Table S1. Genes involved in volatiles biosynthesis in strawberry.

Volatile compounds	Gene	Accession number	Source
Furanones	FaQR	gene28406	Raab et al., 2006
	FaOMT	gene12447	Zorrilla-Fontanesi et al., 2012
Terpenes	FaNES1	KX450224	Aharoni et al., 2004
Volatile esters	SAAT	AF193789	Aharoni et al., 2000
	FaAAT2	JN089766	Cumplido-Laso et al., 2012

Table S2. Primers used in RT-qPCR.

Accession number	Gene	Forward primer	Reverse primer	Product length
gene33863	FaRIB413	TACTGCGGGTCGGCAATCGGACG	ACCGTTGATTCGCACAATTGGTCATCG	150
AB363963.1	GAPDH	GAGTCTACTGGAGTGTTCA	CTTGTATTCGTGCTCATTCA	135
gene28406	FaQR	AGCCAGTTCTTGATCCCACA	CGGTAGCTCTGGAACTCTCA	84
gene12447	FaOMT	CGGAGCAGGAATTTGAAGCC	GCATCCAAAATCCAACTAAGCC	142
KX450224	FaNES1	TGCTGATCATAGATCAGATGG	TGCT(C/T)GGTTTCAACGT(G/T)CAT	136
AF193789	FaSAAT	CAAGATCCCCATTTTCTAGCGT	TGCATTTTATTGATTGGCTGGTG	144
JN089766	FaAAT2	TGTGGAGGTGAGAGGAGCACCCC	TGGCAAGCATACTGGCACCAAGATTTC	211

Table S3. Classification of substance identification in strawberry using GCMS and library search.

classification	Substance
Esters	Butanoic acid, methyl ester
	Butanoic acid, ethyl ester
	Butanoic acid, 1-methyloctyl ester
	Isovaleric acid, octyl ester
	Butyric acid, dodecyl ester
	Benzoic acid, 4-ethoxy-, ethyl ester
	Hexanoic acid, octyl ester
	Sulfurous acid, pentyl undecyl ester
	Butanoic acid, decyl ester
	Butanoic acid, 3-methyl-, methyl ester
	Pentanoic acid, methyl ester
	Butanoic acid, 1-methylethyl ester
	Butanoic acid, 3-methyl-, ethyl ester
	Butanoic acid, butyl ester
	Hexanoic acid, methyl ester
	Hexanoic acid, ethyl ester
	Acetic acid, hexyl ester
	2-Hexen-1-ol, acetate, (Z)-
	Hexanoic acid, 1-methylethyl ester
	Octanoic acid, methyl ester
	2-Octanol, acetate
	2-Propenoic acid, 2-ethylhexyl ester
	Acetic acid, phenylmethyl ester
	Butanoic acid, 2-hexenyl ester, (E)-
	Octanoic acid, ethyl ester
	Acetic acid, octyl ester
	Butanoic acid, 1-methylhexyl ester
	Isopentyl hexanoate
	Acetic acid, chloro, decylester
	Butanoic acid, octyl ester
	Propanoic acid, 2-methyl-, hexyl ester
	Propanoic acid, 2-methyl-, 3-methylbutyl ester
	Bromoacetic acid, decyl ester
	Methyl anthranilate
	Butanethioic acid, S-methyl ester
	Decanoic acid, methyl ester
	Methyl salicylate

	Benzoic acid, 2-amino-, methyl ester
	Sulfurous acid, pentyl tridecyl ester
	Formic acid, heptyl ester
	i-Propyl hexanoate
	Acetic acid, 2-ethylhexyl ester
	Pentafluoropropionic acid, nonyl ester
	Butanoic acid, hexyl ester
	6-Octen-1-ol, 3,7-dimethyl-, acetate
	n-Valeric acid cis-3-hexenyl ester
	Formic acid, decyl ester
	Acetic acid, nonyl ester
	n-Butyric acid 2-ethylhexyl ester
	1,1-Dodecanediol, diacetate
	Butanoic acid, 3-methyl-, octyl ester
	Phthalic acid, butyl 2-methoxyethyl ester
	Phthalic acid, decyl 2-methylallyl ester
Lactones	2(3H)-Furanone, 5-heptyldihydro-
	Butyrolactone
	Methyl Isobutyl Ketone
	2-Heptanone
	5-Hepten-2-one, 6-methyl-
	Cyclohexanone, 2,6,6-trimethyl
	3-Buten-2-one, 4-(2,6,6-trimethyl-1-cyclohexen-1-yl)-
	Camphor
Ketones	Bicyclo[2.2.1]heptan-2-one, 1,7,7-trimethyl-
	Cyclohexanone, 2-methyl-5-(1-methylethenyl)-, trans-
	Cyclohexanone, 2-methyl-5-(1-methylethenyl)-
	2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-
	2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (S)-
	3-Buten-2-one, 4-(2,6,6-trimethyl-1-cyclohexen-1-yl)-
	Methanone, (4-methylphenyl)phenyl-
	2-Hexen-1-ol
	1-Hexanol
	1-Heptanol
	1-Octen-3-ol
Alcohols	1-Hexanol, 2-ethyl-
	1-Nonanol
	1-Tetradecanol
	1-Dodecanol
Aldehydes	Butanal

	3-Hexenal
	Hexanal
	2-Hexenal, (E)-
	2-Hexenal
	Heptanal
	2,4-Hexadienal, (E,E)-
	2-Heptenal, (E)-
	Benzaldehyde
	Octanal
	2,4-Heptadienal, (E,E)-
	2-Octenal, (E)-
	Nonanal
	2,6-Nonadienal, (E,Z)-
	2-Nonenal
	Decanal
	Benzaldehyde, 3,4-dimethyl-
	2-Decenal, (E)-
	Tetradecanal
	Benzaldehyde
	Octanal
	Nonanal
	trans-1,4-Hexadiene
	1,3,5,7-Cyclooctatetraene
	1,4-Hexadiene, 4-methyl-
	2-Dodecenal, (E)-
	Benzaldehyde, 2,4-dimethyl-
	Benzaldehyde, 3,5-dimethyl-
	Benzaldehyde, 2-ethyl-
	Benzaldehyde, 4-ethyl-
	Tridecanal
	Undecanal
	2,4-Decadienal
	Dodecanal
	alpha-Pinene
	Styrene
	Limonene
Terpenes	3-Carene
	alpha-Farnesene
	ALPHA-Terpinene
	1,6-Octadien-3-ol, 3,7-dimethyl-

Hydrocarbons	alpha-Muurolene
	Nerolidol
	Citronellol
	(+)-2-Bornanone
	(+)-4-Carene
	1,6,10-Dodecatriene, 7,11-dimethyl-3-methylene-, (Z)-
	beta-cis-farnesene
	beta-ionone
	beta-cis-ocimene
	Toluene
	Benzene, 1,2,3-trimethyl-
	Tridecane
	Cyclododecane
	Ethylbenzene
	Benzene, 1,3-dimethyl-
	o-Xylene
	p-Xylene
	Cyclopentane, 1,3-dimethyl-
	Benzene, 1-ethyl-3-methyl-
	Benzene, 1,2,4,5-tetramethyl-
	Benzene, 1,2,3,4-tetramethyl-
	1,3-Cyclopentadiene, 1,2,3,4-tetramethyl-5-methylene-
	Cyclooctane
	2,6-Octadiene, 2,6-dimethyl-
	Biphenyl
	Hexadecane
	Hexacosane
	Tetratriacontane
	Tetracosane
Acids	Acetic acid
	Butanoic acid, 2-methyl-
	Butanoic acid, 4-hydroxy-
	Hexanoic acid
	Octanoic Acid
	Nonanoic acid
Furans	Furan, tetrahydro-
	Furan, 2-ethyl-
	2(5H)-Furanone, 5-ethyl-
	Furan, 2-pentyl-
	3(2H)-Furanone, 4-methoxy-2,5-dimethyl-

	2(3H)-Furanone, 5-hexyldihydro-
	2,5-Dimethyl-4-hydroxy-3(2H)-furanone
Phenols	3-Methyl-4-isopropylphenol
	Phenol, 2,4-bis(1,1-dimethylethyl)-
Benzenoids	benzyl alcohol
	benzyl acetate
Ethers	Benzene, 2-methoxy-4-methyl-1-(1-methylethyl)-

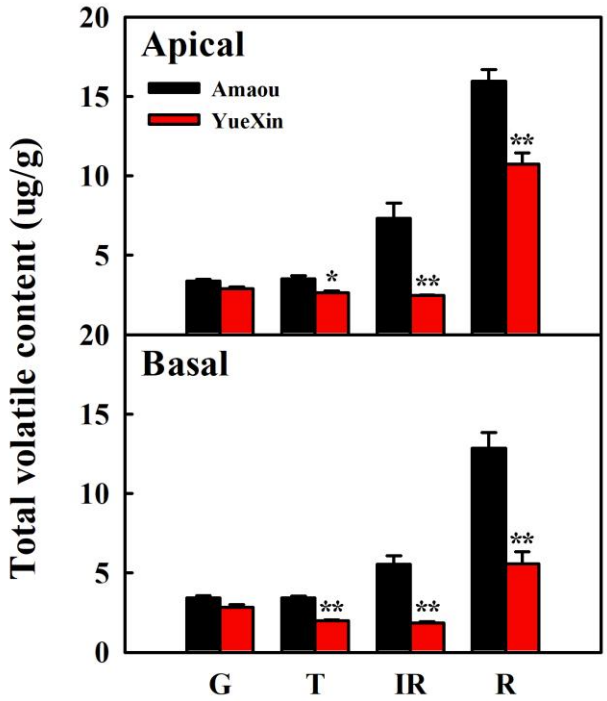

Figure S1. Volatiles of ‘Amaou’ and ‘Yuexin’ under soil cultivation conditions. G, T, IR and R represent green, turning, intermediate red and full red respectively. Asterisks indicate significant differences (* $P < 0.05$; ** $P < 0.01$).