

**Table S1.** Identification, quantification and descriptors of volatile compounds found in saffron floral by-products.

Code	Compound	CF	RT	KI LIT	KI EXP	Odor Descriptors <sup>1</sup>
V1	Acetic acid	Acid	2.441	645	646	Pungent, sour, vinegar
V2	Butanal, 3-methyl- (Isovaleraldehyde)	Aldehyde	3.370	690	686	Chocolate, peach, fatty
V3	Butanal, 2-methyl-	Aldehyde	3.531	699	688	Cocoa, musty, coffee
V4	3-hydroxy-2-butanone (Acetoin)	Ketone	4.531	722	721	Buttery, dairy, fatty
V5	1-Butanol, 2-methyl-	Alcohol	5.617	748	748	Fusel, alcoholic
V6	Propanoic acid, 2-methyl-	Acid	6.163	760	757	Sour, cheesy, rancid
V7	2,3-Butanediol	Alcohol	7.405	789	786	Creamy, fruity, buttery
V8	Hexanal	Aldehyde	7.888	800	800	Green, fresh, fatty
V9	Butanoic acid, 3-methyl- (Isovaleric acid)	Acid	10.222	858	858	Cheesy, sour
V10	Butanoic acid, 2-methyl-	Acid	10.364	862	861	Cheesy, acidic
V11	1,2-Propanediol, 2-acetate	Ester	11.489	889	891	Fruity
V12	Heptanal	Aldehyde	11.941	894	893	Green, fresh, fatty
V13	4-Penten-1-yl acetate	Ester	11.962	895	890	Green, plastic, vegetable
V14	2(5H)-Furanone	Ester	12.104	906	913	Buttery
V15	Butyrolactone	Ester	12.127	906	908	Creamy, oily, fatty
V16	Acetic acid, pentyl ester	Ester	12.449	914	912	Fruity, banana, pear
V17	2-Furancarboxaldehyde, 5-methyl-	Aldehyde	14.186	960	961	Caramellic, sweet, coffee
V18	1-Butanol, 3-methyl-, propanoate	Acid	14.551	970	969	Fruity, tropical, banana
V19	Carbolic acid	Acid	14.816	977	976	Plastic
V20	Diisoamyl ether	Ether	15.746	1002	1002	Floral
V21	Acetic acid, hexyl ester	Ester	16.080	1012	1011	Fruity, green
V22	1-Hexanol, 2-ethyl-	Alcohol	16.653	1029	1029	Citrus, fresh, floral
V23	D-Limonene	Terpene	16.657	1029	1029	Citrus, fresh
V24	Benzeneacetaldehyde	Aldehyde	17.099	1042	1043	Green, sweet, floral
V25	Butanoic acid, pentyl ester	Ester	17.596	1056	1059	Fruity, banana, tropical
V26	Ethanone, 1-(1H-pyrrol-2-yl)-	Ketone	17.717	1060	1060	Musty, nut
V27	Benzaldehyde, 4-methyl-	Aldehyde	18.448	1081	1080	Fruity, cherry

V28	2-Nonanone	Ketone	18.734	1089	1089	Fresh, sweet, fruity
V29	Linalool	Terpene	19.031	1098	1098	Floral, citrus, rose
V30	Nonanal	Aldehyde	19.193	1103	1102	Waxy, aldehydic, citrus, fresh
V31	Phenylethyl Alcohol	Alcohol	19.404	1110	1110	Floral, rose
V32	4H-Pyran-4-one, 2,3-dihydro-3,5-dihydroxy-6-methyl- (DDMP)	Other	20.326	1139	1140	-
V33	Acetic acid, 2-ethylhexyl ester	Ester	20.559	1147	1157	Earthy, herbal
V34	2(3H)-Furanone, dihydro-4-hydroxy-	Ester	20.609	1148	1153	-
V35	Isophorone	Ketone	20.675	1150	1146	Woody, sweet, camphoreous, musty
V36	Cyclohexanone, 5-methyl-2-(1-methylethyl)-, trans- (trans-Menthone)	Cetone	20.859	1156	1152	Minty
V37	Acetic acid, phenylmethyl ester	Ester	21.000	1161	1161	Floral, jasmine
V38	Cyclohexanol, 5-methyl-2-(1-methylethyl)-, (1 $\alpha$ ,2 $\beta$ ,5 $\alpha$ )- (Menthol)	Cetone	21.529	1177	1171	Minty
V39	1,3-Cyclohexadiene-1-carboxaldehyde, 2,6,6-trimethyl- (Safranal)	Terpene	22.180	1198	1201	Fresh, herbal, saffron, spicy
V40	Benzofuran, 2,3-dihydro- (Coumaran)	Other	22.630	1213	1219	Sweet
V41	2-Dodecene, (Z)-	Alkene	22.375	1205	1213	-
V42	3-Dodecene, (Z)-	Alkene	22.634	1214	1222	-
V43	Benzaldehyde, 2,4-dimethyl-	Aldehyde	22.659	1214	1208	Naphthyl, sweet
V44	2-Cyclohexen-1-one, 2-methyl-5-(1-methylethyl)-, (S)-	Terpene	23.656	1249	1250	-
V45	Benzene, 1,3-bis(1,1-dimethylethyl)-	Other	23.668	1249	1249	-
V46	Acetic acid, 2-phenylethyl ester	Ester	23.773	1252	1254	Floral, honey, fruity, tropical
V47	Benzeneacetaldehyde, $\alpha$ -ethylidene-	Aldehyde	24.200	1267	1273	Green, floral, woody
V48	2-Propenal, 3-phenyl-	Aldehyde	24.337	1272	1278	Spicy, sweet
V49	Dodecane, 4,6-dimethyl-	Alkane	24.450	1276	1285	-
V50	2-Undecanone	Cetone	24.903	1291	1291	Fruity, waxy,fatty
V51	$\alpha$ -Cubebene	Terpene	27.334	1379	1380	Herbal, waxy
V52	Dodecanal	Aldehyde	28.113	1408	1409	Soapy, waxy
V53	1-Dodecanol	Alcohol	29.900	1475	1474	Waxy, earthy, soapy
V54	Lauryl acetate	Ester	32.679	1606	1605	Waxy, sweet
V55	Hexadecanoic acid, methyl ester	Ester	37.034	1921	1921	Waxy, oily, fatty

<sup>1</sup> Commercial flavor descriptors. or online according to: Flavornet (<http://www.flavornet.org/flavornet.html>); Bedoukian Research (<http://www.bedoukian.com/>); Sigma Aldrich SAFC. Flavors and Fragrances (<http://www.safcglobal.com/safc-supply-solutions/en-us/home/flavors-and-fragrances.html>) and The Good Scents Company (<http://www.thegoodscentscompany.com/>); FAO/WHO Expert Committee on Food Additives (JECFA)(<https://www.fao.org/food/food-safety-quality/scientific-advice/jecfa/en/>)  
CF: Chemical Family; RT: Retention Time; KI: Kovats Index; EXP: Experimental; LIT: Literature.