

**Table S1.** Content in ng/g of the 212 identified VOCs in wildflower honey samples.

<b>wildflower honey</b>	
VOC	ng/g
hotrienol	58.914
benzaldehyde	58.432
p-cymen-8-ol	53.578
p-cymenene	51.503
2-ethyl-hexanoic acid	41.446
(E)- (3,3-dimethylcyclohexylidene)-acetaldehyde	32.300
furfural	31.099
octane	24.711
methoxy-phenyl-oxime	22.820
hexanoic acid	16.952
cis-linaloloxide (furanoid)	15.309
Carvacrol	14.214
octanoic acid	13.405
p-cymene	12.974
styrene	12.158
methylene chloride	11.566
Toluene	8.791
benzeneacetaldehyde	8.136
3,9-epoxy-p-mentha-1,8(10)-diene B	7.756
2,5-furandicarboxyaldehyde	6.862
endo-Borneol	6.826
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	6.414
2-ethyl-1-hexanol	6.389
acetic acid	6.022
2-methyl-butanoic acid	5.851
2-methyl-(E)-2-butenal	5.601
nonanoic acid	5.522
1-(2-furanyl)-ethanone	5.486
3-methyl-2-butenal	5.471
pivalic acid	5.378
trans-linaloloxide (furanoid)	5.069
Limonene	5.006
2-methyl-butanal	5.005
1-(2-aminophenyl)-ethanone	4.604
3-methyl-butanal	4.416
2-hydroxybenzaldehyde (salicilaldehyde)	4.336
phenylethyl alcohol	4.335
2,6-dimethyl-3,7-Octadiene-2,6-diol	4.315
1-Octen-3-ol	4.101
$\alpha$ -methylstyrene	4.013
2-methyl-1-butanol + 3-methyl-1-butanol	3.897
decanoic acid	3.766
Heptanoic acid	3.751
methoxy benzaldehyde	3.356
acetophenone	3.347

4-Methyl-1,2-dihydronaphthalene	3.317
Thymol	3.284
Lilac aldehyde isomer 1	3.202
2-methyl-3-buten-2-ol	3.123
Nitrile	2.867
trimethyl-phenol	2.862
3-methyl-butanoic acid	2.833
nonanal	2.685
dimethyl disulfide	2.675
5-methyl-2-furancarboxaldehyde	2.559
1-methoxy-4-propyl-benzene	2.515
Lilac aldehyde isomer 2	2.462
Butanal	2.431
$\alpha$ -terpineol	2.330
(1-methylethyl)-benzene	2.294
$\beta$ -citral	2.197
1,1,5-Trimethyl-1, 2-dihydronaphthalene	2.147
E,Z-2,6-dimethyl-1,3,5,7-octatetraene (E,Z-cosmene)	2.137
ethylbenzene	2.037
Lilac aldehyde isomer 4	2.018
hexanal	1.899
octanal	1.810
2-Caren-10-al	1.753
Lilac aldehyde isomer 3	1.711
3,5,6,8a-tetrahydro-2,5,5,8a-tetramethyl-trans-2H-1-Benzopyran (trans-edulan)	1.695
nonane	1.679
$\alpha$ ,4-Dimethyl-3-cyclohexene-1-acetaldehyde A	1.632
$\alpha$ ,4-Dimethyl-3-cyclohexene-1-acetaldehyde B	1.609
3-methyl-pentanoic acid	1.576
Z,Z-2,6-dimethyl-1,3,5,7-octatetraene (Z,Z-cosmene)	1.550
$\alpha$ -Pinene	1.460
2-ethyl-5methyl-furan	1.437
heptanal	1.397
linalol	1.365
butanol	1.341
(E)-cinnamaldehyde	1.278
Benzyl nitrile	1.261
Ethanone, 1-(4-methylphenyl)-	1.215
p-isopropylbenzaldehyde	1.140
3,6-Dimethyl-2,3,3a,4,5,7a-hexahydrobenzofuran	1.140
2-heptanol	1.099
3-methyl-3-buten-1-ol	1.069
$\alpha$ ,4-Dimethyl-3-cyclohexene-1-acetaldehyde C	1.066
Benzyl Alcohol	1.017
$\gamma$ -terpinene	0.960
Z-3-hexenol	0.893
$\alpha$ -terpinene	0.881
ethyl acetate	0.871
2 o 3-methyl-2-buten-1-ol	0.864

3-methyl-pentanal	0.843
dimethyl sulfide	0.795
chlorobenzene	0.783
geranic acid	0.779
1-nonanol	0.765
$\beta$ -damascenone	0.755
1-Sec-butyl-4-methylbenzene	0.753
2,3-butanedione	0.744
1-hexanol	0.733
4-methylpent-3-en-2-one	0.723
Decanal	0.666
3-methylfuran	0.665
isophorone	0.608
3-hydroxy-2,2,4-trimethylpentyl 2-methyl propanoate	0.579
butan-2-one	0.572
1-octanol	0.563
tetrahydro-4-methyl-2-(2-methyl-1-propenyl)-2H-pyran	0.544
4-oxoisophorone	0.535
terpinen-4-ol	0.468
6-methylhept-5-en-2-one	0.447
(1R)-(-)-Myrtenal	0.437
tert-butanol	0.410
methyl salicylate	0.410
Methyl anthranilate	0.392
pentanal	0.379
$\alpha$ -methyl-benzenemethanol	0.367
1-methyl-4-(1-methylethenyl)-1,2-Cyclohexanediol	0.365
3-methyl-1-pentanol	0.364
dimethoxy-benzaldehyde	0.301
2-methylfuran	0.299
3,9-epoxy-p-mentha-3,8-diene	0.293
lilac alcohol A	0.279
$\beta$ -phellandrene	0.277
2,3-dehydro-1,8-cineole	0.271
ethyl 2-hydroxy-propanoate	0.263
3-methyl phenol	0.261
2,5-dimethylpirazine	0.255
(E)-2-octenal	0.254
2-Furanmethanol	0.251
$\alpha$ -ionene A	0.236
5-ethenyldihydro-5-methyl-2(3H)-furanone	0.235
2-pentylfuran	0.219
$\alpha$ -ionene B	0.213
1-nonene	0.211
lilac alcohol C	0.204
Cyclohexanecarboxaldehyde	0.204
E-2-hexenal	0.203
Eugenol	0.197
$\alpha$ -phellandrene	0.193

(2R,5S)-2-Methyl-5-(prop-1-en-2-yl)-2-vinyltetrahydrofuran	0.179
2,5-dimethylfuran	0.169
2-methyl-1-propanol	0.165
ethyl propanoate	0.146
ethyl benzoate	0.142
trimethoxy-benzaldehyde	0.140
3,9-Epoxy-p-mentha-1,8(10)-diene	0.139
phellandral	0.139
1-octene	0.123
2-methyl-propanoic acid	0.121
3-methyl-benzaldehyde	0.120
2-Hydroxy-3,5,5-trimethyl-cyclohex-2-enone	0.119
eucalyptol	0.117
anisole	0.114
p-cymen-7-ol	0.112
2,4,5-trimethyl-1,3-dioxolane	0.109
1-heptene	0.100
2,3,5-trimethylpyrazine	0.099
hexan-2-one	0.099
octan-3-ol	0.098
6-camphenol	0.092
ethyl benzeneacetate	0.092
1R,4R-p-Mentha-2,8-dien-1-ol	0.091
2-methyl-butanenitrile	0.088
decanol	0.086
2-ethyl-5-methylfuran	0.080
$\beta$ -pinene	0.080
4-methyl benzaldehyde	0.076
1-chloro-octane	0.074
nonan-2-one	0.071
2-methyl-3-pentanol	0.069
p-mentha-1,5-dien-8-ol	0.067
2-methyl-2-pentanol	0.065
ethyl butanoate	0.057
3-methyl-butanenitrile	0.052
Z-2-octene	0.044
2-bornene	0.042
2-heptanone	0.041
2-pentanone	0.036
4-methyl-2-oxovaleric acid	0.031
2,4,4-trimethyl-cyclopentanol	0.029
3-hydroxy-2-butanone	0.029
epoxylinalool	0.028
tetrahydro-2,5-dimethyl-2H-pyranmethanol	0.028
ethyl decanoate	0.027
3,5,5-trimethyl-3-cyclohexenone ( $\beta$ -isophorone)	0.027
6-methyl-5-hepten-2-ol	0.025
4-isopropyl cyclohexanol	0.025
4-butoxy-2-butanone	0.023

decane	0.023
1-(1a,2,3,5,6a,6b-hexahydro-3,3,6a-trimethyloxireno[g]benzofuran-5-yl)-ethanone	0.022
pentan-3-ol	0.020
2-methyl-2-butanol	0.019
isobutyronitrile	0.018
2,4,4-trimethyl-cyclopentanone	0.017
diethyl butanedioate	0.017
2,3-dimethyl-2-norbornene	0.017
1,2-dimethyl-Cyclopentane	0.016
3,9-epoxy-p-mentha-1,8(10)-diene A	0.016
2-methyl-3-Pentanone	0.016
1-(1a,2,3,5,6a,6b-hexahydro-3,3,6a-trimethyloxireno[g]benzofuran-5-yl)-ethanone	0.012
t-butyl-3-hydroxybutyrate	0.012
2,4-dimethylpentan-3-ol	0.011
2-hydroxy-3-pentanone	0.011
2,4,5,6,7,7a-hexahydro-3-(1-methylethyl)-7a-methyl-1H-2-Indenone	0.007
2-(1-methylethylidene)-cyclohexanone	0.007
(E)-1-(3,5,5-trimethyl-2-cyclohexen-1-ylidene)-2-propanone	0.007
2,3-heptadienone	0.005
tetrahydro-2,2,5,5-tetramethyl-furan	0.003

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**Table S2.** Total content in ng/g of ketones and volatile phenols in all samples as a function of the botanical origin.

<b>Σ ketones</b>		<b>Σ volatile phenols</b>	
Flower origin	ng/g	Flower origin	ng/g
Strawberry tree	2999.3	Strawberry tree	851.4
Strawberry tree	1864.5	Strawberry tree	782.5
Eucalyptus	85.0	Linden	174.4
Ivy	81.3	Linden	151.2
Eucalyptus	71.8	Ivy	119.3
Acacia	45.5	Linden	101.9
Ivy	42.8	Heather	96.5
Heather	42.7	Ivy	84.4
Honeydew	42.1	Alps flower	76.2
Ivy	39.4	Apple	68.4
Chestnut	38.7	Eucalyptus	63.6
Honeydew	34.2	Eucalyptus	58.4
Honeydew	33.0	Wildflower	58.0
Eucalyptus	29.1	Honeydew	50.7
Acacia	23.8	Wildflower	45.2
Chestnut	21.9	Paradise Tree	43.5
Paradise Tree	20.7	Wildflower	43.1
Apple	20.1	Eucalyptus	36.9
Eucalyptus	16.4	Wildflower	28.1
Linden	14.9	Ivy	26.9
Heather	13.9	Wildflower	26.0
Acacia	13.8	Wildflower	24.8
Eucalyptus	13.1	Honeydew	24.5
ailanthus	12.0	Honeydew	24.4
Coriander	10.1	Chestnut	22.9
Coriander	9.7	Thyme	21.7
Honeydew	9.3	Heather	20.0
Alps flower	9.3	ailanthus	19.6
French honeysuckle	9.3	Wildflower	18.9
Bitter	9.2	Bitter	18.1
Linden	9.2	Wildflower	18.0
Honeydew	8.2	sweet clover	17.9
Linden	8.0	Eucalyptus	16.1
Wildflower	7.4	Eucalyptus	16.1
Honeydew	7.3	Chestnut	15.9
Honeydew	6.8	Acacia	15.8
Chestnut	6.8	Coriander	14.4
Wildflower	6.8	alfalfa	13.7
Wildflower	6.5	Coriander	13.5
Wildflower	6.4	Sunflowers	13.3
Wildflower	6.3	Acacia	13.1
Honeydew	6.2	Wildflower	10.8
Honeydew	6.2	Wildflower	10.4

Marruca	6.2	Wildflower	10.2
Wildflower	6.1	Honeydew	8.6
Honeydew	6.0	Honeydew	7.9
Honeydew	6.0	Honeydew	7.8
Wildflower	5.6	Honeydew	7.7
Wildflower	5.5	Chestnut	7.5
Clover	5.5	Honeydew	7.4
Honeydew	5.3	Chestnut	7.3
Chestnut	5.3	Honeydew	7.2
Wildflower	5.1	Chestnut	7.1
Thyme	5.1	Clover	7.0
sweet clover	5.0	Honeydew	6.7
Chestnut	4.9	Honeydew	6.6
Orange Tree	4.9	Honeydew	6.2
Forest honey	4.9	Wildflower	6.2
Chestnut	4.8	Honeydew	6.0
Chestnut	4.6	Honeydew	5.7
Chestnut	4.6	Fir	5.7
Honeydew	4.5	Orange Tree	5.5
Honeydew	4.5	Chestnut	5.5
Fir	4.4	Honeydew	5.5
Honeydew	4.4	Wildflower	5.4
Lavander	4.4	Forest honey	5.1
Chestnut	4.3	Wildflower	4.9
Chestnut	4.3	Honeydew	3.9
Honeydew	4.1	French honeysuckle	3.7
Honeydew	4.0	Acacia	3.7
Clover	4.0	Sunflowers	3.7
Acacia	4.0	Acacia	3.7
Wildflower	3.9	Honeydew	3.5
Honeydew	3.9	Honeydew	3.5
Orange Tree	3.8	Chestnut	3.3
Chestnut	3.8	Acacia	3.2
Wildflower	3.8	Acacia	3.1
Acacia	3.8	Chestnut	3.1
Acacia	3.7	Chestnut	3.1
Acacia	3.7	Lavander	3.1
Acacia	3.7	Acacia	2.6
Honeydew	3.5	Acacia	2.6
Wildflower	3.5	Acacia	2.4
Sunflowers	3.5	Clover	2.3
Chestnut	3.4	Honeydew	2.3
Acacia	3.2	French honeysuckle	2.3
French honeysuckle	3.1	Chestnut	2.2
alfalfa	3.1	Wildflower	2.2
Sunflowers	2.9	Chestnut	1.9
Wildflower	2.6	Chestnut	1.9

French  
honeysuckle 2.6

Acacia 2.5

Acacia 2.5

Wildflower 2.2

Acacia 1.8

Wildflower 1.8

Chestnut 1.5

Chestnut 1.4

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Chestnut 1.8

French  
honeysuckle 1.8

Acacia 1.8

Orange Tree 1.6

Acacia 1.4

Marruca 1.2

Acacia 0.9

Chestnut 0.9

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**Table S3.** Content in ng/g of  $\alpha$ -isophorone, 2-hydroxyisophorone, 4-oxoisophorone,  $\beta$ -isophorone and 2,4,5,6,7,7a-hexahydro-3-(1-methylethyl)-7a-methyl-1H-2-indenone in honey samples from different botanical origins.

$\alpha$ -isophorone		2-hydroxyisophorone		4-oxoisophorone		$\beta$ -isophorone		2,4,5,6,7,7a-hexahydro-3-(1-methylethyl)-7a-methyl-1H-2-Indenone	
Flower origin	ng/g	Flower origin	ng/g	Flower origin	ng/g	Flower origin	ng/g	Flower origin	ng/g
Strawberry tree	1897.3	Strawberry tree	230.5	Strawberry tree	177.6	Strawberry tree	14.3	Strawberry tree	61.9
Ivy	27.8	Ivy	2.2	Ivy	15.8	Ivy	0.8	Eucalyptus	0.1
Heather	10.6	Heather	0.8	Eucalyptus	8.4	Heather	0.1	Apple	0.1
Apple	2.6	Paradise Tree	0.6	Paradise Tree	2.5	Forest honey	0.1	Heather	0.1
sweet clover	2.4	sweet clover	0.6	Linden	2.1	Fir	0.1	Ivy	0.1
Eucalyptus	2.4	Eucalyptus	0.5	Bitter	2.1	Eucalyptus	0.1	Marruca	0.0
Bitter	2.2	Bitter	0.3	Apple	2.0	Coriander	0.1	Alps flower	0.0
Alps flower	1.7	Apple	0.3	Heather	1.8	Apple	0.1	ailanthus	0.0
Paradise Tree	1.1	ailanthus	0.2	Alps flower	1.3	Marruca	0.1	Bitter	0.0
Coriander	0.8	Alps flower	0.2	ailanthus	1.0	Honeydew	0.1	Wildflower	0.0
Sunflowers	0.7	Clover	0.1	Honeydew	0.8	Lavander	0.1	Lavander	0.0
Linden	0.7	Wildflower	0.1	Coriander	0.7	Alps flower	0.0	Fir	0.0
Honeydew	0.6	Linden	0.1	Fir	0.7	Orange Tree	0.0	Chestnut	0.0
Wildflower	0.6	Honeydew	0.1	sweet clover	0.7	Bitter	0.0	Linden	0.0
Chestnut	0.6	Fir	0.1	Forest honey	0.6	Clover	0.0	sweet clover	0.0
Clover	0.5	Forest honey	0.1	Wildflower	0.5	French honeysuckle	0.0	Acacia	0.0
ailanthus	0.5	French honeysuckle	0.1	Clover	0.5	Chestnut	0.0	Paradise Tree	0.0
Thyme	0.4	Chestnut	0.1	Thyme	0.4	Sunflowers	0.0	Sunflowers	0.0
Forest honey	0.4	Thyme	0.1	Chestnut	0.3	ailanthus	0.0	French honeysuckle	0.0
alfalfa	0.3	Sunflowers	0.1	Sunflowers	0.3	Acacia	0.0	Coriander	0.0
Lavander	0.3	Coriander	0.0	Orange Tree	0.3	Wildflower	0.0	Honeydew	0.0
French honeysuckle	0.3	Orange Tree	0.0	French honeysuckle	0.2	Linden	0.0	Clover	0.0
Orange Tree	0.2	alfalfa	0.0	Acacia	0.2	alfalfa	0.0	Forest honey	0.0
Marruca	0.2	Marruca	0.0	alfalfa	0.2	sweet clover	0.0	Orange Tree	0.0
Acacia	0.2	Acacia	0.0	Marruca	0.2	Thyme	0.0	Thyme	0.0
Fir	0.1	Lavander	0.0	Lavander	0.1	Paradise Tree	0.0	alfalfa	0.0

**Table S4.** Content in ng/g of lilac aldehyde isomers 1, 2 and 4,  $\alpha$ ,4-dimethyl-3-cyclohexene-1-acetaldehyde A,  $\alpha$ ,4-dimethyl-3-cyclohexene-1-acetaldehyde B, linalool and methyl anthranilate in honey samples from different botanical origins.

Lilac aldehyde isomer 1		Lilac aldehyde isomer 2		Lilac aldehyde isomer 4		$\alpha$ ,4-Dimethyl-3-cyclohexene-1-acetaldehyde A		$\alpha$ ,4-Dimethyl-3-cyclohexene-1-acetaldehyde B		linalool		methyl anthranilate	
Flower origin	ng/g	Flower origin	ng/g	Flower origin	ng/g	Flower origin	ng/g	Flower origin	ng/g	Flower origin	ng/g	Flower origin	ng/g
Coriander	191.5	Coriander	163.8	Coriander	112.9	Coriander	244.1	Coriander	212.4	Coriander	65.2	Orange Tree	32.6
Orange Tree	46.1	Orange Tree	30.5	Orange Tree	29.9	Orange Tree	52.7	Orange Tree	57.3	Paradise Tree	8.7	Coriander	2.3
Marruca	24.1	Marruca	19.0	Marruca	13.8	Sunflowers	21.3	Sunflowers	18.0	ailanthus	7.0	French honeysuckle	1.8
Apple	17.1	Apple	12.9	Apple	9.8	Clover	8.7	Clover	13.0	Forest honey	5.7	Thyme	1.8
Sunflowers	11.6	Paradise Tree	8.3	Sunflowers	7.5	Lavander	5.1	Lavander	6.8	Honeydew	4.6	Eucalyptus	1.2
Paradise Tree	10.4	Sunflowers	7.9	Paradise Tree	6.2	Apple	5.0	Apple	5.2	Linden	4.1	Marruca	1.2
Thyme	8.9	Thyme	7.2	Clover	5.1	Linden	2.4	Thyme	2.5	Apple	3.4	Acacia	1.1
Clover	7.4	ailanthus	5.6	Thyme	5.1	Paradise Tree	2.3	Paradise Tree	2.4	Marruca	2.7	Lavander	0.7
ailanthus	7.1	Clover	5.3	ailanthus	4.7	Eucalyptus	2.1	French honeysuckle	2.3	Orange Tree	2.0	Paradise Tree	0.6
Linden	3.4	Linden	2.8	Linden	2.2	ailanthus	2.1	Linden	2.2	Lavander	1.9	Honeydew	0.6
Eucalyptus	3.2	Lavander	2.6	Eucalyptus	2.0	Wildflower	1.6	ailanthus	1.8	Heather	1.8	Chestnut	0.5
Wildflower	3.2	Eucalyptus	2.5	Wildflower	2.0	Heather	1.4	Eucalyptus	1.8	Acacia	1.5	Ivy	0.5
Lavander	2.7	Wildflower	2.5	Lavander	1.8	Thyme	1.4	Wildflower	1.6	Sunflowers	1.5	ailanthus	0.4
French honeysuckle	2.4	Alps flower	2.3	French honeysuckle	1.8	French honeysuckle	1.3	Heather	1.3	Wildflower	1.4	Wildflower	0.4
Alps flower	2.3	French honeysuckle	1.9	Alps flower	1.1	Strawberry tree	1.3	Strawberry tree	1.2	Alps flower	1.2	alfalfa	0.4
Heather	1.4	Heather	1.2	Heather	0.9	Bitter	0.9	Alps flower	0.9	Strawberry tree	1.1	Linden	0.4
Strawberry tree	1.1	Honeydew	0.8	Honeydew	0.6	Alps flower	0.9	Bitter	0.9	Bitter	0.9	Apple	0.3
Honeydew	1.0	Strawberry tree	0.8	Strawberry tree	0.6	Honeydew	0.8	Honeydew	0.8	Fir	0.9	sweet clover	0.2
Acacia	0.7	Acacia	0.6	Acacia	0.5	Ivy	0.7	Ivy	0.7	Eucalyptus	0.9	Heather	0.2
Chestnut	0.7	Chestnut	0.6	Chestnut	0.4	Marruca	0.6	Marruca	0.6	alfalfa	0.6	Alps flower	0.1
Bitter	0.5	Bitter	0.4	Bitter	0.3	Acacia	0.5	Acacia	0.5	Chestnut	0.5	Sunflowers	0.1
sweet clover	0.4	Ivy	0.3	sweet clover	0.3	sweet clover	0.4	sweet clover	0.5	Clover	0.4	Strawberry tree	0.1
Ivy	0.4	sweet clover	0.3	Ivy	0.3	Chestnut	0.4	Chestnut	0.4	Ivy	0.3	Clover	0.1
alfalfa	0.3	alfalfa	0.2	alfalfa	0.2	alfalfa	0.3	alfalfa	0.3	Thyme	0.2	Forest honey	0.0
Forest honey	0.2	Forest honey	0.1	Forest honey	0.1	Fir	0.1	Forest honey	0.1	sweet clover	0.2	Fir	0.0
Fir	0.1	Fir	0.1	Fir	0.0	Forest honey	0.1	Fir	0.0	French honeysuckle	0.0	Bitter	0.0