

Table S1. Principal component analysis of the six developmental stages of *O. fragrans* ‘Wucaigui’.

Comparable group	Var ID	VIP
S1 versus S2	Lutein	1.49923
	Peonidin-3-O-(6-O-p-coumaroyl)-glucoside	1.49616
	Kaempferol-3-O-rutinoside	1.44706
	Pelargonidin-3-O-(6-O-p-coumaroyl)-glucoside	1.43395
	β -carotene	1.3974
	Pelargonidin-3,5-O-diglucoside	1.36328
	Pelargonidin-3-O-rutinoside	1.2415
	Cyanidin-3-O-glucoside	1.1593
	Cyanidin-3-O-rutinoside-5-O-glucoside	1.15415
	Cyanidin-3-O-rutinoside	1.15171
	Zeaxanthin	1.05468
	Rutin	1.0452
	Peonidin-3-O-rutinoside	0.955719
	(E/Z)-phytoene	0.787682
	Antheraxanthin	0.735274
	Neoxanthin	0.697056
	Quercetin-3-O-glucoside	0.687318
	α -cryptoxanthin	0.505862
	β -cryptoxanthin	0.500086
	Naringenin-7-O-glucoside	0.355336
	Chlorophyll a	0.340397
	α -carotene	0.144425
	Violaxanthin	0.0453084
	Chlorophyll b	0.0013707
	Pelargonidin-3-O-(6-O-p-coumaroyl)-glucoside	1.38234
	Pelargonidin-3,5-O-diglucoside	1.35901
	(E/Z)-phytoene	1.34244

S2 versus S3	Quercetin-3-O-glucoside	1.33094
	Peonidin-3-O-(6-O-p-coumaroyl)-glucoside	1.32165
	Cyanidin-3-O-glucoside	1.3213
	Cyanidin-3-O-rutinoside	1.31642
	Rutin	1.27964
	Violaxanthin	1.2198
	Pelargonidin-3-O-rutinoside	1.1651
	Cyanidin-3-O-rutinoside-5-O-glucoside	1.10875
	α -cryptoxanthin	0.959553
	Chlorophyll a	0.916769
	β -carotene	0.844567
	Lutein	0.824985
	Peonidin-3-O-rutinoside	0.81488
	Antheraxanthin	0.765519
	Naringenin-7-O-glucoside	0.717858
	Kaempferol-3-O-rutinoside	0.71387
	α -carotene	0.338488
	Chlorophyll b	0.276746
	Neoxanthin	0.251771
	Zeaxanthin	0.198402
	β -cryptoxanthin	0.0627933
	Neoxanthin	1.38131
	Lutein	1.34377
	Quercetin-3-O-glucoside	1.28541
	Kaempferol-3-O-rutinoside	1.28047
	Violaxanthin	1.2633
	Rutin	1.25784
	β -carotene	1.24668
	Cyanidin-3-O-rutinoside	1.24081

S3 versus S4	Naringenin-7-O-glucoside	1.19032
	Cyanidin-3-O-glucoside	1.14215
	Pelargonidin-3,5-O-diglucoside	1.13978
	Cyanidin-3-O-rutinoside-5-O-glucoside	1.09982
	Peonidin-3-O-(6-O-p-coumaroyl)-glucoside	1.08725
	Pelargonidin-3-O-rutinoside	1.04516
	α -carotene	0.970556
	Peonidin-3-O-rutinoside	0.89554
	Chlorophyll b	0.762674
	Chlorophyll a	0.568639
	Pelargonidin-3-O-(6-O-p-coumaroyl)-glucoside	0.549194
	Antheraxanthin	0.430106
	β -cryptoxanthin	0.217246
	(E/Z)-phytoene	0.174534
	Zeaxanthin	0.0502371
	α -cryptoxanthin	0.0460157
S4 versus S5	α -carotene	1.41456
	Peonidin-3-O-(6-O-p-coumaroyl)-glucoside	1.40816
	β -cryptoxanthin	1.39049
	Chlorophyll a	1.37302
	Zeaxanthin	1.32089
	Naringenin-7-O-glucoside	1.32011
	Neoxanthin	1.30758
	Pelargonidin-3-O-(6-O-p-coumaroyl)-glucoside	1.27047
	Chlorophyll b	1.21036
	Pelargonidin-3,5-O-diglucoside	1.19661
	Pelargonidin-3-O-rutinoside	1.02826
	Peonidin-3-O-rutinoside	0.954081
	Violaxanthin	0.941792

	Cyanidin-3-O-rutinoside	0.892103
	Kaempferol-3-O-rutinoside	0.782584
	Cyanidin-3-O-rutinoside	0.761305
	α -cryptoxanthin	0.744628
	β -carotene	0.703201
	Cyanidin-3-O-rutinoside-5-O-glucoside	0.62163
	Antheraxanthin	0.310042
	Rutin	0.23851
	Quercetin-3-O-glucoside	0.232351
	Lutein	0.0640116
	(E/Z)-phytoene	0.0187435
	α -carotene	1.20715
	β -carotene	1.20128
	Peonidin-3-O-(6-O-p-coumaroyl)-glucoside	1.19238
	Lutein	1.18641
	Violaxanthin	1.17813
	β -cryptoxanthin	1.15651
	Neoxanthin	1.14318
	Pelargonidin-3,5-O-diglucoside	1.13007
	Naringenin-7-O-glucoside	1.12684
	Peonidin-3-O-rutinoside	1.12414
S5 versus S6	α -cryptoxanthin	1.12077
	Zeaxanthin	1.1142
	Cyanidin-3-O-rutinoside-5-O-glucoside	1.10452
	Chlorophyll a	1.07936
	Pelargonidin-3-O-rutinoside	1.09008
	Chlorophyll b	1.05229
	Cyanidin-3-O-rutinoside	0.849674
	Cyanidin-3-O-glucoside	0.793319

Kaempferol-3-O-rutinoside	0.719707
(E/Z)-phytoene	0.678685
Antheraxanthin	0.629007
Rutin	0.547248
Quercetin-3-O-glucoside	0.415757
Peonidin-3-O-(6-O-p-coumaroyl)-glucoside	0.110865

S1 : greyish brown, S2 : moderate brown, S3 : dark greenish yellow, S4 : strong yellow green, S5 : yellow green, S6 : moderate olive green.