Table S1. Meteorological data for the vineyard in 2018.

Month	Average temperature (℃)	Average Humidity (%)	Solar radiation (W/m^2)	Rain (mm)
1	-0.69	64.80	72.40	1.80
2	2.06	56.67	104.19	0.60
3	11.48	69.09	158.42	22.60
4	17.18	67.30	189.27	21.60
5	21.96	76.33	210.39	55.00
6	26.59	73.53	237.72	24.20
7	29.15	87.51	201.30	39.60
8	28.12	88.29	189.19	266.80
9	21.27	82.34	197.39	44.20
10	13.31	77.67	153.13	1.80
11	8.24	87.86	81.03	28.20
12	0.87	70.97	70.30	5.80

Table S2. Calibration curves for the quantification of volatile compounds.

Compounds	Calibration curves	r^2	Linear range (μg/L)
2-Octanol	Internal standard		
terpenoids			
limonene	y=3.5396x+0.0834	0.9992	0.36-46.47
γ-terpinene	y=7.6736x+0.0068	0.9997	0.24-68.25
citronellol	y=5.3776x-0.0289	0.9968	0.35-86.14
β-myrcene	y=3.7825x+0.0071	0.9999	0.48-68.78
α-terpineol	y=6.9604x-0.09844	0.9942	0.23-48.84
trans-rose oxide	y=0.9452x-0.08954	0.9991	0.27-124.95
norisoprenopids			
methyl heptenone	y=11.679x+0.0014	0.9936	0.44-50.79
C6 alcohols			
1-octanol	y=4.74x-0.0064	0.9978	0.24-55.87
1-hexanol	y=15.23x-0.1745	0.9974	0.36-121.69
1-octen-3-ol	y=6.5186x+0.0891	0.991	0.25-86.45
C6 aldehydes			
hexanal	y=2.8542x-0.0847	0.9935	1.56-865.45
(E)-2-hexenal	y=14.685x+1.1056	0.9989	2.64-1262.64
nonanal	y=1.1443x-0.0476	0.9924	2.25-140.84
decanal	y=8.1567x-0.782	0.9998	1.76-68.46
C6 esters			
ethyl acetate	y=2.4186x-0.06912	0.9994	0.76-564.56
ethyl butanoate	y=0.8541x+0.9654	0.9937	0.56-145.71
ethyl caprylate	y=1.0659x-2.5198	0.9984	5.95-682.95
ethyl heptanoate	y=5.1671x-0.5463	0.9968	0.74-146.68
ethyl 2-hexenoate	y=2.8914x+4.5168	0.9982	0.28-468.26
ethyl 3-hexenoate	y=16.546x+1.5648	0.9999	0.15-174.96
benzene derivatives			
fluorene	y=1.1564x+0.0459	0.9969	1.81-276.61

benzeneacetaldehyde	y=22.489x-6.5814	0.9989	0.16-165.95
toluene	y=1.9548x+0.07485	0.9999	0.32-228.64
Benzaldehyde	y=6.5141x-0.0742	0.9934	1.88-246.62
ethyl benzoate	y=1.8446x-0.0927	0.9975	0.79-554.91
branched volatiles			
2-ethyl-1-hexanol	y=7.489x-1.9813	0.9982	0.59-361.63
1-butanol	y=4.746x-0.0984	0.9996	1.78-164.61
Isobutyl alcohol	y=2.8455x-0.8749	0.9999	1.95-582.41
1-Hexanol	y=3.8412x-0.3181	0.9974	0.49-76.94
Benzene ethanol	y=1.854x-0.1253	0.9959	0.24-143.45

Table S3. Primer sequence for RT-qPCR.

Gene Name	GenBank accession	Forward primer (5'-3')	Reverse primer (5'-3')
VvLOXA	NM_001281094	CGTGAGCGAAGTAAGGCAAAT	TTCCCAGCTAGGCGTAAACA
VvHPL	HM627632	AAGTACACCGGCGACATTCGAG	AGCTCTTTACCCTGGCGTGTTG
VvADH	AF194173	TCCGTTCTCAGAGATCAACAA	ACTCTCTCATCTCAAGATATTCTATGG
VvAAT	AAW22989	TTAATTCAGGTGACCCGATT	TCTCCATACACATGCCATTAG
VvActin	EC969944	GCATCCCTCAGCACCTTCCAGCAG	CCACCTCAACACATCTCCATGTCAACC

Table S4. Effect of seawater treatment on the concentrations and varieties of volatiles in 'Reliance' grape at EL 31.

Compounds (μg Kg^{-1} FW)	Treatment	
	Control	S1
isoprene pathway	23.22±2.55a	21.60±1.27a
terpenoids	19.73±2.56a	18.58±0.63a
eucalyptol	14.73±1.70a	13.96±0.53a
limonene	5.00±0.86a	4.62±0.13a
norisoprenoids	3.49±0.02a	3.02±0.69a
methyl heptenone	3.49±0.02a	3.02±0.69a
fatty acid pathway	238.18±4.34a	232.04±6.61a
C6 aldehydes	234.29±4.20a	229.58±6.63a
hexanal	128.35±1.90a	128.89±4.42a
(E)-2-hexenal	78.73±2.81a	76.25±3.20a
nonanal	21.58±2.19a	21.98±0.54a
heptanal	3.20±0.36	-
2-hexenal	2.43±0.14a	2.47±0.04a
C6 esters	3.90±0.19a	2.45±0.57b
butyl acrylate	2.37±0.47a	2.45±0.57a
butyl butanoate	1.53±0.32	-
amino acid pathway	66.94±2.21a	67.12±5.75a
benzene derivatives	59.62±2.13a	60.01±5.42a
o-xylene	15.83±0.62a	15.81±0.73a

toluene	9.57±1.66a	9.35±1.54a
1,3-dimethyl benzene	7.29±1.38a	8.02±0.96a
ethylbenzene	9.63±0.91a	10.30±0.91a
fluorene	8.34±1.07a	7.40±0.88a
dibenzofuran	7.05±0.11a	7.28±1.52a
phenanthrene	1.91±0.44a	1.85±0.57a
branched volatiles	7.32±0.08a	7.11±0.48a
2,2,4-trimethyl-1,4-pentanediol diisobutyrate	2.48±0.27a	2.09±0.45a
2-ethyl furan	4.84±0.19a	5.02±0.38a
SUM	328.34±8.93a	320.75±7.97a
Varieties	19	17

Values represent the means ± SD of three replicates. "-" means that the compounds were not detected. Different lowercase letters indicate significant differences, according to Tukey multiple comparison post-hoc test at $P < 0.05$.

Table S5. Effect of seawater treatment on the concentrations and varieties of volatiles in 'Reliance' grape at EL 33.

Compounds (μg Kg^{-1} FW)	**Treatment**		
	Control	**S1**	**S2**
isoprene pathway	17.76±0.33b	24.60±1.89a	20.58±0.91b
terpenoids	7.52±0.49b	12.47±2.00a	9.32±1.03ab
limonene	3.61±0.41b	5.82±1.04a	4.11±0.82ab
eucalyptol	2.40±0.32b	3.30±0.15a	3.05±0.31ab
α-pinene	0.79±0.12a	1.53±0.51a	0.89±0.17ab
β-pinene	0.72±0.34a	1.82±0.55a	1.27±0.41a
norisoprenopids	10.24±0.55b	12.13±0.11a	11.27±0.50ab
(E)-3,3-dimethyl cyclohexylidene acetaldehyde	4.95±0.33b	6.19±0.23a	4.98±0.18b
methyl heptenone	4.08±0.40a	4.06±0.32a	4.27±0.31a
(Z)-3,3-dimethyl cyclohexylidene acetaldehyde	1.21±0.18b	1.88±0.25a	2.02±0.22a
fatty acid pathway	140.01±2.98b	162.62±2.90a	168.38±2.69a
C6 alcohols	-	0.65±0.48b	2.13±0.62a
(E)-2-decen-1-ol	-	0.65±0.48a	1.21±0.33a
1-octen-3-ol	-	-	0.92±0.30
C6 aldehydes	103.01±1.19b	113.70±4.46a	114.95±4.74a
hexanal	53.38±3.31a	53.25±2.67a	53.20±2.59a
(E)-2-hexenal	25.82±3.35b	34.27±1.36a	35.63±0.83a
nonanal	15.80±0.23a	17.54±1.13a	17.64±1.87a
decanal	3.81±0.27b	4.04±0.59ab	5.22±0.63a
heptanal	2.00±0.17b	2.83±0.39a	2.01±0.17b
(E)-2-heptenal	0.94±0.21b	1.76±0.33a	1.25±0.22ab
2-hexenal	1.24±0.51	-	-
C6 esters	37.01±2.16b	48.28±2.84a	51.30±2.61a
ethyl acetate	22.24±1.47a	22.26±2.63a	22.36±0.65a
ethyl butanoate	13.59±2.00b	20.95±1.32a	23.26±1.99a

butyl butanoate	1.18±0.19a	1.39±0.09a	1.20±0.25a
ethyl 2-butenoate	-	3.08±0.50a	3.34±0.75a
butyl acetate	-	0.60±0.13a	0.50±0.19a
ethyl propanoate	-	-	0.64±0.24
amino acid pathway	62.94±1.93b	75.45±3.82a	73.81±3.91a
benzene derivatives	42.46±1.40b	53.62±2.57a	43.66±1.58b
o-xylene	10.71±0.57a	12.54±1.28a	10.17±1.42a
ethylbenzene	6.75±0.19a	6.13±0.78ab	4.80±0.78b
fluorene	4.74±0.51a	6.15±0.79a	4.78±0.28a
1,3-dimethyl benzene	4.37±0.54b	6.36±0.34a	5.02±0.61b
phenanthrene	2.75±0.07a	1.95±0.46b	1.68±0.04b
toluene	2.53±0.18b	3.32±0.45a	2.14±0.25b
1,2,3-trimethyl benzene	2.49±0.30b	4.24±0.65a	2.87±0.08b
naphthalene	2.52±0.08c	3.98±0.32a	3.08±0.14b
2-ethyl toluene	1.86±0.60b	3.55±0.27a	2.69±0.22ab
o-cymene	1.47±0.10b	2.58±0.15a	1.78±0.20b
dibenzofuran	1.63±0.36a	1.90±0.32a	2.28±0.63a
indene	0.64±0.10b	0.92±0.06a	0.53±0.14b
benzeneacetaldehyde	-	-	1.20±0.37
1-ethyl-2,3-dimethyl benzene	-	-	0.62±0.10
branched volatiles	20.48±0.63b	21.83±1.31b	30.15±2.54a
2-ethyl-1-hexanol	20.48±0.63b	20.68±1.14b	26.79±2.51a
3-methyl butanal	-	1.15±0.51a	0.99±0.25a
2-pentylfuran	-	-	1.20±0.11
2-ethyl furan	-	-	1.17±0.13
SUM	220.71±3.92b	262.68±8.59a	262.77±6.33a
Varieties	30	33	39

Values represent the means ± SD of three replicates. “-” means that the compounds were not detected. Different lowercase letters indicate significant differences, according to Tukey multiple comparison post-hoc test at $P < 0.05$.

Table S6. Effect of seawater treatment on the concentrations and varieties of volatiles in 'Reliance' grape at EL 35.

Compounds (μg Kg^{-1} FW)	**Treatment**			
	Control	**S1**	**S2**	**S3**
isoprene pathway	3.48±0.21b	5.45±0.21a	3.39±0.64b	4.77±0.21a
terpenoids	3.18±0.19ab	3.28±0.18a	2.26±0.62b	2.49±0.21ab
limonene	2.39±0.15a	1.86±0.17ab	1.63±0.46b	1.87±0.08ab
β-pinene	0.49±0.04b	0.92±0.03a	0.63±0.17ab	0.61±0.13b
α-pinene	0.30±0.03b	0.50±0.01a	-	-
norisoprenopids	1.31±0.11b	2.17±0.08a	1.13±0.02b	2.28±0.32a
methyl heptenone	1.31±0.11b	2.17±0.08a	1.13±0.02b	2.28±0.32a
fatty acid pathway	208.07±8.31a	185.43±2.49b	208.34±7.91a	207.50±9.04a
C6 alcohols	0.32±0.04b	3.57±0.23a	4.36±0.70a	2.74±1.27a

ethanol	-	2.73±0.24a	3.49±0.79a	2.32±1.31a
1-octanol	-	0.53±0.06a	0.61±0.11a	0.42±0.09a
1-heptanol	0.32±0.04a	0.31±0.02ab	0.26±0.02b	-
C6 aldehydes	165.94±6.08a	146.86±3.56b	144.30±3.33b	172.30±5.40a
hexanal	110.36±4.11a	94.79±2.13b	86.84±3.22b	105.83±3.23a
(E)-2-hexenal	40.12±4.03bc	35.56±1.06c	48.08±1.35ab	50.74±4.46a
nonanal	10.29±1.10a	12.33±0.34a	7.41±1.06b	12.00±1.33a
decanal	1.45±0.16b	2.50±0.35a	1.06±0.14b	2.70±0.34a
(E)-2-octenal	-	1.25±0.15	-	-
(E)-2-heptenal	0.42±0.04ab	0.44±0.05a	0.30±0.07b	0.30±0.04b
2-hexenal	3.30±0.31	-	-	-
(E,E)-2,4-hexadienal	-	-	0.48±0.13a	0.61±0.15a
pentanal	-	-	0.12±0.00a	0.12±0.05a
C6 esters	41.80±2.27b	35.00±2.04bc	59.68±4.60a	32.46±3.12c
ethyl butanoate	30.10±1.33a	16.49±0.66b	20.37±2.74b	16.71±2.62b
ethyl acetate	5.68±0.95b	7.28±0.72b	16.79±1.90a	8.24±0.35b
ethyl 2-butenoate	-	4.41±0.49b	6.54±0.73a	1.19±0.21c
ethyl valerate	2.12±0.07c	3.37±0.08a	3.06±0.25ab	2.64±0.23b
ethyl 3-hexenoate	2.37±0.23a	1.60±0.22b	2.19±0.42ab	2.72±0.18a
ethyl 2-hexenoate	0.45±0.07b	0.77±0.18b	1.98±0.15a	0.46±0.02b
ethyl heptanoate	-	0.64±0.16b	1.27±0.13a	0.30±0.11b
ethyl 4-octenoate	-	0.45±0.22b	1.15±0.17a	-
butyl butanoate	0.55±0.07a	-	-	0.19±0.06b
propyl butyrate	0.28±0.02	-	-	-
ethyl (E,Z)-2,4-decadienoate	0.25±0.01b	-	0.75±0.04a	-
ethyl caprylate	-	-	4.77±0.36	-
ethyl (E)-4-heptenoate	-	-	0.38±0.05	-
ethyl caprate	-	-	0.23±0.01	-
ethyl (E)-4-decenoate	-	-	0.19±0.03	-
amino acid pathway	32.49±1.26b	40.84±2.46a	18.67±2.59d	25.49±1.64c
benzene derivatives	22.54±1.70a	24.30±2.97a	11.29±2.27b	15.68±0.29b
o-xylene	7.22±0.77a	6.61±0.95ab	3.26±1.02c	4.63±0.16bc
1,3-dimethyl benzene	2.93±0.35a	2.74±0.45a	1.56±0.28b	1.88±0.11b
mesitylene	1.97±0.30a	2.16±0.23a	-	-
fluorene	1.57±0.40ab	1.97±0.21a	1.25±0.19b	1.62±0.14ab
ethyl benzoate	-	1.50±0.11	-	-
ethylbenzene	1.54±0.32a	1.51±0.22a	0.56±0.22b	0.95±0.05ab
toluene	1.73±0.22a	1.64±0.23ab	0.70±0.21c	1.14±0.10bc
styrene	1.88±0.20a	1.30±0.19b	0.80±0.24c	1.34±0.07b
p-cymene	0.78±0.05a	1.09±0.16a	0.91±0.27a	0.85±0.04a
dibenzofuran	1.14±0.28a	1.00±0.19ab	0.63±0.07b	0.91±0.09ab
2-ethyl toluene	1.46±0.22a	0.93±0.28ab	0.50±0.10b	1.10±0.29ab
naphthalene	-	0.77±0.01a	0.45±0.09b	0.50±0.06b
phenanthrene	0.33±0.05a	0.44±0.14a	0.32±0.02a	0.44±0.08a

benzeneacetaldehyde	-	0.65±0.29a	0.37±0.07a	0.31±0.06a
branched volatiles	9.95±0.45b	16.54±0.57a	7.38±0.43c	9.81±1.40b
2-ethyl-1-hexanol	7.74±0.72b	14.99±0.68a	5.51±0.35c	8.35±1.17b
2,2,4-trimethyl-1,4-pentanediol diisobutyrate	1.20±0.11a	1.10±0.11a	0.77±0.16a	1.22±0.33a
ethyl 4-methyl pentanoate	-	0.45±0.12a	0.70±0.21a	-
2,2-dimethyl-3-heptanone	1.01±0.18	-	-	-
ethyl 3-methyl-2-butenoate	-	-	-	0.23±0.02
2-ethyl furan	-	-	0.39±0.07	-
SUM	245.05±6.86a	231.72±0.55a	230.40±10.67a	237.75±10.69a
Varieties	33	38	42	35

Values represent the means ± SD of three replicates. "-" means that the compounds were not detected. Different lowercase letters indicate significant differences, according to Tukey multiple comparison post-hoc test at $P < 0.05$.

Table S7. Effect of seawater treatment on the concentrations and varieties of volatiles in 'Reliance' grape at EL 36.

Compounds (μg Kg^{-1} FW)	**Treatment**			
	Control	**S1**	**S2**	**S3**
isoprene pathway	2.18±0.43a	2.25±0.25a	3.21±0.69a	2.58±0.48a
terpenoids	2.18±0.43a	2.25±0.25a	3.21±0.69a	2.58±0.48a
limonene	2.18±0.43a	2.25±0.25a	3.21±0.69a	2.58±0.48a
fatty acid pathway	266.94±9.23b	395.29±7.79a	390.50±8.37a	276.69±14.41b
C6 aldehydes	207.36±7.37c	281.21±2.06a	268.67±8.70a	242.84±14.56b
hexanal	143.88±5.36b	193.64±2.33a	191.53±11.16a	160.47±11.36b
(E)-2-hexenal	43.46±3.91b	65.27±4.23a	56.09±1.58a	63.69±5.26a
nonanal	9.64±0.54b	14.32±0.84a	11.93±0.57ab	11.12±1.46b
4-oxo-2-hexenal	8.17±0.62a	5.38±0.73a	6.25±1.26a	5.55±1.90a
decanal	2.22±0.38ab	2.60±0.21ab	2.86±0.45a	2.01±0.11b
C6 esters	59.58±5.21b	114.08±8.14a	121.84±1.06a	33.85±1.94c
ethyl acetate	29.13±1.67c	45.71±2.58b	51.76±1.70a	15.16±1.69d
ethyl butanoate	13.73±1.95b	21.01±1.32a	21.15±2.30a	14.60±0.67b
ethyl 2-butenoate	4.29±0.75b	14.29±1.24a	14.65±0.89a	-
ethyl 2-hexenoate	2.81±0.54ab	2.41±0.19b	3.46±0.21a	-
ethyl valerate	3.10±0.37a	2.83±0.34a	3.00±0.26a	2.66±0.36a
ethyl heptanoate	2.50±0.50ab	3.28±0.42a	3.34±0.51a	1.43±0.56b
ethyl 3-hexenoate	2.03±0.49a	1.95±0.84a	2.05±0.11a	-
ethyl (E,Z)-2,4-decadienoate	1.19±0.52b	2.81±0.46a	2.42±0.23a	-
ethyl caprate	0.80±0.20	-	-	-
ethyl caprylate	-	16.80±1.37a	16.54±1.03a	-
ethyl 4-octenoate	-	3.00±0.63a	3.45±0.62a	-
amino acid pathway	17.13±0.98b	18.37±1.06ab	19.05±1.87ab	21.06±1.21a
benzene derivatives	6.35±0.86b	11.21±0.76a	10.95±1.45a	11.92±0.96a
fluorene	1.98±0.14a	2.70±0.51a	2.31±0.16a	2.57±0.70a

dibenzofuran	1.89±0.25a	2.60±0.40a	2.05±0.50a	2.16±0.38a
o-xylene	1.52±0.68b	2.74±0.14a	3.02±0.38a	3.39±0.04a
toluene	0.96±0.29b	1.57±0.13a	1.63±0.16a	1.89±0.07a
1,3-dimethyl benzene	-	1.59±0.15a	1.94±0.79a	1.93±0.15a
branched volatiles	10.78±0.75a	7.16±0.31c	8.09±0.78b	9.13±0.35bc
2-ethyl-1-hexanol	-	-	-	1.57±0.13
2,2,4-trimethyl-1,4-pentanediol diisobutyrate	2.25±0.20a	2.32±0.33a	2.28±0.10a	1.94±0.22a
2,2-dimethyl-3-heptanone	8.54±0.54a	4.84±0.08b	5.81±0.79b	4.56±0.25b
2-ethyl furan	-	-	-	1.06±0.39
SUM	286.25±10.01b	423.69±9.19a	419.36±9.73a	303.87±16.11b
Varieties	21	24	24	20

Values represent the means ± SD of three replicates. "-" means that the compounds were not detected. Different lowercase letters indicate significant differences, according to Tukey multiple comparison post-hoc test at $P < 0.05$.

Table S8. Effect of seawater treatment on the concentrations and varieties of volatiles in 'Reliance' grape at EL 37.

Compounds (μg Kg^{-1} FW)	**Treatment**			
	Control	**S1**	**S2**	**S3**
isoprene pathway	18.49±2.02b	27.68±4.05a	19.49±2.36b	20.69±1.21b
terpenoids	15.86±1.05b	24.09±3.63a	17.23±2.59b	16.34±1.52b
limonene	7.62±1.24a	11.16±1.80a	9.84±1.42a	10.21±0.99a
2-carene	1.93±0.32a	1.74±0.41a	1.74±0.55a	1.10±0.22a
eucalyptol	1.74±0.35a	1.39±0.22a	1.23±0.23a	1.07±0.21a
β-pinene	0.96±0.31a	1.86±0.10a	1.50±0.46a	1.51±0.48a
4-thujanol	1.35±0.09a	-	1.28±0.10a	-
γ-terpinene	1.44±0.43a	1.61±0.48a	-	1.63±0.28a
α-pinene	0.83±0.42a	1.26±0.15a	0.73±0.23a	0.82±0.12a
β-myrcene	-	5.06±0.96	-	-
sabinene	-	-	0.89±0.32	-
norisoprenopids	2.63±1.06b	3.59±0.43ab	2.26±0.44b	4.35±0.31a
methyl heptenone	2.63±1.06a	3.59±0.43a	2.26±0.44a	3.44±0.43a
β-ionone	-	-	-	0.91±0.29
fatty acid pathway	407.92±11.98b	479.65±4.57a	497.17±1.57a	414.48±5.46b
C6 alcohols	5.75±0.72a	2.34±0.38b	-	2.51±0.59b
1-hexanol	5.75±0.72a	1.26±0.20b	-	1.28±0.41b
1-octanol	-	1.07±0.21a	-	1.22±0.34a
C6 aldehydes	196.02±6.39c	217.07±9.33ab	206.84±3.36bc	232.08±7.02a
hexanal	107.46±3.06b	110.86±5.22ab	122.87±3.14a	117.08±7.20ab
(E)-2-hexenal	70.69±2.64ab	74.84±3.53a	58.24±5.05b	77.90±6.87a
nonanal	11.23±1.12c	23.49±2.04a	17.78±1.08b	23.99±1.72a
decanal	3.87±0.65b	7.88±0.97a	5.44±0.23ab	7.81±2.06a
4-oxo-2-hexenal	2.76±0.22a	-	2.51±0.59a	4.06±0.92a

(E)-2-heptenal	-	-	-	1.24±0.09
C6 esters	206.16±6.73c	260.25±6.57b	290.33±1.91a	179.89±11.95d
ethyl butanoate	58.20±2.91a	63.54±8.09a	59.23±5.29a	56.06±6.49a
ethyl acetate	52.51±4.36b	62.45±2.05a	65.80±3.09a	51.18±4.20b
ethyl caprylate	24.08±1.83b	33.93±2.02a	39.08±3.27a	16.94±2.61c
ethyl (E,Z)-2,4-decadienoate	18.00±1.54bc	23.34±2.56b	34.44±2.06a	9.94±5.51c
ethyl valerate	14.39±1.55a	9.75±1.10b	9.17±0.81b	8.12±1.65b
ethyl (Z)-2-butenoate	7.66±1.15	-	-	-
ethyl 2-hexenoate	5.66±0.98b	12.24±1.68a	15.34±1.42a	6.79±0.88b
ethyl 3-hexenoate	5.14±0.99a	4.68±0.39a	-	4.33±0.39a
ethyl heptanoate	4.17±0.36b	8.81±1.12a	11.22±0.85a	5.68±1.71b
ethyl sorbate	3.09±0.52b	5.95±0.48a	8.06±0.67a	3.48±1.48b
ethyl (E)-4-hexenoate	2.70±1.04ab	3.01±0.26ab	4.01±0.10a	2.08±0.23b
butyl butanoate	2.22±0.94a	1.85±0.20a	1.11±0.27a	2.03±0.29a
ethyl caprate	1.71±0.46b	-	5.14±0.74a	-
ethyl (E)-2-octenoate	2.02±0.56c	5.90±0.57b	10.33±0.03a	2.40±1.19c
ethyl 4-octenoate	1.36±0.08c	3.49±0.75b	5.44±0.70a	2.30±1.05bc
ethyl propanoate	1.88±0.63a	1.68±0.61a	1.58±0.24a	0.95±0.10a
ethyl (E)-2-decenoate	1.37±0.73	-	-	-
ethyl (E)-4-decenoate	-	9.98±1.84a	6.98±1.06a	-
ethyl 2-butenoate	-	9.66±0.79a	13.38±1.99a	6.94±5.19a
propyl butyrate	-	-	-	0.68±0.17
amino acid pathway	61.69±5.79a	65.42±3.93a	46.14±2.47b	64.88±5.73a
benzene derivatives	38.30±3.15a	40.34±3.22a	31.87±2.28a	35.74±6.05a
fluorene	11.29±1.11a	6.55±0.98ab	4.91±0.79b	7.76±4.08ab
dibenzofuran	5.59±1.23a	4.60±0.67a	3.87±0.95a	4.29±2.32a
o-xylene	5.70±1.08a	8.18±1.73a	6.27±0.98a	5.12±0.69a
phenanthrene	2.76±0.65a	2.02±0.17a	1.67±0.79a	2.30±0.87a
2-ethyl toluene	3.18±1.20a	2.61±0.78a	1.96±0.46a	2.91±0.47a
o-cymene	3.35±1.16a	3.30±0.59a	3.04±0.52a	3.16±0.32a
1,3-dimethyl benzene	1.77±0.36b	3.59±0.37a	3.00±0.21a	3.10±0.44a
4-methyl dibenzofuran	1.61±0.36a	-	0.72±0.49a	-
toluene	1.22±0.29a	1.37±0.14a	1.35±0.07a	0.99±0.27a
benzeneacetaldehyde	1.33±0.56a	1.45±0.27a	1.04±0.40a	-
ethylbenzene	0.50±0.34a	0.94±0.18a	0.94±0.19a	0.68±0.17a
naphthalene	-	4.53±1.01a	3.10±0.09a	4.83±0.85a
2,4-dimethyl benzaldehyde	-	0.88±0.34	-	-
acenaphthylene	-	0.32±0.07	-	-
1-ethyl-2,3-dimethyl benzene	-	-	-	0.61±0.28
branched volatiles	23.39±2.87b	25.08±0.85ab	14.28±0.48c	29.14±2.05a
2-ethyl-1-hexanol	18.08±1.34b	20.54±0.73ab	8.55±0.86c	22.14±1.74a
3-methyl butanal	0.94±0.40a	0.65±0.27a	-	1.21±0.14a
isopropyl hexanoate	1.67±0.49a	3.25±1.01a	3.15±0.37a	3.49±0.77a
ethyl 6-methyl-2,4-heptadienoate	1.43±0.63a	-	2.58±0.82a	2.29±0.55a

2,2-dimethyl-3-heptanone	1.27±0.40	-	-	-
isoamyl acetate	-	0.65±0.10	-	-
SUM	488.10±17.36b	572.76±8.76a	562.79±4.93a	500.04±11.82b
Varieties	47	47	44	47

Values represent the means ± SD of three replicates. "-" means that the compounds were not detected. Different lowercase letters indicate significant differences, according to Tukey multiple comparison post-hoc test at $P < 0.05$.