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Article

Chemical Variability of the Essential Oil of *Origanum ehrenbergii* Boiss. from Lebanon, Assessed by Independent Component Analysis (ICA) and Common Component and Specific Weight Analysis (CCSWA)

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Supplementary materials

Table S1. The geographical distribution of *O. ehrenbergii* in Lebanon [4].

Region	District	Governorate
Hrajel	Keserwan	Mount Lebanon
Faraya	Keserwan	Mount Lebanon
Mayrouba	Keserwan	Mount Lebanon
Ain Al Qabou	Matn	Mount Lebanon
Zaarour	Matn	Mount Lebanon
Sannine	Matn	Mount Lebanon
Beit Méri	Matn	Mount Lebanon
Broummana	Matn	Mount Lebanon
Choueir	Matn	Mount Lebanon
Dhour Choueir	Matn	Mount Lebanon
Bikfaya	Matn	Mount Lebanon
Beit Chebab	Matn	Mount Lebanon
Aabadiye	Baabda	Mount Lebanon
Salima	Baabda	Mount Lebanon
Falougha	Baabda	Mount Lebanon
Qartaba	Jbeil	Mount Lebanon
Aïn Zehalta	Chouf	Mount Lebanon
Jabal Barouk	Chouf	Mount Lebanon
Jabal Kneissé	Chouf	Mount Lebanon
Zahlé	Zahlé	Beqaa
Jeba'a	Nabatiyeh	Nabatiyeh

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Table S2. Chemical composition of the essential oils of *O. ehrenbergii* harvested from Qartaba.

				Date of harvest	Apr-13			May-13				Jun-13				Jul-13			
				Drying method	L1	L2	D2	L1	L2	D1	D2	L1	L2	D1	D2	L1	L2	D1	D2
				Yield (%)	2.76	2.6	0.9	2.8	2.9	2	1.9	3.37	3.8	3.05	2.93	3.66	4.01	2.99	3
Ri[a]	Ri[b]	Ri[c]	Ri[d]	Chemical compounds															
924	931	1035	1035	**α- thujene**	0.2	0.3	0.3	0.3	0.4	0.3	0.6	0.6	0.8	0.4	0.7	0.8	1.0	0.8	0.8
933	939	1076	1076	**α-pinene**	0.1	0.2	0.2	0.2	0.3	0.2	0.4	0.4	0.4	0.2	0.4	0.4	0.5	0.5	0.4
944	957			**thuja-2,4-(10)-diene**															
947	953	1076	1076	**camphene**				t	t			t	t			t	t	t	t
973	976	1132	1132	**sabinene**												t			
975	978	1312	1312	**1-octen-3-ol**		0.1	0.1	t	t			0.1	0.1	t		0.1	0.1	0.1	0.1
980	980	1118	1118	**β-pinene**		t	t	t	0.1	t	t	t	0.1	t	t	0.1	0.1	t	t
986	989	1251	1251	**3-octanone**	0.4	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.3	0.1	0.3	0.1	0.2	0.1	0.1
991	991	1174	1174	**myrcene**	0.2	0.2	0.2	0.3	0.4	0.2	0.4	0.5	0.7	0.3	0.5	0.6	0.7	0.5	0.4
996				**3-octanol**	0.3	0.5	0.5	0.3	0.4	0.4	0.4	0.4	0.2	0.4	0.3	0.9	0.4	1.0	0.5
1003	1005	1188	1188	**α-phellandrene**		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1
1009	1011	1157	1159	**δ-3-carene**					t			t	t			0.1	t	0.1	t
1014	1018	1188	1189	**α-terpinene**	0.2	0.2	0.2	0.3	0.1	0.2	0.3	0.5	0.3	0.2	0.4	0.5	0.4	0.6	0.4
1024	1026	1280	1278	***p*-cymene**	1.8	1.7	2.9	1.6	2.3	2.8	1.9	1.6	2.1	3.4	3.3	2.4	3.1	4.4	4.7
1027	1031	1218	1218	**β-phellandrene**					0.3		0.3	0.3	0.3		0.4	0.3	0.3	0.4	0.3
1027	1032	1213	1213	**1,8-cineole**	0.1														
1043	1040	1269	1269	**(Z)-β-ocimene**								t	t			t	t		
1057	1062	1255	1256	**γ-terpinene**	1.4	1.3	0.6	2.2	1.3	0.8	1.3	2.9	1.6	1.1	0.8	3.4	1.9	1.9	0.7
1063	1097	1556	1556	***cis*-sabinene hydrate**	0.2		t	t		t		t	t	0.1		t	0.1	t	0.2
1086	1088	1265	1265	**α-terpinolene**												t	t	t	t
1089		1450	1452	***p*-cymenene**															
1098	1098	1553	1553	**linalool**													t		t
1160	1165	1719	1719	**borneol**															
1174	1177	1611	1611	**terpinen-4-ol**		t		t		t						t	t	t	t
1201	1189	1706	1706	**α-terpineol**															
1217	1200	1611	1602	***trans*-dihydrocarvone**															t
1238	1235	1607	1609	**thymol methyl oxide**	2.6	2.2	2.6	3.6	2.0	4.6	2.3	2.5	3.0	2.7	3.6	3.9	2.6	4.1	2.5
1249	1249	1701		**thymoquinone**														t	t
1294	1290	2198	2198	**thymol**													t		t
1300	1298	2239	2239	**carvacrol**	87.0	89.7	86.6	86.4	89.5	83.5	86.7	86.1	86.3	86.4	85.0	82.6	85.5	81.9	85.3
1350	1351	1466	1466	**α-cubebene**															
1378	1376	1497	1497	**α-copaene**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	t
1386	1384	1535	1535	**β-bourbonene**												t	t		t

1416	1418	1612	1612	**β-caryophyllene**	0.3	0.4	0.4	0.6	0.1	0.5	0.5	0.6	0.5	0.2	0.6	0.6	0.8	0.6	0.9
1436		1573	1573	***trans*-α-bergamotene**	0.1	t	0.1	0.1	t	0.1	t	0.1	t	t	0.1	t	t	t	t
1438	1439	1628	1628	**aromadendrene**															
1454	1454	1668	1670	**α-humulene**	0.1	0.1	0.1	0.1	t	0.1	0.1	0.1	0.1	t	0.1	0.1	0.1	0.1	0.1
1457	1458	1689	1689	***trans*-β-farnesene**								t				t			t
1478	1477	1704	1704	**γ-muurolene**		t	t	t		t	t	t	t	t		t	t	t	t
1480	1480	1726	1726	**germacrene D**		t		t				t	t			t	t	t	t
1492		1708	1707	**ledene**		t	t	t			t		t	t	t			t	t
1497		1756	1756	**bicyclogermacrene**								0.1				t	t		
1500		1740	1740	**α-muurolene**						t									
1507	1509	1741	1743	**β-bisabolene**	4.2	2.2	3.1	2.8	1.5	3.9	2.5	2.4	2.2	2.1	2.5	2.1	1.0	1.9	0.8
1513	1513	1776	1776	**γ-cadinene**							t	t						t	t
1526	1524	1773	1773	**δ-cadinene**	0.3	0.2	0.2	0.2	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
1540		1784	1784	***trans*-α-bisabolene**	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	t	0.1	0.1	t	t	t
1558		1984	1984	**γ-calacorene**															t
1577	1576	2152	2150	**spathulenol**	0.1		t	0.1	0.1	0.1	t		0.1	0.1	0.1		0.1		0.1
1581	1581	2008	2008	**caryophyllene oxide**	0.2	0.1	0.2	0.1	0.3	0.3	0.1	t	0.1	0.3	0.1	0.1	0.1	0.1	0.2
1608	1606	2202	2071	**humulene-1,2-epoxide**													t		t
1640		2316	2316	**β-caryophylladienol**															t
1686	1683	2229	2229	**α-bisabolol**			t	t		t				t					t
2115	1949	2603	2622	**phytol**															
				Monoterpene hydrocarbons	3.9	3.9	4.3	4.9	5.2	4.6	5.3	6.8	6.4	5.7	6.5	8.7	8.1	9.3	7.8
				Oxygenated monoterpenes	89.9	91.9	89.3	90.0	91.6	88.0	89.1	88.6	89.3	89.2	88.7	86.6	88.2	86.0	88.1
				Sesquiterpene hydrocarbons	5.1	2.9	4.1	3.9	1.8	5.0	3.4	3.6	3.1	2.7	3.7	3.1	2.2	2.8	1.9
				Oxygenated sesquiterpenes	0.2	0.1	0.2	0.2	0.3	0.4	0.1	0.0	0.2	0.4	0.1	0.1	0.2	0.1	0.3
				Others	0.7	0.8	0.8	0.5	0.5	0.5	0.6	0.5	0.6	0.4	0.6	1.1	0.7	1.1	0.7
				Total identified	**102.6**	**99.6**	**98.7**	**99.5**	**99.4**	**98.6**	**98.4**	**102.9**	**99.6**	**98.4**	**99.6**	**99.6**	**99.3**	**102.4**	**98.8**

				Date of harvest	**Aug-13**				**Sep-13**				**Oct-13**		**Nov-13**		**Dec-13**	
				Drying method	**L1**	**L2**	**D1**	**D2**	**L1**	**L2**	**D1**	**D2**	**L1**	**D1**	**L1**	**D1**	**L1**	**D1**
				Yield (%)	2.64	2.13	2.41	1.7	2.01	1.9	1.4	1.7	1.50	1.5	1.3	1.2	0.8	1.14
Ri[a]	**Ri[b]**	**Ri[c]**	**Ri[d]**	**Chemical compounds**														
924	931	1035	1035	**α- thujene**	0.8	0.9	0.8	0.9	0.5	0.5	0.5	0.3	0.4	0.2	0.4	0.3	0.5	0.1
933	939	1076	1076	**α-pinene**	0.5	0.6	0.5	0.5	0.4	0.4	0.4	0.2	0.4	0.2	0.4	0.3	0.4	0.1
944	957			**thuja-2,4-(10)-diene**	t	t	t	t	t	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	t
947	953	1076	1076	**camphene**	t	0.1	t	0.1	0.1	0.1	0.1	0.1	0.1	t	0.1		0.1	
973	976	1132	1132	**sabinene**													0.1	
975	978	1312	1312	**1-octen-3-ol**	0.1	t	0.1	t	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1

980	980	1118	1118	**β-pinene**	0.1	0.1	0.1	0.1	t	t	0.1	t	t	t	t				
986	989	1251	1251	**3-octanone**	0.1	0.3	0.1	0.4	0.4	0.5	0.4	0.3	0.7	0.6	0.7	0.7	1.2	1.1
991	991	1174	1174	**myrcene**	0.4	0.3	0.3										0.3	
996				**3-octanol**	0.5	0.2	0.5	0.2	0.4	0.5	0.5	0.8	1.0	0.9	0.5	0.5	1.6	1.2
1003	1005	1188	1188	**α-phellandrene**	0.1	0.1	0.1		t									
1009	1011	1157	1159	**δ-3-carene**	t	t	t	t	t	t	t		t		t			
1014	1018	1188	1189	**α-terpinene**	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1
1024	1026	1280	1278	***p*-cymene**	4.1	4.9	4.8	5.1	5.5	7.3	5.3	6.1	5.7	4.9	7.2	9.2	9.7	6.7
1027	1031	1218	1218	**β-phellandrene**	0.3		0.3						0.3					
1027	1032	1213	1213	**1,8-cineole**													0.2	
1043	1040	1269	1269	**(*Z*)-β-ocimene**														
1057	1062	1255	1256	**γ-terpinene**	0.5	0.1	0.2										0.5	
1063	1097	1556	1556	***cis*-sabinene hydrate**	0.1	t	0.1	0.1	0.1	0.3	0.2	0.2	0.2	0.5	0.2	0.3	0.2	0.6
1086	1088	1265	1265	**α-terpinolene**	t		t		t									
1089		1450	1452	***p*-cymenene**						t		t	t		0.1		0.1	
1098	1098	1553	1553	**linalool**					t		t	t	t	t	0.1			0.1
1160	1165	1719	1719	**borneol**						t		t			t		t	
1174	1177	1611	1611	**terpinen-4-ol**	t	0.1	t	0.1	0.1	0.2	0.1	0.2	0.1	0.4	0.2	0.4	0.4	0.4
1201	1189	1706	1706	**α-terpineol**														
1217	1200	1611	1602	***trans*-dihydrocarvone**			0.1	0.1	0.1				0.1					
1238	1235	1607	1609	**thymol methyl oxide**	3.0	4.7	3.0	4.8	4.8	3.5	5.1	3.5	3.5	3.5	4.7	5.0	4.5	3.6
1249	1249	1701		**thymoquinone**	0.1		0.2	0.4	0.7	0.9	1.6	2.3	0.6	2.9	0.7	1.2	0.3	1.3
1294	1290	2198	2198	**thymol**			t		t	t			t		t			
1300	1298	2239	2239	**carvacrol**	86.1	84.1	84.9	79.1	81.9	81.0	81.0	79.4	82.4	78.8	78.9	76.8	76.3	75.8
1350	1351	1466	1466	**α-cubebene**														
1378	1376	1497	1497	**α-copaene**	t	t	t	t	t		t	t	t	t	t		t	
1386	1384	1535	1535	**β-bourbonene**														
1416	1418	1612	1612	**β-caryophyllene**	0.6	0.5	0.7	0.5	0.4	0.2	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.3
1436		1573	1573	***trans*-α-bergamotene**	t	t	t	t	t	0.1	t	0.1	t	t	0.1	0.1	t	t
1438	1439	1628	1628	**aromadendrene**														
1454	1454	1668	1670	**α-humulene**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1457	1458	1689	1689	***trans*-β-farnesene**														
1478	1477	1704	1704	**γ-muurolene**			t											
1480	1480	1726	1726	**germacrene D**														
1492		1708	1707	**ledene**			t											
1497		1756	1756	**bicyclogermacrene**														
1500		1740	1740	**α-muurolene**														
1507	1509	1741	1743	**β-bisabolene**	0.9	0.9	0.9	0.9	0.9	0.8	1.0	0.8	0.6	0.9	0.9	1.0	1.0	1.3
1513	1513	1776	1776	**γ-cadinene**											t		t	
1526	1524	1773	1773	**δ-cadinene**	0.1	t	0.1	t	t	t	t	t	t	t	t	0.1	t	0.1
1540		1784	1784	***trans*-α-bisabolene**	t	t	t		t	t					t		t	

1558		1984	1984	**γ-calacorene**	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.1	0.2	0.2	0.1	0.1	0.1
1577	1576	2152	2150	**spathulenol**	t	t	t	t	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1		t
1581	1581	2008	2008	**caryophyllene oxide**	0.3	0.4	0.3	0.4	0.6	0.7	0.7	1.0	0.7	0.9	0.7	1.1	0.6	1.0
1608	1606	2202	2071	**humulene-1,2-epoxide**	0.1		0.1	0.1	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.2
1640		2316	2316	**β-caryophylladienol**												0.1		
1686	1683	2229	2229	**α-bisabolol**											t			
2115	1949	2603	2622	**phytol**														
				Monoterpene hydrocarbons	6.9	7.1	7.3	6.7	6.6	8.6	6.5	6.8	7.0	5.5	8.2	10.0	11.9	7.1
				Oxygenated monoterpenes	89.1	88.9	88.1	84.2	87.0	85.0	86.4	83.3	86.4	83.2	84.1	82.5	81.6	80.5
				Sesquiterpene hydrocarbons	1.7	1.6	1.8	1.5	1.4	1.4	1.5	1.6	0.9	1.3	1.4	1.6	1.4	1.8
				Oxygenated sesquiterpenes	0.4	0.4	0.4	0.5	0.7	0.8	0.8	1.2	0.9	0.9	0.9	1.4	0.7	1.2
				Others	0.8	0.5	0.9	1.1	1.5	2.0	2.6	3.5	2.4	4.6	2.0	2.6	3.2	3.7
				Total identified	**98.9**	**98.4**	**98.5**	**95.7**	**97.3**	**97.7**	**97.9**	**98.1**	**97.7**	**95.6**	**96.7**	**98.1**	**99.6**	**94.3**

				Date of harvest	**Jan-14**	**Feb-14**	**Mar-14**	**Apr-14**		**May-14**		**Jun-14**	
				Drying method	**L1**	**L1**	**L1**	**L1**	**D1**	**L1**	**D1**	**L1**	**D1**
				Yield (%)	0.86	1.16	1.14	2.26	0.87	2.39	1.81	2.5	1.9
Ri[a]	**Ri[b]**	**Ri[c]**	**Ri[d]**	**Chemical compounds**									
924	931	1035	1035	**α- thujene**	0.2		0.3	0.4	0.8	0.5	0.8	0.9	1.4
933	939	1076	1076	**α-pinene**	0.2	0.2	0.2	0.2	0.6	0.3	0.5	0.5	0.8
944	957			**thuja-2,4-(10)-diene**	t								
947	953	1076	1076	**camphene**			t	t				t	
973	976	1132	1132	**sabinene**						t		0.1	
975	978	1312	1312	**1-octen-3-ol**	0.3	0.3	0.1	0.1	0.1	t	0.1	t	0.1
980	980	1118	1118	**β-pinene**			t	t	0.1		0.1		0.1
986	989	1251	1251	**3-octanone**	1.0	0.3	0.3	0.2	0.3	0.3	0.7	0.2	0.6
991	991	1174	1174	**myrcene**			0.3	0.4	0.9	0.5	0.9	0.6	1.1
996				**3-octanol**	1.5	1.9	0.9	0.3	0.7	0.2	0.4	0.4	0.7
1003	1005	1188	1188	**α-phellandrene**			0.1	0.1	0.4	0.1	0.9	0.1	0.8
1009	1011	1157	1159	**δ-3-carene**				t			0.2		
1014	1018	1188	1189	**α-terpinene**	0.1	0.1	0.3	0.3	0.6	0.4	0.6	0.4	0.6
1024	1026	1280	1278	**p-cymene**	4.8	3.3	3.5	1.7	3.7	1.3	4.3	2.2	4.5
1027	1031	1218	1218	**β-phellandrene**				0.2	0.5	0.2			
1027	1032	1213	1213	**1,8-cineole**	0.2	1.2							
1043	1040	1269	1269	**(Z)-β-ocimene**				t				t	
1057	1062	1255	1256	**γ-terpinene**		0.3	2.3	1.8	2.7	2.6	2.5	2.1	2.2
1063	1097	1556	1556	***cis*-sabinene hydrate**	0.2	0.3	0.1	t		0.1		t	
1086	1088	1265	1265	**α-terpinolene**				t				t	

1089		1450	1452	***p*-cymenene**			0.1							
1098	1098	1553	1553	**linalool**							0.1			
1160	1165	1719	1719	**borneol**			t				0.3		0.2	
1174	1177	1611	1611	**terpinen-4-ol**	0.1		t	t			0.1	t		
1201	1189	1706	1706	***α*-terpineol**										
1217	1200	1611	1602	***trans*-dihydrocarvone**										
1238	1235	1607	1609	**thymol methyl oxide**	3.9	3.9	2.6	1.9	3.0	3.2	4.3	3.0	4.7	
1249	1249	1701		**thymoquinone**	1.1	0.6								
1294	1290	2198	2198	**thymol**							t			
1300	1298	2239	2239	**carvacrol**	76.5	58.5	82.8	87.6	77.9	85.0	74.8	85.3	74.5	
1350	1351	1466	1466	***α*-cubebene**					0.1		0.3	t	0.2	
1378	1376	1497	1497	***α*-copaene**		0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.2	
1386	1384	1535	1535	***β*-bourbonene**				t						
1416	1418	1612	1612	***β*-caryophyllene**	0.2	0.7	0.7	0.5	0.9	0.9	0.9	0.9	1.3	
1436		1573	1573	***trans*-*α*-bergamotene**	t	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
1438	1439	1628	1628	**aromadendrene**										
1454	1454	1668	1670	***α*-humulene**	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.2	
1457	1458	1689	1689	***trans*-*β*-Farnesene**		0.1		t	0.1	t		t	0.1	
1478	1477	1704	1704	***γ*-muurolene**			t	t	0.1	t	t	t	t	
1480	1480	1726	1726	**germacrene D**		0.1	t	t	t	t	t	t	t	
1492		1708	1707	**ledene**			0.1	t	0.1	0.1	0.1			
1497		1756	1756	**bicyclogermacrene**								0.1	0.1	
1500		1740	1740	***α*-muurolene**			t							
1507	1509	1741	1743	***β*-bisabolene**	2.5	5.0	3.5	2.7	4.3	2.8	3.4	2.0	2.8	
1513	1513	1776	1776	***γ*-cadinene**	0.1		0.1			0.1	0.5			
1526	1524	1773	1773	***δ*-cadinene**	0.1	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.3	
1540		1784	1784	***trans*-*α*-bisabolene**		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
1558		1984	1984	***γ*-calacorene**	0.2	0.1								
1577	1576	2152	2150	**spathulenol**	t	0.2	0.1	0.1	0.1	t	0.1	t	0.1	
1581	1581	2008	2008	**caryophyllene oxide**	0.9	1.4	0.2	0.1		t	0.1	0.1	0.1	
1608	1606	2202	2071	**humulene-1,2-epoxide**	0.1	0.4	t							
1640		2316	2316	***β*-caryophylladienol**		0.1		t						
1686	1683	2229	2229	***α*-bisabolol**			t	t						
2115	1949	2603	2622	**phytol**		0.4		0.0						
				Monoterpene hydrocarbons	5.2	3.9	7.1	5.1	10.1	5.9	10.8	6.9	11.5	
				Oxygenated monoterpenes	81.0	63.9	85.5	89.5	81.0	88.3	79.6	88.4	79.4	
				Sesquiterpene hydrocarbons	3.1	6.9	4.9	3.7	6.4	4.5	5.9	3.6	5.3	
				Oxygenated sesquiterpenes	1.0	2.2	0.3	0.2	0.1	0.0	0.2	0.1	0.3	
				Others	3.9	3.5	1.2	0.6	1.1	0.5	1.2	0.7	1.4	
				Total identified	**94.2**	**80.4**	**99.0**	**99.1**	**98.7**	**99.2**	**97.7**	**99.6**	**97.8**	

				Date of harvest	Jul-14		Aug-14		Sep-14		Oct-14		Nov-14	Dec-14	
				Drying method	L1	D1	L1	D1	L1	D1	L1	D1	L1	L1	D1
				Yield (%)	4.04	3.47	3.46	3.5	3.02	1.8	1.87	1.42	0.77	0.8	0.75
Ri[a]	Ri[b]	Ri[c]	Ri[d]	Chemical compounds											
924	931	1035	1035	***α*- thujene**	1.0	0.9	0.7	0.9	0.7	0.7	0.4	0.2	0.2	0.7	0.3
933	939	1076	1076	***α*-pinene**	0.5	0.5	0.4	0.6	0.5	0.5	0.3	0.1	0.5	0.6	0.3
944	957			**thuja-2,4-(10)-diene**			t	t	t	t		t	0.1	t	
947	953	1076	1076	**camphene**	t	t	t	0.1	0.1	0.1	0.1		0.2	0.1	
973	976	1132	1132	**sabinene**	t	t	t	t						t	
975	978	1312	1312	**1-octen-3-ol**	t		0.1	0.1	0.3	0.3	0.2	0.1	0.2	0.2	0.2
980	980	1118	1118	***β*-pinene**	0.1	t	0.1	0.1	0.1	0.1	0.1			0.1	
986	989	1251	1251	**3-octanone**	0.1	0.2	0.1	0.1	0.3	0.4	1.0	0.9	1.5	0.9	1.2
991	991	1174	1174	**myrcene**	0.6	0.5	0.3	0.2	0.2					0.8	0.4
996				**3-octanol**	0.2	0.2	0.7	0.8	0.9	0.9	1.5	1.5	1.8	1.9	2.1
1003	1005	1188	1188	***α*-phellandrene**	0.1	0.1	0.1	0.1	0.1	0.1	0.9	0.6		0.4	1.5
1009	1011	1157	1159	***δ*-3-carene**	t		t	t	t	t					
1014	1018	1188	1189	***α*-terpinene**	0.3	0.2	0.2	0.3	0.3	0.2	0.3	0.2	0.3	0.8	0.6
1024	1026	1280	1278	***p*-cymene**	2.3	3.0	5.2	7.5	8.7	10.6	8.8	6.8	16.6	12.6	14.6
1027	1031	1218	1218	***β*-phellandrene**	0.3	0.3	0.4	0.4		0.4					
1027	1032	1213	1213	**1,8-cineole**											
1043	1040	1269	1269	***(Z)*-*β*-ocimene**	t									t	
1057	1062	1255	1256	***γ*-terpinene**	1.1	0.6	0.4	0.1	0.4				0.3	4.8	1.4
1063	1097	1556	1556	***cis*-sabinene hydrate**	t	0.1	0.1	0.2	t	0.3	0.3	0.5	0.4	0.2	0.4
1086	1088	1265	1265	***α*-terpinolene**	t		0.1	0.1	0.1						
1089		1450	1452	***p*-cymenene**						0.1	0.1		0.2	0.2	
1098	1098	1553	1553	**linalool**			t	t	t	t				0.1	
1160	1165	1719	1719	**borneol**						t	0.3	0.2		0.1	0.5
1174	1177	1611	1611	**terpinen-4-ol**	t		0.1	0.1	0.2	0.2	0.5	0.3	0.4	0.4	
1201	1189	1706	1706	***α*-terpineol**				t							
1217	1200	1611	1602	***trans*-dihydrocarvone**											
1238	1235	1607	1609	**thymol methyl oxide**	3.2	3.5	3.2	3.4	1.7	2.0	4.9	5.2	9.3	7.2	9.1
1249	1249	1701		**thymoquinone**			0.2	0.8	0.4	1.8		0.1			
1294	1290	2198	2198	**thymol**	t		t	t		t	t			t	
1300	1298	2239	2239	**carvacrol**	87.1	85.7	84.1	79.5	81.5	77.1	73.9	75.8	57.6	59.4	55.3
1350	1351	1466	1466	***α*-cubebene**							0.3	0.1	0.1	0.1	0.5
1378	1376	1497	1497	***α*-copaene**	0.1	0.1	t	t	t	t	t		0.1	0.1	0.1
1386	1384	1535	1535	***β*-bourbonene**	t									t	
1416	1418	1612	1612	***β*-caryophyllene**	0.9	1.1	0.7	0.8	0.4	0.3	0.4	0.5	0.2	0.4	0.5

1436		1573	1573	***trans*-α-bergamotene**		t		t	t	t	t	t	0.1	0.1	0.1
1438	1439	1628	1628	**aromadendrene**											
1454	1454	1668	1670	**α-humulene**	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1457	1458	1689	1689	***trans*-β-Farnesene**											
1478	1477	1704	1704	**γ-muurolene**	t			t						t	0.1
1480	1480	1726	1726	**germacrene D**	t									0.1	
1492		1708	1707	**ledene**		t									
1497		1756	1756	**bicyclogermacrene**	t		t								
1500		1740	1740	**α-muurolene**											
1507	1509	1741	1743	**β-bisabolene**	1.1	1.6	0.6	0.7	0.6	0.5	1.7	1.6	1.3	2.7	3.1
1513	1513	1776	1776	**γ-cadinene**		t		t	t	t					
1526	1524	1773	1773	**δ-cadinene**	0.1	0.1	t	0.1	t	t	t	0.1	0.1	0.2	0.2
1540		1784	1784	***trans*-α-bisabolene**	t	t	t	t	t	t			0.1	0.1	0.1
1558		1984	1984	**γ-calacorene**			0.1	0.2	0.1	0.1			0.1	t	
1577	1576	2152	2150	**spathulenol**	t	t	t	0.0	t	t	t	t	0.1		
1581	1581	2008	2008	**caryophyllene oxide**	0.1	0.2	0.5	0.6	0.6	0.6	0.8	0.9	2.7	1.2	1.7
1608	1606	2202	2071	**humulene-1,2-epoxide**			0.1	0.1	0.1	0.1	0.2	0.2	0.5		0.1
1640		2316	2316	**β-caryophylladienol**						t		0.1			0.1
1686	1683	2229	2229	**α-bisabolol**				t							
2115	1949	2603	2622	**phytol**											
				Monoterpene hydrocarbons	6.2	6.0	7.9	10.2	11.1	12.7	11.0	7.9	18.3	21.1	19.1
				Oxygenated monoterpenes	90.4	89.2	87.5	83.2	83.4	79.6	79.9	81.9	67.7	67.3	65.3
				Sesquiterpene hydrocarbons	2.3	3.1	1.5	1.8	1.2	1.1	2.4	2.3	2.0	3.8	4.7
				Oxygenated sesquiterpenes	0.1	0.2	0.6	0.7	0.7	0.7	0.9	1.1	3.3	1.2	1.9
				Others	0.3	0.4	1.2	1.9	1.9	3.4	2.7	2.7	3.5	3.0	3.4
				Total identified	**99.4**	**98.8**	**98.6**	**97.9**	**98.3**	**97.6**	**96.9**	**95.8**	**94.8**	**96.5**	**94.5**

Notes: Drying method (L: lyophilization; D: shade-drying at 4 °C)
Harvest number (1: harvest at the beginning of the month; 2: harvest in the middle of the month)
Retention index (Ri^a: Retention index calculated on a HP-5MS column; Ri^b: Retention index on a HP-5MS column from literature [42]; Ri^c: Retention index calculated on a HP Innowax column; Ri^d: Retention index on a HP Innowax column from literature [60,61]
t: trace (less than 0.05.%)
Blanks: not detected

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Table S3. Chemical composition of the essential oils of *O. ehrenbergii* harvested from Aabadiye.

				Date of harvest	March	Apr-13		May-13				Jun-13			
				Drying method	L1	L1	L2	L1	L2	D1	D2	L1	L2	D1	D2
				Yield (%)	2.7	2.86	2.84	3.24	3.66	2.19	2.19	4.45	4.5	2.78	3.9
Ri[a]	Ri[b]	Ri[c]	Ri[d]	Chemical compounds											
924	931	1035	1035	**α- thujene**	0.1	0.4	0.2	0.5	0.4	0.3	0.3	0.7	0.7	0.8	0.8
933	939	1076	1076	**α-pinene**	0.1	0.3	0.1	0.3	0.2	0.2	0.2	0.4	0.4	0.4	0.4
944	957			**thuja-2,4-(10)-diene**											
947	953	1076	1076	**camphene**		t		t	t			t	t	t	
973	976	1132	1132	**sabinene**		t		t				t	0.1		
975	978	1312	1312	**1-octen-3-ol**	t	t		t	t	t	t	0.1	t	t	t
980	980	1118	1118	**β-pinene**	0.1	0.1	t	0.1	t	t	t	0.1	t		
986	989	1251	1251	**3-octanone**	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2
991	991	1174	1174	**myrcene**	0.1	0.6	0.3	0.7	0.5	t	0.1	0.8	0.6	0.6	0.6
996				**3-octanol**	0.3	0.2	0.1	0.3	0.1	0.3	0.1	0.2	0.1	0.1	0.1
1003	1005	1188	1188	**α-phellandrene**		0.1	t	0.2	0.1		t	0.2	0.1	0.1	0.1
1009	1011	1157	1159	**δ-3-carene**		t		t				t	t	t	t
1014	1018	1188	1189	**α-terpinene**	0.1	0.3	0.3	1.0	0.8	0.3	0.3	0.9	0.6	0.7	0.6
1024	1026	1280	1278	***p*-cymene**	2.4	3.6	2.5	3.2	3.7	8.3	7.8	1.9	1.6	3.2	3.2
1027	1031	1218	1218	**β-phellandrene**				0.5	0.3			0.4	0.2	0.3	0.4
1027	1032	1213	1213	**1,8-cineole**	0.2										
1043	1040	1269	1269	**(*Z*)-β-ocimene**		t		t				t	t		
1057	1062	1255	1256	**γ-terpinene**	0.3	3.7	2.6	6.3	5.4		0.3	5.8	3.7	3.3	2.6
1063	1097	1556	1556	***cis*-sabinene hydrate**	0.1	t		t				0.2	t	t	0.1
1086	1088	1265	1265	**α-terpinolene**		t		t				t	t	t	
1089		1450	1452	***p*-cymenene**											
1098	1098	1553	1553	**linalool**											
1160	1165	1719	1719	**borneol**	t										
1174	1177	1611	1611	**terpinen-4-ol**	0.1	t		0.1				t			
1201	1189	1706	1706	**α-terpineol**				t							
1217	1200	1611	1602	***trans*-dihydrocarvone**	t			t							
1238	1235	1607	1609	**thymol methyl oxide**	3.2	2.8	2.5	4.0	3.2	3.5	3.7	1.9	1.1	1.6	1.3
1249	1249	1701		**thymoquinone**	0.3			t	0.1	1.3	0.7				
1294	1290	2198	2198	**thymol**	t	0.3						0.1			
1300	1298	2239	2239	**carvacrol**	83.6	82.8	88.0	77.7	81.9	76.1	77.9	82.5	88.6	85.2	86.8
1350	1351	1466	1466	**α-cubebene**				t				t			
1378	1376	1497	1497	**α-copaene**		0.2	0.1	0.1	0.1	0.1	0.1	0.1	t	0.1	0.1
1386	1384	1535	1535	**β-bourbonene**				t							

1416	1418	1612	1612	***β*-caryophyllene**	0.6	0.3	0.5	0.8	0.7	0.3	0.5	1.0	0.6	0.9	0.7
1436		1573	1573	***trans*-*α*-bergamotene**	0.1	t	t	0.1	t	0.1	0.1				t
1438	1439	1628	1628	**aromadendrene**											
1454	1454	1668	1670	***α*-humulene**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1
1457	1458	1689	1689	***trans*-*β*-Farnesene**			t	t	t			t	t	t	
1478	1477	1704	1704	***γ*-muurolene**		t	t	t	t	t	t	t	t	t	
1480	1480	1726	1726	**germacrene D**				t	t			0.1	t	t	
1492		1708	1707	**ledene**	t	t	t	0.1	0.1		t			t	t
1497		1756	1756	**bicyclogermacrene**								0.1	0.1	t	
1500		1740	1740	***α*-muurolene**		t		t		t					
1507	1509	1741	1743	***β*-bisabolene**	3.8	1.9	1.9	2.2	1.4	2.5	2.5	1.1	0.7	0.9	0.8
1513	1513	1776	1776	***γ*-cadinene**		t	t	0.1	t	t	t	t	t	t	
1526	1524	1773	1773	***δ*-cadinene**	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1
1540		1784	1784	***trans*-*α*-bisabolene**	0.1	t	t	0.1	t	t	t	t	t	t	t
1558		1984	1984	***γ*-calacorene**	t					0.3	0.2				
1577	1576	2152	2150	**spathulenol**	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2
1581	1581	2008	2008	**caryophyllene oxide**	0.9	0.5	0.1	0.1	0.1	0.7	0.6	0.1	0.1	0.1	0.2
1608	1606	2202	2071	**humulene-1,2-epoxide**	0.1	0.1				0.1	0.1				
1640		2316	2316	***β*-caryophylladienol**		t		t				t		t	
1686	1683	2229	2229	***α*-bisabolol**	0.1			t		t	t				
2115	1949	2603	2622	**phytol**											
				Monoterpene hydrocarbons	3.2	9.0	5.9	12.8	11.5	9.1	9.0	11.0	8.0	9.5	8.8
				Oxygenated monoterpenes	87.2	85.9	90.5	81.7	85.0	79.6	81.6	84.7	89.6	86.9	88.2
				Sesquiterpene hydrocarbons	4.8	2.6	2.6	3.8	2.5	3.5	3.7	2.7	1.5	2.2	1.8
				Oxygenated sesquiterpenes	1.2	0.7	0.2	0.2	0.2	0.9	1.0	0.4	0.2	0.3	0.4
				Others	1.0	0.6	0.4	0.6	0.4	1.8	1.1	0.6	0.3	0.3	0.3
				Total identified	**97.5**	**98.8**	**99.6**	**99.0**	**99.6**	**94.9**	**96.3**	**99.3**	**99.6**	**99.2**	**99.5**

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				Date of harvest	Jul-13				Aug-13				Sep-13			Oct-13	Nov-13
				Drying method	L1	L2	D1	D2	L1	L2	D1	D2	L1	L2	D1	L1	L1
				Yield (%)	4.52	4.53	3.45	3.56	3.69	3.69	3.01	3.1	3.19	3.10	2.99	2.99	2.26
Ri[a]	Ri[b]	Ri[c]	Ri[d]	Chemical compounds													
924	931	1035	1035	**α- thujene**	1.0	0.7	1.1	0.4	0.8	0.8	0.9	0.8	1.0	0.9	0.7	0.6	0.6
933	939	1076	1076	**α-pinene**	0.6	0.4	0.7	0.2	0.5	0.4	0.5	0.4	0.6	0.5	0.4	0.5	0.6
944	957			**thuja-2,4-(10)-diene**													0.1
947	953	1076	1076	**camphene**	0.1		0.1		t	t	t	t	0.1	t	t	0.1	0.1
973	976	1132	1132	**sabinene**	t		t		t				t				
975	978	1312	1312	**1-octen-3-ol**	0.1	t	0.1	t	0.1	0.1	0.1	t	0.1	0.1	0.1	0.1	0.1
980	980	1118	1118	**β-pinene**	0.1		0.1	t	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
986	989	1251	1251	**3-octanone**	0.2	0.3	0.2	0.5	0.3	0.2	0.3	0.3	0.5	0.3	0.5	0.7	1.0
991	991	1174	1174	**myrcene**	1.0	0.4	0.9		0.8	0.6	0.8	0.6	0.8	0.6	0.5		
996				**3-octanol**	0.4	0.1	0.5	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.6
1003	1005	1188	1188	**α-phellandrene**	0.2	0.1	0.2		0.1	0.1	0.1	0.1	0.2	0.1	0.1		
1009	1011	1157	1159	**δ-3-carene**	0.1	t	0.1	t	t	t	0.1	t	0.1	t	t		
1014	1018	1188	1189	**α-terpinene**	1.3	0.3	1.2	0.1	0.5	0.5	0.4	0.4	0.6	0.5	0.4	0.2	0.2
1024	1026	1280	1278	***p*-cymene**	3.8	2.9	5.8	3.4	2.5	2.1	3.2	3.3	3.8	3.3	4.8	9.9	15.3
1027	1031	1218	1218	**β-phellandrene**	0.6	0.3	0.6		0.4	0.3	0.4	0.3	0.5	0.3		0.5	0.6
1027	1032	1213	1213	**1,8-cineole**													
1043	1040	1269	1269	**(Z)-β-ocimene**	0.1		t		t	t			t				
1057	1062	1255	1256	**γ-terpinene**	7.1	0.8	6.0		2.1	2.8	1.6	1.7	2.6	2.3	0.8		
1063	1097	1556	1556	***cis*-sabinene hydrate**	0.1		0.2	0.1	0.1	t	0.1	0.1	0.1	t	0.2	0.1	0.1
1086	1088	1265	1265	**α-terpinolene**	t		t		t	t		t	t		t		
1089		1450	1452	***p*-cymenene**													0.1
1098	1098	1553	1553	**linalool**	t		0.1										
1160	1165	1719	1719	**borneol**													
1174	1177	1611	1611	**terpinen-4-ol**	t		t		t	t		t	t		0.1	0.1	0.6
1201	1189	1706	1706	**α-terpineol**	0.1		0.1						t				
1217	1200	1611	1602	***trans*-dihydrocarvone**	t								0.1				
1238	1235	1607	1609	**thymol methyl oxide**	1.9	4.5	2.0	5.2	2.0	1.3	2.3	1.7	2.5	1.5	2.4	3.3	4.3
1249	1249	1701		**thymoquinone**		t	0.1	0.4				0.2	0.2	0.1	0.5	3.3	3.2
1294	1290	2198	2198	**thymol**					t				t		t		
1300	1298	2239	2239	**carvacrol**	78.1	86.6	76.8	83.0	87.1	88.6	85.9	87.9	83.5	87.4	84.3	73.5	67.8
1350	1351	1466	1466	**α-cubebene**	t					t			t				
1378	1376	1497	1497	**α-copaene**	t	t		t	t	t	t	t	0.1	t	t	0.1	0.1
1386	1384	1535	1535	**β-bourbonene**													
1416	1418	1612	1612	**β-caryophyllene**	1.4	0.7	1.1	0.5	0.7	0.5	0.6	0.4	0.6	0.5	0.5	0.4	0.5
1436		1573	1573	***trans*-α-bergamotene**		t	t	t									

1438	1439	1628	1628	**aromadendrene**	t					t	0.1	t	0.1	t	0.1	0.1	0.1
1454	1454	1668	1670	***α*-humulene**	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
1457	1458	1689	1689	***trans*-*β*-Farnesene**	t		t			t	t				t		
1478	1477	1704	1704	***γ*-muurolene**						t			t		t	t	
1480	1480	1726	1726	**germacrene D**	t					t			t	t			
1492		1708	1707	**ledene**			t	t	t		t	t			t	t	0.1
1497		1756	1756	**bicyclogermacrene**	0.1					0.1			0.1	0.1			
1500		1740	1740	***α*-muurolene**													
1507	1509	1741	1743	***β*-bisabolene**	0.9	0.7	0.8	0.9	0.5	0.5	0.5	0.4	0.6	0.5	0.6	0.7	0.8
1513	1513	1776	1776	***γ*-cadinene**				t	t	t		t	t		t		
1526	1524	1773	1773	***δ*-cadinene**	t	0.1	t	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1540		1784	1784	***trans*-*α*-bisabolene**	t		t		t	t	t	t	t		t		
1558		1984	1984	***γ*-calacorene**				t							0.1	0.6	0.2
1577	1576	2152	2150	**spathulenol**	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2
1581	1581	2008	2008	**caryophyllene oxide**	0.1	0.3	0.3	0.7	0.1	0.1	0.3	0.1	0.1		0.2	0.6	1.1
1608	1606	2202	2071	**humulene-1,2-epoxide**		t	t				t		t		t		0.2
1640		2316	2316	***β*-caryophylladienol**							t	t	t		t		0.1
1686	1683	2229	2229	***α*-bisabolol**													
2115	1949	2603	2622	**phytol**													
				Monoterpene hydrocarbons	15.7	5.8	16.8	4.2	7.8	7.7	8.0	7.7	10.2	8.6	7.8	11.9	17.6
				Oxygenated monoterpenes	80.1	91.2	79.2	88.2	89.2	89.9	88.3	89.6	86.2	88.9	86.9	77.0	72.7
				Sesquiterpene hydrocarbons	2.7	1.6	2.1	1.7	1.4	1.3	1.4	0.9	1.6	1.2	1.5	2.2	2.0
				Oxygenated sesquiterpenes	0.2	0.3	0.3	0.8	0.3	0.1	0.5	0.3	0.3	0.1	0.3	0.8	1.6
				Others	0.6	0.4	0.9	0.9	0.6	0.5	0.6	0.7	1.0	0.7	1.4	4.4	4.8
				Total identified	**99.4**	**99.3**	**99.3**	**95.8**	**99.3**	**99.5**	**98.8**	**99.2**	**99.3**	**99.5**	**98.0**	**96.2**	**98.6**

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				Date of harvest	Jan-14		Feb-14	Mar-14	Apr-14		May-14		Jun-14	
				Drying method	L1	D1	L1	L1	L1	D1	L1	D1	L1	D1
				Yield (%)	1.06	0.79	1.18	1.11	2.44	1.52	3.74	1.81	3.97	3.09
Ri[a]	Ri[b]	Ri[c]	Ri[d]	Chemical compounds										
924	931	1035	1035	**α- thujene**			0.1		0.3	0.3	0.7	0.6	0.7	0.8
933	939	1076	1076	**α-pinene**	0.1		0.2		0.3	0.2	0.4	0.4	0.4	0.4
944	957			**thuja-2,4-(10)-diene**										
947	953	1076	1076	**camphene**								t		t
973	976	1132	1132	**sabinene**								t	t	t
975	978	1312	1312	**1-octen-3-ol**							0.1	t	0.1	t
980	980	1118	1118	**β-pinene**	0.3	0.2	0.3		0.2		0.1	0.1	0.1	0.1
986	989	1251	1251	**3-octanone**	1.8	1.3	1.9	0.7	0.9	0.4	0.4	0.3	0.5	0.4
991	991	1174	1174	**myrcene**					0.5	0.2	0.8	0.5	0.9	0.7
996				**3-octanol**	1.4	0.9	1.4	0.4	0.5	0.3	0.2	0.2	0.3	0.2
1003	1005	1188	1188	**α-phellandrene**					0.1		0.2	0.1	0.2	0.1
1009	1011	1157	1159	**δ-3-carene**								t	t	t
1014	1018	1188	1189	**α-terpinene**					0.5	0.3	0.8	0.5	1.0	0.8
1024	1026	1280	1278	***p*-cymene**	10.2	9.1	12.9	2.7	3.2	3.5	1.9	4.5	2.1	2.7
1027	1031	1218	1218	**β-phellandrene**							0.3	0.3	0.4	0.4
1027	1032	1213	1213	**1,8-cineole**										
1043	1040	1269	1269	**(Z)-β-ocimene**									t	t
1057	1062	1255	1256	**γ-terpinene**					4.0	1.1	5.5	2.2	6.4	4.7
1063	1097	1556	1556	***cis*-sabinene hydrate**	0.7	0.7	0.6			0.1	t	0.1	0.1	0.1
1086	1088	1265	1265	**α-terpinolene**								t	t	t
1089		1450	1452	***p*-cymenene**			0.1							
1098	1098	1553	1553	**linalool**	0.4		0.3							
1160	1165	1719	1719	**borneol**	0.2		0.2							
1174	1177	1611	1611	**terpinen-4-ol**	0.8	0.5	0.9		0.1					
1201	1189	1706	1706	**α-terpineol**										
1217	1200	1611	1602	***trans*-dihydrocarvone**	0.2		0.3							
1238	1235	1607	1609	**thymol methyl oxide**	6.9	7.1	6.5	2.2	4.6	3.2	3.2	2.4	3.7	3.2
1249	1249	1701		**thymoquinone**	10.6	12.8	11.6							
1294	1290	2198	2198	**thymol**										
1300	1298	2239	2239	**carvacrol**	48.5	50.6	48.1	73.7	71.8	82.5	81.5	83.1	79.6	82.1
1350	1351	1466	1466	**α-cubebene**			0.1		t		0.1	t	0.1	0.1
1378	1376	1497	1497	**α-copaene**	0.1		0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1
1386	1384	1535	1535	**β-bourbonene**								t		t

1416	1418	1612	1612	**β-caryophyllene**	0.2	0.2	0.3	0.9	1.0	0.8	0.7	0.6	1.0	0.9
1436		1573	1573	***trans*-α-bergamotene**					0.1	0.1				
1438	1439	1628	1628	**aromadendrene**	0.1		0.1	0.2			0.1		0.1	0.1
1454	1454	1668	1670	**α-humulene**	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2
1457	1458	1689	1689	***trans*-β-Farnesene**							t	t		
1478	1477	1704	1704	**γ-muurolene**							t	t	t	t
1480	1480	1726	1726	**germacrene D**					0.1		0.1	t	0.1	0.1
1492		1708	1707	**ledene**								0.1		
1497		1756	1756	**bicyclogermacrene**					0.1		0.3		0.3	0.2
1500		1740	1740	**α-muurolene**								t		t
1507	1509	1741	1743	**β-bisabolene**	0.9	1.2	1.2	4.3	2.6	3.3	1.5	1.6	0.8	0.7
1513	1513	1776	1776	**γ-cadinene**					t		0.1	0.0	t	0.0
1526	1524	1773	1773	**δ-cadinene**	0.1		0.1	0.3	0.2	0.3	0.3	0.3	0.2	0.2
1540		1784	1784	***trans*-α-bisabolene**				0.1	0.1	0.1	t	t	t	t
1558		1984	1984	**γ-calacorene**	0.6	2.5	0.7	0.2		0.1				
1577	1576	2152	2150	**spathulenol**	0.5	0.4	0.4	0.4	0.2	0.3	0.1	0.4	0.2	0.2
1581	1581	2008	2008	**caryophyllene oxide**	2.5	2.7	2.9	2.1	0.4	0.6	t	0.1	0.1	0.1
1608	1606	2202	2071	**humulene-1,2-epoxide**	0.3	0.3	0.4	0.3	0.1	0.1				
1640		2316	2316	**β-caryophylladienol**	0.1		0.1	0.1		0.1			t	t
1686	1683	2229	2229	**α-bisabolol**								t		
2115	1949	2603	2622	**phytol**										
				Monoterpene hydrocarbons	10.6	9.3	13.7	2.7	8.9	5.5	10.7	9.1	12.0	10.6
				Oxygenated monoterpenes	57.8	58.8	57.0	75.9	76.4	85.9	84.7	85.5	83.4	85.4
				Sesquiterpene hydrocarbons	2.2	4.1	2.8	6.4	4.7	4.9	3.5	2.8	3.0	2.6
				Oxygenated sesquiterpenes	3.5	3.4	3.8	3.0	0.6	1.0	0.1	0.5	0.2	0.2
				Others	13.8	15.0	14.8	1.1	1.4	0.7	0.7	0.5	0.8	0.6
				Total identified	**87.9**	**90.7**	**92.2**	**89.2**	**92.0**	**97.9**	**99.7**	**98.4**	**99.5**	**99.5**

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				Date of harvest	Jul-14		Aug-14		Sep-14		Oct-14		Nov-14	Dec-14	
				Drying method	L1	D1	L1	D1	L1	D1	L1	D1	L1	L1	D1
				Yield (%)	3.35	2.83	3.44	2.70	3.43	3.03	2.93	2.66	2.18	1.7	0.63
Ri[a]	Ri[b]	Ri[c]	Ri[d]	Chemical compounds											
924	931	1035	1035	**α- thujene**	0.7	0.9	0.8	1.0	0.9	0.7	1.0	1.0	0.6	0.8	0.2
933	939	1076	1076	**α-pinene**	0.4	0.5	0.5	0.6	0.6	0.4	0.9	0.9	0.7	0.9	0.2
944	957			**thuja-2,4-(10)-diene**							0.1	0.1	0.1	0.1	0.1
947	953	1076	1076	**camphene**	t						0.1	0.1	0.1	0.1	0.1
973	976	1132	1132	**sabinene**	t		t					0.1	0.1		
975	978	1312	1312	**1-octen-3-ol**	0.1	0.1	0.1	0.1	0.1	0.1	0.1			0.2	0.1
980	980	1118	1118	**β-pinene**	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.3	0.3	0.3
986	989	1251	1251	**3-octanone**	0.5	0.5	0.6	0.6	0.8	0.6	1.5	1.5	1.5	1.8	1.6
991	991	1174	1174	**myrcene**	0.7	0.8	0.8	0.8	0.7	0.2					
996				**3-octanol**	0.4	0.5	0.5	0.6	0.5	0.5	0.9	1.0	1.0	0.9	0.9
1003	1005	1188	1188	**α-phellandrene**	0.2	0.2	0.2	0.2	0.2	0.1	0.4	0.4	0.4	0.3	0.2
1009	1011	1157	1159	**δ-3-carene**	t		0.1	0.1			0.1	0.1			
1014	1018	1188	1189	**α-terpinene**	0.6	0.7	0.6	0.6	0.4	0.4	0.3	0.3	0.3	0.5	0.2
1024	1026	1280	1278	***p*-cymene**	2.2	3.8	3.5	4.7	6.4	6.4	16.8	15.0	17.2	20.9	14.2
1027	1031	1218	1218	**β-phellandrene**	0.4	0.5	0.4	0.5	0.4	0.4					
1027	1032	1213	1213	**1,8-cineole**											
1043	1040	1269	1269	**(*Z*)-β-ocimene**	t										
1057	1062	1255	1256	**γ-terpinene**	3.0	2.6	2.8	2.1	1.0						
1063	1097	1556	1556	***cis*-sabinene hydrate**	0.2	0.1	t	0.1		0.1	0.1	0.1	0.4	0.4	0.8
1086	1088	1265	1265	**α-terpinolene**	t			t							0.1
1089		1450	1452	***p*-cymenene**							0.1	t		0.1	
1098	1098	1553	1553	**linalool**											0.1
1160	1165	1719	1719	**borneol**							t	0.2	0.2		0.2
1174	1177	1611	1611	**terpinen-4-ol**	t						0.3	0.2	0.4	0.4	0.8
1201	1189	1706	1706	**α-terpineol**											
1217	1200	1611	1602	***trans*-dihydrocarvone**											0.1
1238	1235	1607	1609	**thymol methyl oxide**	2.6	3.3	2.8	3.1	4.0	4.1	4.2	4.4	5.9	5.7	6.8
1249	1249	1701		**thymoquinone**						1.0	0.9	0.7	1.7	0.8	2.3
1294	1290	2198	2198	**thymol**	t						t				0.1
1300	1298	2239	2239	**carvacrol**	84.0	81.7	82.6	80.0	80.3	78.7	65.7	65.9	61.8	57.9	54.8
1350	1351	1466	1466	**α-cubebene**	0.1	0.1	0.1	t			0.1	0.1	0.1	0.1	t
1378	1376	1497	1497	**α-copaene**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	t	0.1	0.1	0.1
1386	1384	1535	1535	**β-bourbonene**	t										
1416	1418	1612	1612	**β-caryophyllene**	1.7	1.5	1.5	1.9	1.0	1.1	0.7	0.7	0.4	0.4	0.5
1436		1573	1573	***trans*-α-bergamotene**											

1438	1439	1628	1628	**aromadendrene**	t	0.1	t	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1454	1454	1668	1670	***α*-humulene**	0.3	0.3	0.3	0.4	0.2	0.2	0.3	0.2	0.2	0.2	0.3
1457	1458	1689	1689	***trans*-*β*-Farnesene**							t	t			
1478	1477	1704	1704	***γ*-muurolene**	t	t	t	t		t				t	t
1480	1480	1726	1726	**germacrene D**	0.1	0.1	0.1	t	t					t	t
1492		1708	1707	**ledene**	0.2				0.1	0.1	0.1	t		0.1	0.3
1497		1756	1756	**bicyclogermacrene**		0.2	0.2	0.2							
1500		1740	1740	***α*-muurolene**											
1507	1509	1741	1743	***β*-bisabolene**	0.8	0.8	0.6	0.5	0.9	1.0	1.6	1.6	1.3	1.4	1.8
1513	1513	1776	1776	***γ*-cadinene**	t	t	t	t		t	0.1	0.2	0.2	0.1	0.2
1526	1524	1773	1773	***δ*-cadinene**	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.2
1540		1784	1784	***trans*-*α*-bisabolene**	t	t	t		t	t					
1558		1984	1984	***γ*-calacorene**					0.1	0.2		t	0.4	0.4	1.0
1577	1576	2152	2150	**spathulenol**	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.3	0.2	0.2
1581	1581	2008	2008	**caryophyllene oxide**	0.1	0.1	0.2	0.3	0.3	0.3	0.8	0.9	1.2	1.3	1.8
1608	1606	2202	2071	**humulene-1,2-epoxide**				t	t	t		0.2			0.3
1640		2316	2316	***β*-caryophylladienol**	t			t		t		0.1		0.1	0.2
1686	1683	2229	2229	***α*-bisabolol**											0.1
2115	1949	2603	2622	**phytol**											
				Monoterpene hydrocarbons	8.3	10.1	9.9	10.7	10.7	8.7	19.9	18.2	19.7	24.1	15.5
				Oxygenated monoterpenes	86.7	85.1	85.4	83.2	84.3	82.8	70.3	70.8	68.7	64.4	63.6
				Sesquiterpene hydrocarbons	3.3	3.2	2.9	3.4	2.6	2.9	3.1	3.1	2.9	3.1	4.5
				Oxygenated sesquiterpenes	0.2	0.3	0.3	0.4	0.4	0.4	1.0	1.4	1.5	1.6	2.6
				Others	1.0	1.1	1.2	1.3	1.4	2.1	3.4	3.2	4.2	3.6	4.8
				Total identified	**99.5**	**99.7**	**99.6**	**98.9**	**99.3**	**97.0**	**97.7**	**96.7**	**96.9**	**96.8**	**91.0**

Notes: Drying method (L: lyophilization; D: shade-drying at 4 °C)
Harvest number (1: harvest at the beginning of the month; 2: harvest in the middle of the month)
Retention index (Ri^a: Retention index calculated on a HP-5MS column; Ri^b: Retention index on a HP-5MS column from literature [42]; Ri^c: Retention index calculated on a HP Innowax column; Ri^d: Retention index on a HP Innowax column from literature [60,61]
t: trace (less than 0.05.%)
Blanks: not detected

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