

Supporting Information

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Chemical Composition of a New Taxon, *Seseli gummiferum* subsp. *ilgazense*, and its Larvicidal Activity against *Aedes aegypti*

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Table S1. Main components of *Seseli* EOs based on the literature

Species	Plant Part Used	Main Components %	References
<i>S. andronakii</i> Woron.	Fruits	carotol 52.7, germacrene D 8.7	1
<i>S. annuum</i> L.	Aerial parts	germacrene D 29.8, sabinene 10.3, (<i>Z</i>)- β -ocimene 9.8, limonene 8.6	2
<i>S. annuum</i> L.	Rosette	caryophyllene oxide 18.1, germacrene D 15.0, (<i>E</i>)-caryophyllene 10.3	3
	Aerial parts	β -selinene 18.3, germacrene A 14.6, β -elemene 11.4, α -selinene 9.4	
	Inflorescence	β -selinene 19.0, germacrene A 13.2, α -selinene 10.3, β -elemene 9.8	
	Stem	β -elemene 9.6, germacrene A 8.8, germacrene D 6.9	
	Leaf	germacrene D 19.1, β -elemene 8.5, germacrene A 8.4	
	Fruit	β -selinene 21.4 α -selinene 12.4, <i>ar</i> -curcumene 9.1, β -elemene 7.6, (<i>E</i>)-caryophyllene 7.4	
<i>S. bocconi</i> Guss. subsp. <i>praecox</i> Gamisans	Leaves	α -pinene 2.3-16.7, sabinene 0.5-20.1, β -phellandrene 10.4-37.9, α -humulene 1-20.1, germacrene D 1.2-7.9, bicyclogermacrene 0-8.3	4
<i>S. campestre</i> Besser.	Fruits	α -pinene 26.2, (<i>E</i>)-sesquilandulol 11.8, myrcene 8.5, germacrene D 6.1	5
	Aerial parts	α -pinene 35.8, myrcene 6.2, sabinene 5.9, limonene 5.8	
<i>S. corymbosum</i> subsp. <i>corymbosum</i> Pall. ex Sm.	Fruits	β -phellandrene 29.2, α -phellandrene 8.2, germacrene D 2.5	6
<i>S. gummiferum</i> Pall. Ex Sm. subsp. <i>corymbosum</i> (Boiss. & Heldr.) P.H.Davis	Fruits	germacrene D 54.1, sabinene 22.4	
<i>S. gummiferum</i> Pall. Ex Sm. subsp. <i>corymbosum</i> (Boiss. & Heldr.) P.H.Davis	Aerial parts	bicyclogermacrene 11.9, germacrene B 14.0	5
<i>S. gummiferum</i> Pall. Ex Sm. subsp. <i>gummiferum</i>	Aerial parts	spathulenol 19.9	
<i>S. montanum</i> subsp. <i>peixotoanum</i> (Samp.) M. Lainz	Seeds	α -pinene 36.0-37.1, β -pinene 22.5-23.6, limonene 7.7-8.8, myrcene 6.5-7.0, β -elemene 5.2-5.8	7
<i>S. pallasii</i> Besser.	Roots	nonane 45.2- 63.6, (<i>Z</i>)- β -ocimene 22.3- 34.5, undecane 6.5-13.3	8
	Stems	α -pinene 27.3- 71.0, limonene 9.5- 10.6	
	Fruits	α -pinene 84.7- 93.7, limonene 0.8- 2.7	
<i>S. petraeum</i> M. Bieb.	Fruits	carotol 20.7, γ -terpinene 11.3, sabinene 9.5, germacrene D 7.8	1
<i>S. rigidum</i> Waldst. & Kit.	Roots	Falcarinol 35-94.5, α -muurolene 0-8.1, 3-butylphthalide 0-7.5, methyl linoleate 0-7.4, muurola-4,10(14)dien-1 β -ol 0-6.6, β -sesquiphellandrene 0-6.3, salvial-4(14)-en-1-one 0-5.9, γ -amorphene 0-5.6, spathulenol 0-5.7, isospathuleneol 0-5.6	9
<i>S. rigidum</i> Waldst. & Kit.	Aerial parts	α -pinene 2.5-65.6, sabinene 0.7-61.9, limonene 0-43.4, β -phellandrene 0-20.4, caryophyllene oxide 0-11.6, bornyl acetate 0-11.2	10
	Fruits	Sabinene 0-69.1, α -pinene 0.8-55.7, β -phellandrene 0-37.5, falcarinol 0-35.6, germacrene B 0-33.3, carotol 0-21.9, germacrene D 0.6-19.9, β -sesquiphellandrene 0-19.7, (<i>E</i>)-caryophyllene 0-18.3, limonene 0-16	
	Roots	Falcarinol 29.4-95.3, α -pinene 0-15.4, γ -amorphene 0-12.6, sabinene 0-11.4, 3-butyl phthalide 0-11.3, β -	

		sesquiphellandrene 0-10.5	
<i>S. rigidum</i> Waldst.	Flowers	α -pinene 33.0, sabinene 7.9, limonene 7.1	11
	Leaves and flowering tops	α -pinene 26.3, sabinene 7.8, limonene 5.4	
	Fruits	α -pinene 33.2, sabinene 18.5, limonene 8.7	
	Roots	α -pinene 3.3, (<i>Z</i>)-falcarinol 14.3	
<i>S. tortuosum</i> L.	Seeds	α -pinene 24.8-24.9, β -pinene 23.5-23.9, (<i>Z</i>)- β -ocimene 13.3-16.0, myrcene 4.9-5.3	8
<i>S. resinosum</i> Freyn	Not mentioned	β -pinene 37.5, 4 α -hydroxygermacra-1(10)-5-diene 21.7, α -pinene 13.7	12
<i>S. tortuosum</i> L.	Not mentioned	(<i>E</i>)-sesquilandulol 37.0, sabinene 19.7, α -pinene 13.5, β -phellandrene 7.8	
<i>S. tortuosum</i> L.	Aerial parts	α -pinene 35.9, sabinene 8.8, <i>trans</i> -sesquilandulol 8.4, β -pinene 7.0	13
<i>S. tortuosum</i> L.	Leaves and flowering tops	myrcene 29.2, α -pinene 18.6, β -pinene 13.2, limonene 10.6, acorenone 6.3	14
<i>S. tortuosum</i> L.	Not mentioned	α -pinene 21.2, β -phellandrene 14.9, β -pinene 14.2, sabinene 13.4	15

References

- [1] A. Tosun, M. Kurkcuoglu, E. Dogan, H. Duman and K. H. C. Baser (2006). Essential oil composition of *Seseli petraeum* M. Bieb. and *Seseli andronakii* Woron. growing in Turkey, *Flavour Frag. J.* **21**, 257-259.
- [2] S. Milosavljevic, V. Tesevoc, I. Vuckovic, M. Jadrantin, V. Vajis, M. Sokovic, P. Janakovic and A. Javanovic (2007). Composition and antifungal activity of the essential oil of *Seseli annuum* wild-growing in Serbia, *Fitoterapia* **78**, 319-322.
- [3] N. N. Kovacevic, M. D. Marcetic, D. V. Lakusic and B. S. Lakusic (2016). Composition of the essential oils of different parts of *Seseli annuum* L. (Apiaceae), *J. Essent. Oil Bear Pl.* **19**, 671-677.
- [4] B. Marongiu, A. Piras, S. Porcedda, E. Tuveri and A. Maxia (2006). Isolation of *Seseli bocconi* Guss., subsp. *praecox* Gamisans (Apiaceae) volatile oil by supercritical carbon dioxide extraction, *Nat. Prod. Res.* **20**, 820-826.
- [5] K. H. C. Baser, T. Ozek, M. Kurkcuoglu and Z. Aytac (2000). Essential oil of *Seseli campestre* Besser. *J. Essent. Oil Res.* **12**, 105-107.
- [6] A. Tosun, J. Chun, I. Jerkovic, Z. Marijanovic, M. A. Fenu, S. S. Aslan, C. I. G. Tuberoso and Y. S. Kim (2016). Chemical profiles and anti-inflammatory activity of the essential oils from *Seseli gummiferum* and *Seseli corymbosum* subsp. *corymbosum*, *Nat. Prod. Commun.* **11**, 1523-1526.
- [7] A. Tosun, T. Kodama, H. Nakanishi, M. Baba and T. Okuyama (2005). The composition of essential oils from *Seseli* species growing in Turkey, *Nat. Medicines* **59**, 85-90.
- [8] M. J. Goncalves, A. N. Tavares, C. Cavaleiro, M. T. Cruz, M. C. Lopes, J. Canhoto and L. Salgueiro (2012). Composition, antifungal activity and cytotoxicity of the essential oils of *Seseli tortuosum* L. and *Seseli montanum* subsp. *peixotoanum* (Samp.) M. Lainz from Portugal, *Ind. Crops Prod.* **39**, 204-209.

- [9] M. D. Marčetić, B. S. Lakušić, D. V. Lakušić and N. N. Kovačević (2013). Variability of the root essential oils of *Seseli rigidum* Waldst. & Kit. (Apiaceae) from different populations in Serbia. *Chem. Biodivers.* **10**, 1653-1666.
- [10] M. Marcetic, N. Kovacevic, D. Lakusic and B. Lakusic (2017). Habitat related variation in composition of the essential oil of *Seseli rigidum* Waldst. & Kit. (Apiaceae), *Phytochem.* **135**, 80-92.
- [11] V. P. Stankov-Jovanovic, M. D. Ilic, V. D. Mitic, T. M. Mihajilov-Krstev, S. R. Simonovic, S. D. N. Mandic, J. C. Tabet and R. B. Cole (2015). Secondary metabolites of *Seseli rigidum*: chemical composition plus antioxidant, antimicrobial and cholinesterase inhibition activity, *J. Pharm. Biomed. Anal.* **111**, 78-90.
- [12] E. Dogan, H. Duman, A. Tosun, M. Kurkcuoglu and K. H. C. Baser (2006). Essential oil composition of the fruits of *Seseli resinosum* Freyn et Sint. and *Seseli tortuosum* L. growing in Turkey, *J. Essent. Oil Res.* **18**, 57-59.
- [13] A. Kaya, B. Demirci and K. H. C. Baser (2003). The essential oil of *Seseli tortuosum* L. growing in Turkey, *Flavour Frag. J.* **18**, 159-161.
- [14] A. Bader, C. Caponi, P. L. Cioni, G. Flamini and I. Morelli (2003). Acorenone in the essential oil flowering aerial parts of *Seseli tortuosum* L., *Flavour Frag. J.* **18**, 57-58.
- [15] Z. Habibi, S. Masoudi and A. Rustaiyan (2003). Chemical composition of the essential oil of *Seseli tortuosum* L. ssp. *kiabii* Akhani from Iran, *J. Essent. Oil Res.* **15**, 412-413.