nd	nd
(E, E)-2,4-Heptadien-1-ol	0.05±0.01	nd	0.10±0.00	nd	nd	0.16±0.01
(E, E)-2,4-Octadien-1-ol	nd	nd	nd	nd	nd	0.06±0.00
(6S)-6-Methyl-1-octanol	0.08±0.02aA	0.17±0.03aA	0.22±0.09aA	0.32±0.1aB	0.11±0.00aA	0.26±0.02aB
3-Methyl-1-butanol	nd	nd	0.17±0.05	nd	nd	nd
3-Methyl-3-heptanol	nd	nd	0.10±0.00a	0.18±0.02a	nd	nd
6-Methyl-5-hepten-2-ol (Sulcatol)	0.10±0.00A	nd	0.06±0.01A	nd	0.5±0.01B	nd
<b>Total Alcohols</b>	<b>22.79±0.29aA</b>	<b>25.25±0.66bA</b>	<b>24.94±0.76aA</b>	<b>27.34±0.62bB</b>	<b>26.48±0.32aAB</b>	<b>29.51±0.32bB</b>
<b>Esters</b>						
Ethyl Acetate	0.15±0.02aA	0.34±0.01aA	0.45±0.06B	0.12±0.00A	0.57±0.11B	2.25±0.1C
Hexyl acetate	0.17±0.01	nd	nd	0.12±0.00	nd	nd
Ethyl Octanoate	0.25±0.03aA	0.15±0.01aA	0.19±0.04aA	1.70±0.03aB	nd	0.12±0.00A
(E)-2-Hexenyl acetate	0.25±0.04aA	0.27±0.00aA	0.31±0.07aB	0.26±0.02aA	0.45±0.02bBC	0.19±0.01aA
Hex-(3Z)-enyl butyrate	nd	nd	nd	nd	0.13±0.00	nd
(3Z)-3-Hexen-1-yl acetate	nd	0.73±0.05	0.65±0.1AB	nd	0.72±0.01AB	nd

(3Z)-3-Hexen-1-yl 3-methylbutanoate	nd	nd	0.08±0.01	nd	0.11±0.00	nd
(Z)-3-Hexenyl 2-Methylbutanoate	nd	nd	nd	nd	nd	nd
3-Hydroxy-2,4,4-trimethylpentyl 2-methylpropanoate	0.11±0.03aA	0.17±0.01aA	0.11±0.02aA	0.16±0.01aA	0.05±0.00A	nd
(1-hydroxy-2,4,4-trimethylpentan-3-yl) 2-methylpropanoate	0.09±0.02aA	0.13±0.07aB	0.08±0.00aA	0.12±0.01aB	0.04±0.00A	nd
<b>Total Esters</b>	<b>1.01±0.15aA</b>	<b>1.78±0.13bA</b>	<b>1.88±0.31aB</b>	<b>2.48±0.07bB</b>	<b>2.06±0.14aB</b>	<b>2.55±0.11bB</b>
<b>Terpenes and Norisoprenoids</b>						
Citral	nd	nd	0.08±0.02	nd	nd	nd
Geraniol	0.11±0.00A	nd	0.33±0.04bB	0.13±0.01aA	0.09±0.01aA	0.2±0.00aA
β-ionone	0.05±0.03aA	0.06±0.02aA	0.11±0.01aA	0.04±0.02aA	0.07±0.02aA	0.08±0.01aA
Linalool	0.25±0.01aA	0.50±0.1aA	0.35±0.05AB	nd	0.54±0.02aC	0.69±0.02aB
α-Terpineol	nd	nd	nd	nd	0.07±0.00	nd
β-Cyclocitral	0.23±0.1aA	0.31±0.1aA	0.50±0.09aB	0.33±0.02aA	0.47±0.02aB	0.43±0.01aA
Terpinen-4-ol	nd	nd	nd	0.06±0.01A	0.19±0.03A	nd
Theaspirane	0.06±0.00A	nd	0.07±0.03aA	0.29±0.02bB	0.26±0.02aB	0.10±0.01aA
Limonene	0.14±0.00aA	0.20±0.01aB	nd	0.43±0.04B	0.27±0.1bB	0.09±0.00aA
β-damascenone	nd	nd	nd	0.10±0.02A	0.24±0.01aB	0.2±0.01aA
Geranyl acetone	0.03±0.00	nd	0.10±0.01	nd	nd	0.04±0.00
Dihydrocarveol	0.03±0.00	nd	nd	nd	nd	nd
<b>Total Terpenes and Norisoprenoids</b>	<b>0.89±0.14aA</b>	<b>1.07±0.23bA</b>	<b>1.55±0.26bB</b>	<b>1.39±0.14aB</b>	<b>2.21±0.23bC</b>	<b>1.83±0.06aC</b>
<b>Others</b>						
m-Cresol	nd	nd	nd	nd	nd	nd
o-Cymene	0.08±0.01A	nd	0.18±0.04aA	0.15±0.01a	nd	nd
m-Xylene	nd	0.34±0.04	nd	nd	nd	nd
p-Xylene	1.07±0.07C	nd	0.07±a0.00A	0.07±0.02aA	0.25±0.05aB	2.62±0.06bC
Indene	nd	nd	0.22±0.02A	nd	nd	0.98±0.04C
Phenol	0.04±0.01aA	0.04±0.00a	0.04±0.00A	nd	0.06±0.01A	nd
Styrene	0.71±0.08bB	0.34±0.08aA	1.64±0.12bC	1.23±0.00aB	0.41±0.02aA	1.50±0.2bC
Toluene	0.14±0.05aA	0.19±0.05aA	0.14±0.04aA	0.22±0.00aA	0.56±0.01aB	2.09±0.03bB
Eucalyptol (Cineole)	1.69±0.3a	1.97±0.54a	2.80±0.13b	2.07±0.03a	nd	nd
Ethylbenzene	0.06±0.01a	0.10±0.01aA	1.03±0.05a	0.49±0.04aB	nd	0.25±0.02A
Butylated Hydroxytoluene	19.68±0.8aA	23.71±1.31bC	11.33±0.42aA	18.40±1.04bB	20.93±0.42bA	12.71±0.9aA
2-Ethylfuran	nd	0.08±0.03A	0.06±0.01a	0.05±0.00aA	nd	0.10±0.00A
α-Caryophyllene	0.44±0.08	nd	0.07±0.01a	0.04±0.00a	nd	0.04±0.00
(E)-Caryophyllene	0.40±0.01a	0.66±0.02aB	0.05±0.01a	0.04±0.00aA	nd	0.07±0.00A
1,2,4-trimethylbenzene	0.13±0.00A	nd	0.04±0.01aA	0.04±0.02aA	0.08±0.01aA	0.31±0.01bB
<b>Others Total</b>	<b>24.45±1.42aD</b>	<b>27.42±2.08bD</b>	<b>17.67±0.86aAB</b>	<b>22.81±1.16bBC</b>	<b>22.29±0.52bC</b>	<b>20.66±1.26aB</b>

Compounds	2-Octanol Equivalent Concentration (µg/L)					
	SD-4-CK	SD-4-BTH	SD-5-CK	SD-5-BTH	SD-6-CK	SD-6-BTH
<i>Fatty Acids</i>						

Linoleic acid	0.07±0.01aA	0.05±0.01aA	0.03±0.00aA	0.02±0.00aA	0.06±0.01aA	0.05±0.02aA
α-Linolenic acid	0.11±0.00A	nd	0.05±0.01aA	0.03±0.00a	0.04±0.01aA	0.06±0.02a
Hexanoic acid	0.13±0.01aA	0.25±0.02bB	0.35±0.02aB	0.50±0.01aBC	0.58±0.02aB	0.83±0.04bC
(E)-2-Hexenoic acid	nd	nd	nd	nd	0.28±0.02a	0.64±0.02b
Octanoic acid	nd	nd	0.06±0.01a	0.12±0.01a	0.16±0.02a	0.26±0.01a
<b>Total Fatty Acids</b>	<b>0.31±0.02aB</b>	<b>0.3±0.03aA</b>	<b>0.49±0.03aB</b>	<b>0.67±0.02bB</b>	<b>1.12±0.08aC</b>	<b>1.84±0.11bC</b>
<b>C<sub>6</sub> Compounds</b>						
Hexanal	53.63±7.03bB	34.12±2.41aC	107.17±3.4bD	42.41±0.5aC	59.85±0.44aC	99.60±2.1bD
2-Hexenal	2.19±0.01aA	116.11±9.0bBC	208.06±11.1aC	225.80±9.1aC	251.50±5.1aC	280.02±9.8bD
3-Hexenal	0.89±0.01	nd	0.80±0.09a	4.59±1.9bC	1.43±0.03a	0.55±0.01aA
(E)-2-Hexenal	116.78±0.04b	1.99±0.02aB	5.69±1.7b	0.80±0.02aB	42.51±5.6b	4.91±3.1aC
(Z)-3-Hexenal	1.29±0.04b	0.21±0.01aA	1.02±0.1a	3.28±1.1bC	nd	nd
1-Hexanol	42.66±1.30aB	74.98±3.45bC	34.01±2.5aB	77.68±7.1bC	22.36±2.3aA	34.77±1.5aB
3-Hexen-1-ol	0.38±0.00	nd	nd	nd	nd	0.26±0.05
(E)-2-Hexenol	30.03±2.07aC	40.70±5.2aC	25.86±2.1aBC	43.48±5.6bC	22.43±0.6aAB	23.07±0.8aB
(Z)-2-Hexen-1-ol	nd	0.40±0.00B	nd	0.22±0.02A	0.15±0.01	nd
(E)-3-Hexen-1-ol	nd	nd	nd	nd	nd	nd
(Z)-3-Hexen-1-ol	2.04±0.04aA	1.61±0.02aA	3.34±0.3aA	25.68±0.2bC	7.30±0.05bA	1.98±0.01aA
<b>Total C<sub>6</sub> Compounds</b>	<b>249.89±10.54aB</b>	<b>270.12±20.11aB</b>	<b>385.96±21.29aB</b>	<b>423.93±25.54bC</b>	<b>407.53±14.13aC</b>	<b>445.16±17.37bC</b>
<b>Carbonyls</b>						
Decanal	0.51±0.02b	0.28±0.05aAB	nd	nd	0.02±0.01a	0.13±0.01aA
Octanal	0.83±0.07bAB	0.64±0.06aC	0.39±0.1bA	0.05±0.01aA	nd	0.21±0.02A
(E)-2-Octenal	1.45±0.1bC	1.12±0.21aC	0.99±0.05aB	0.69±0.08aB	0.21±0.01aA	0.57±0.02aB
(E)-2-Pentenal	0.65±0.05a	0.77±0.02aA	0.54±0.02	nd	nd	nd
Nonanal	2.36±0.25aB	1.63±0.11aB	1.21±0.1aAB	0.90±0.04aA	0.44±0.01aA	0.88±0.1aA
(E)-2-Nonenal	0.43±0.00a	0.07±0.01aA	0.06±0.01a	0.35±0.02bB	0.22±0.00a	0.28±0.01aB
Heptanal	0.25±0.02	nd	0.04±0.01a	0.14±0.01a	nd	nd
(Z)-2-Heptenal	1.81±0.09aC	1.92±0.07aB	1.56±0.1aC	1.00±0.00aA	0.70±0.01aA	0.74±0.01aA
Benzaldehyde	0.62±0.03aBC	0.92±0.02aC	0.98±0.02aC	0.50±0.05aC	0.18±0.04aA	0.17±0.07aA
(E, E)-2,4-Nonadienal	nd	0.54±0.00	nd	nd	nd	nd
(E, Z)-2,6-Nonadienal	0.17±0.01	nd	nd	0.25±0.01	0.17±0.01a	0.20±0.00a
(E, E)-2,4-Hexadienal	0.70±0.02bC	0.31±0.01aB	0.20±0.01aAB	0.41±0.02aB	0.14±0.00aA	0.31±0.08aB
(E, E)-2,4-Heptadienal	1.47±0.1aC	1.12±0.05aC	0.43±0.01aB	0.91±0.1bB	0.13±0.01aA	0.58±0.02bB
1-Octen-3-one	0.73±0.06aC	0.44±0.02a	0.23±0.03bA	0.53±0.02b	nd	0.29±0.00
Penten-3-one	0.31±0.02aAB	0.20±0.00aA	0.19±0.02aA	0.12±0.01aA	nd	0.13±0.00A
Acetophenone	0.19±0.03A	nd	nd	0.27±0.02A	0.17±0.01aA	0.37±0.01bA
6-Methylhept-5-en-2-one	1.31±0.09bC	0.48±0.04aB	0.37±0.01aAB	0.33±0.02aA	0.11±0.00aA	0.38±0.01bA
<b>Total Carbonyls</b>	<b>13.80±0.96bC</b>	<b>10.43±0.67aB</b>	<b>7.19±0.49aB</b>	<b>6.44±0.41aA</b>	<b>2.50±0.11aA</b>	<b>5.25±0.36bA</b>
<b>Alcohols</b>						
1-Decanol	0.04±0.00	nd	nd	nd	nd	0.07±0.02
1-Octanol	0.65±0.04aA	0.44±0.11aA	0.54±0.01aA	1.42±0.02aB	1.26±0.01aB	2.61±0.1aB

2-Octanol	20±0.00aA	20±0.00aA	20±0.00aA	20±0.00aA	20±0.00aA	20±0.00aA
(E)-2-Octen-1-ol	0.25±0.02bB	0.05±0.01aA	0.18±0.01A	nd	0.55±0.1bBC	0.16±0.01aA
1-Octen-3-ol	0.84±0.02aAB	0.88±0.12aA	0.57±0.01aA	1.79±0.1aB	1.54±0.05aC	1.95±0.04aB
1-Octyn-3-ol	nd	nd	nd	nd	nd	0.07±0.01
1-Pentanol	1.04±0.03aBC	1.5±0.1aC	0.34±0.1B	nd	1.38±0.2bC	0.21±0.01aA
1-Penten-3-ol	0.40±0.02aB	0.5±0.04aB	nd	nd	0.19±0.01A	nd
(Z)-2-Penten-1-ol	0.31±0.00a	0.5±0.01aB	nd	nd	0.27±0.00	nd
1-Nonanol	0.40±0.03aA	0.86±0.06aB	0.55±0.02aAB	1.31±0.1bC	1.17±0.2bB	0.51±0.01aB
2-Nonanol	nd	nd	nd	1.21±0.08	0.05±0.01	nd
(E)-2-Nonen-1-ol	nd	nd	0.03±0.00	nd	nd	0.03±0.00
(Z)-6-Nonen-1-ol	nd	nd	nd	nd	nd	nd
1-Heptanol	0.32±0.03aA	1.26±0.2bC	0.46±0.02aB	1.33±0.08bC	0.25±0.01aA	0.47±0.02aA
(E)-2-Hepten-1-ol	nd	nd	nd	nd	nd	nd
Dehydrolinalool (Hotrienol)	nd	nd	0.09±0.01	nd	nd	0.19±0.02
2-Ethylhexanol	1.91±0.07aB	4.42±0.1bC	0.55±0.02aA	4.21±0.3bC	3.69±0.2bC	0.67±0.1aA
2-Butyl-1-Octanol	0.35±0.02B	nd	0.79±0.05aC	0.70±0.03a	0.53±0.01aB	0.70±0.02a
Benzyl alcohol	0.14±0.02aA	0.58±0.05bB	0.24±0.01aA	1.18±0.02bC	1.13±0.02bB	0.24±a0.1A
Phenylethyl Alcohol	0.59±0.1aA	0.65±0.07aAB	4.87±0.2bC	1.36±0.03aC	1.54±0.01bB	0.81±0.05aB
Methylbenzyl Alcohol	nd	nd	0.19±0.01	nd	nd	0.26±0.02
(E, E)-2,4-Heptadien-1-ol	nd	nd	nd	nd	0.04±0.01a	0.11±0.01a
(E, E)-2,4-Octadien-1-ol	nd	0.5±0.01	nd	nd	nd	nd
(6S)-6-Methyl-1-octanol	0.17±0.01aA	0.64±0.04bC	0.24±0.02aA	0.78±0.06aC	0.12±0.01aA	0.10±0.01aA
3-Methyl-1-butanol	nd	nd	nd	nd	nd	nd
3-Methyl-3-heptanol	0.19±0.01a	0.50±0.02b	nd	0.10±0.00	0.09±0.02	nd
6-Methyl-5-hepten-2-ol (Sulcatol)	nd	nd	nd	nd	0.54±0.01bB	0.05±0.00a
<b>Total Alcohols</b>	<b>27.61±0.42aB</b>	<b>32.78±0.87bC</b>	<b>29.66±0.49aBC</b>	<b>35.40±0.82bC</b>	<b>34.34±0.89aC</b>	<b>39.21±0.55bD</b>
<b>Esters</b>						
Ethyl Acetate	2.28±0.39C	0.52±0.05B	0.73±0.01B	0.72±0.1B	0.73±0.07B	0.82±0.3B
Hexyl acetate	nd	nd	nd	nd	0.06±0.00a	0.11±0.01a
Ethyl Octanoate	0.19±0.02aA	0.16±0.07aA	nd	nd	nd	nd
(E)-2-Hexenyl acetate	0.27±0.06aA	0.20±0.04aA	0.27±0.03aA	0.29±0.02aA	0.33±0.00B	nd
Hex-(3Z)-enyl butyrate	nd	0.19±0.01	0.19±0.01a	0.08±0.00a	0.82±0.03a	0.98±0.06a
(3Z)-3-Hexen-1-yl acetate	0.13±0.01aA	2.25±0.05bA	1.88±0.4aB	2.28±1.1bA	2.97±0.19aC	4.41±0.2bB
(3Z)-3-Hexen-1-yl 3-methylbutanoate	nd	0.26±0.00A	0.23±0.01a	0.28±0.02aA	0.89±0.05b	0.09±0.00aA
(Z)-3-Hexenyl 2-Methylbutanoate	nd	nd	nd	nd	0.28±0.00a	0.65±0.02b
3-Hydroxy-2,4,4-trimethylpentyl 2-methylpropanoate	0.08±0.00A	nd	0.06±0.00A	nd	nd	0.05±0.00A
(1-hydroxy-2,4,4-trimethylpentan-3-yl) 2-methylpropanoate	0.08±0.01aA	0.03±0.00aA	0.05±0.00A	nd	0.10±0.01aA	0.06±0.01aA
<b>Total Esters</b>	<b>3.04±0.49aC</b>	<b>3.61±0.22bC</b>	<b>3.40±0.46aD</b>	<b>3.65±0.25aC</b>	<b>6.17±0.30aE</b>	<b>7.17±0.60bD</b>
<b>Terpenes and Norisoprenoids</b>						
Citral	nd	0.04±0.01	0.03±0.00	nd	nd	nd
Geraniol	0.50±0.09aC	0.49±0.05aB	0.32±0.01aB	0.32±0.01aB	0.54±0.03C	nd

β-ionone	0.21±0.00aB	0.25±0.03aB	0.26±0.02bB	0.06±0.01aA	0.04±0.01aA	0.19±0.02aB
Linalool	0.37±0.02aAB	0.82±0.05bB	0.47±0.02aB	0.47±0.01aA	0.45±0.00aB	0.4±0.02aA
α-Terpineol	0.04±0.00	nd	nd	0.05±0.01	nd	nd
β-Cyclocitral	0.28±0.02aA	0.68±0.04bB	0.63±0.03bC	0.34±0.1aA	0.29±0.02aA	0.70±0.01bB
Terpinen-4-ol	0.13±0.01A	nd	nd	0.13±0.01A	0.11±0.00aA	0.08±0.01aA
Theaspirane	0.27±0.04aB	0.40±0.07aC	0.32±0.1bBC	0.18±0.00aA	0.55±0.02bC	0.27±0.01aB
Limonene	1.31±0.20B	nd	nd	0.76±0.02	0.19±0.06aA	0.04±0.00aA
β-damascenone	0.16±0.02aA	0.21±0.1aA	0.28±0.03aB	0.16±0.02aA	0.16±0.01aA	0.12±0.04aA
Geranylacetone	nd	nd	0.29±0.02b	0.03±0.01a	nd	nd
Dihydrocarveol	nd	nd	nd	0.03±0.00	nd	0.11±0.00
<b>Total Terpenes and Norisoprenoids</b>	<b>3.27±0.40bE</b>	<b>2.90±0.35aE</b>	<b>2.61±0.23aD</b>	<b>2.52±0.20aD</b>	<b>2.34±0.15bCD</b>	<b>1.92±0.11aC</b>
<b>Others</b>						
m-Cresol	0.13±0.00A	nd	0.02±0.00A	nd	0.04±0.01aA	0.10±0.01a
o-Cymene	0.09±0.00A	nd	0.04±0.01aA	0.03±0.00a	0.02±0.01A	nd
m-Xylene	nd	nd	0.89±0.02	nd	nd	0.88±0.03
p-Xylene	0.93±0.05aC	3.28±0.26bC	nd	0.83±0.01B	0.40±0.01aBC	1.09±0.1aB
Indene	0.15±0.06aA	0.36±0.03bB	0.24±0.01aA	0.14±a0.00A	0.32±0.03aB	0.45±0.1aB
Phenol	0.15±0.00B	nd	0.03±0.00A	nd	0.06±0.01aA	3.50±0.03b
Styrene	0.21±0.05aA	1.03±0.1bB	1.15±0.06bC	0.62±0.01aA	0.57±0.02aB	1.88±0.09bC
Toluene	0.17±0.06aA	1.41±0.02bB	0.21±0.00aA	0.27±0.01aA	0.20±0.02aA	0.24±0.01aA
Eucalyptol (Cineole)	nd	nd	nd	nd	nd	nd
Ethylbenzene	nd	0.11±0.00A	nd	nd	nd	nd
Butylated Hydroxytoluene	16.59±1.06aA	16.20±1.14aAB	15.95±1.1aA	13.97±0.3aA	12.64±0.1aA	13.24±0.5aA
2-Ethylfuran	nd	0.05±0.01A	nd	0.04±0.00A	0.60±0.01a	0.76±0.1aB
α-Caryophyllene	nd	nd	nd	nd	nd	nd
(E)-Caryophyllene	nd	nd	nd	nd	nd	nd
1,2,4-trimethylbenzene	0.11±0.01aA	0.31±0.02bB	0.10±0.00aA	0.05±0.00aA	0.16±0.00A	nd
<b>Others Total</b>	<b>18.54±1.29aBC</b>	<b>22.74±1.58bBC</b>	<b>18.62±1.20bBC</b>	<b>15.95±0.33aA</b>	<b>15.01±0.22aA</b>	<b>22.14±0.97bBC</b>

Data are mean ± SD. Values in a row with different superscripts are significantly different ( $p < 0.05$ ) by the Tukey test. Capital alphabets show differences during development in a sample whiles small alphabets show differences between samples (CK and BTH). Untreated samples (CK); Treated samples (BTH); Sampling date (SD); not detected (nd).