

EVALUATION OF THE CHEMICAL COMPOSITION AND THE HISTOCHEMICAL
LOCALIZATION OF *SALVIA NEMOROSA* L. ESSENTIAL OILS

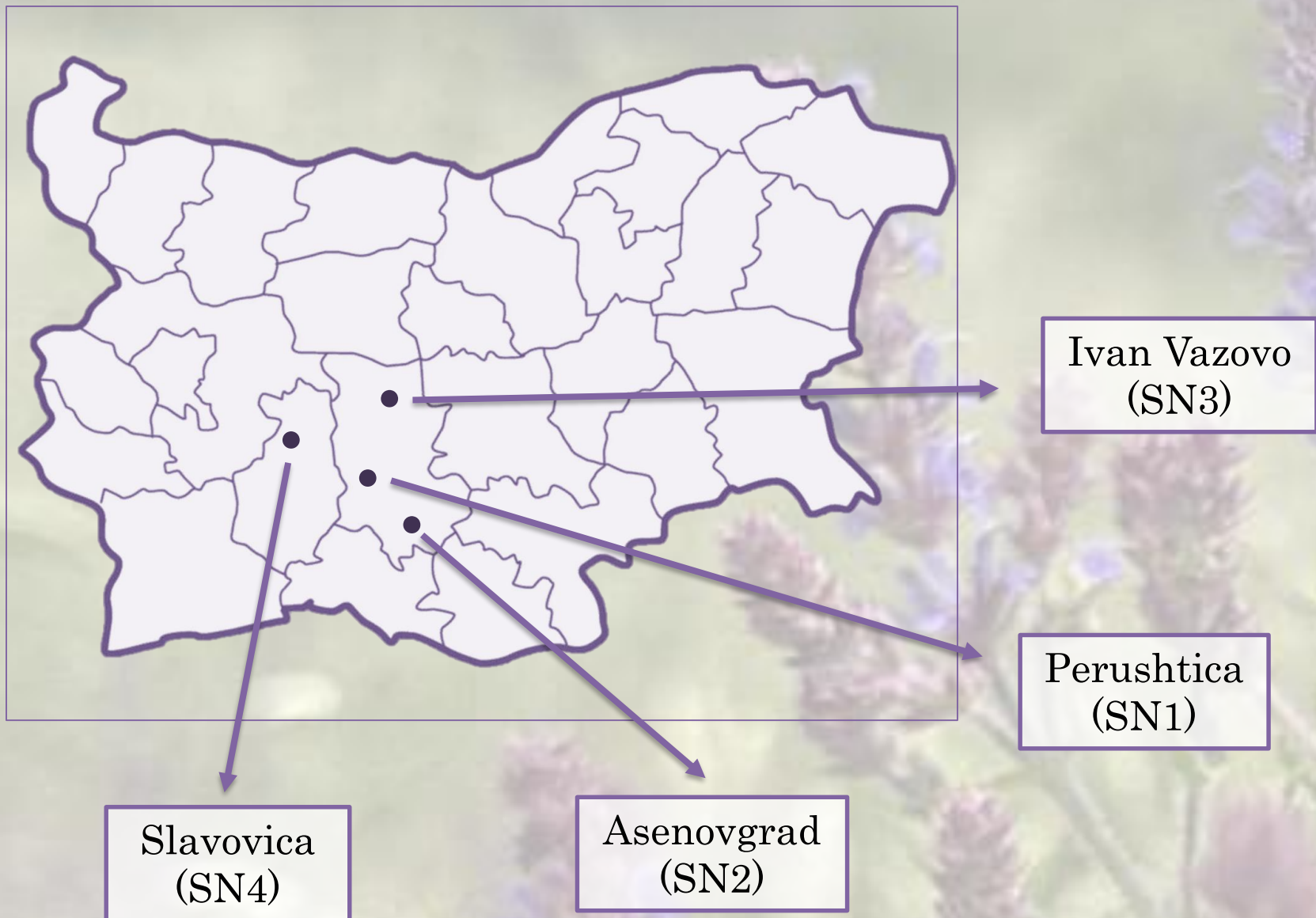
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INTRODUCTION & AIM

- *Salvia nemorosa* L. (Lamiaceae) is a perennial herbaceous plant that typically attains a height of 30 to 50 cm and is native to extensive areas of Central Europe and Western Asia.
- Morphologically, *S. nemorosa* L. is distinguished by dark purple stems that support elongated, erect inflorescences. The flowers exhibit a range of colors, including white, pale pink, mauve, blue, and purple. The flowering period generally occurs from June to October.
- Aim of the study – to determine the chemical composition of essential oils, isolated from *S. nemorosa* L. from four different locations in Bulgaria:



RESULTS & DISCUSSION

Table 1. Major volatile constituents identified in wild *S. nemorosa* L. EOs.

Main compounds	SN1 (%)	SN2 (%)	SN3 (%)	SN4 (%)
Germacrene D	25.74	37.08	17.64	41.34
β-Caryophyllene	22.38	13.91	9.50	11.65
Sabinene	6.88	0.11	21.89	0.16
Caryophyllene oxide	5.77	7.35	1.05	4.66
Terpene classes:				
Monoterpene hydrocarbons (MH)	11.76	0.41	34.80	0.35
Oxygenated monoterpenes (MO)	3.12	-	3.08	0.06
Sesquiterpene hydrocarbons (SH)	67.61	66.76	50.96	70.81
Oxygenated sesquiterpenes (SO)	13.09	25.58	8.19	15.53
Diterpene hydrocarbons (DH)	0.41	2.44	0.56	5.21
Others	-	0.15	0.12	-
Total identified (%)	95.99	95.34	97.71	91.96

Figure 1. Representative GC-MS chromatogram, showing the presence of the major sesquiterpenes β-caryophyllene and germacrene D

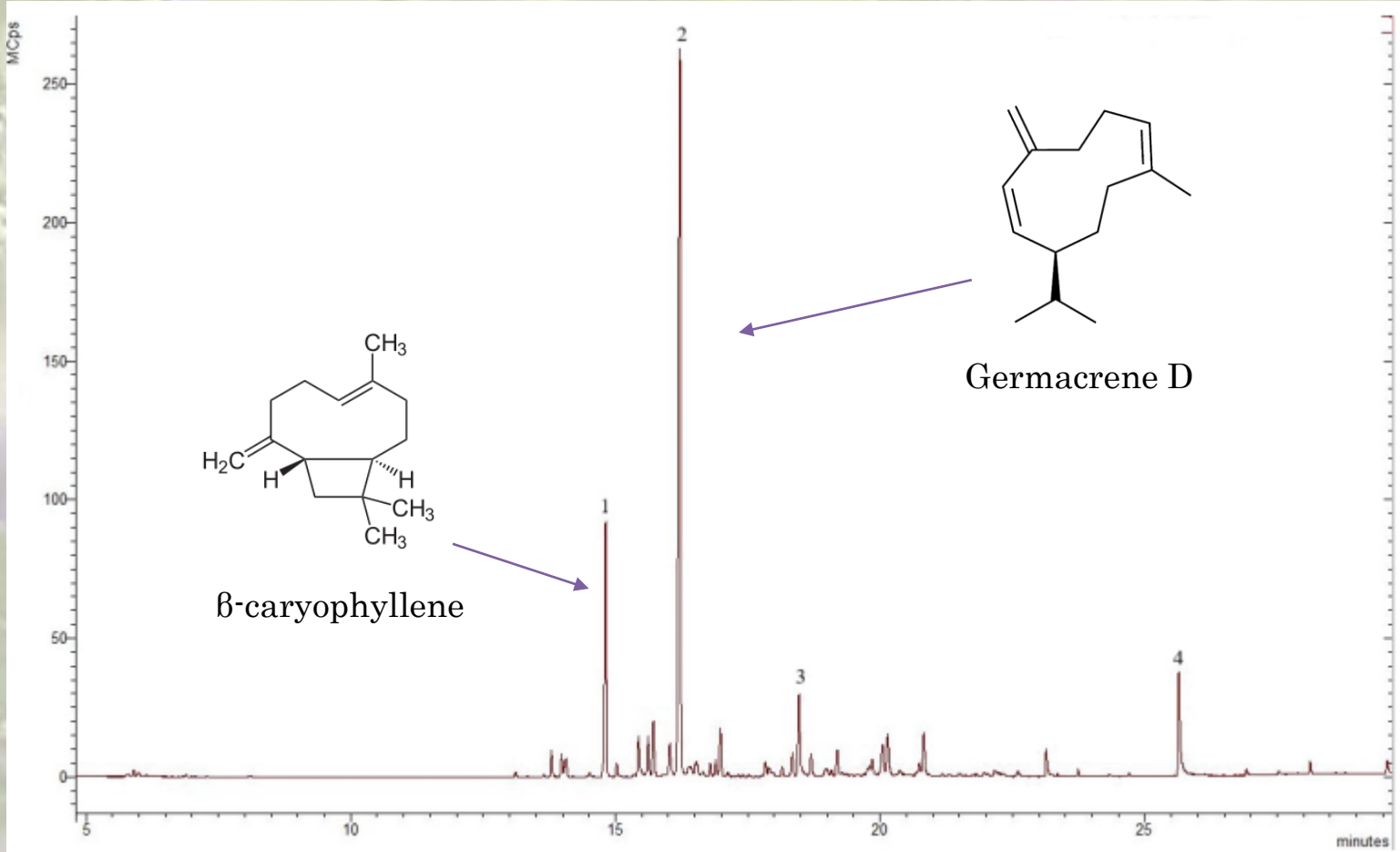
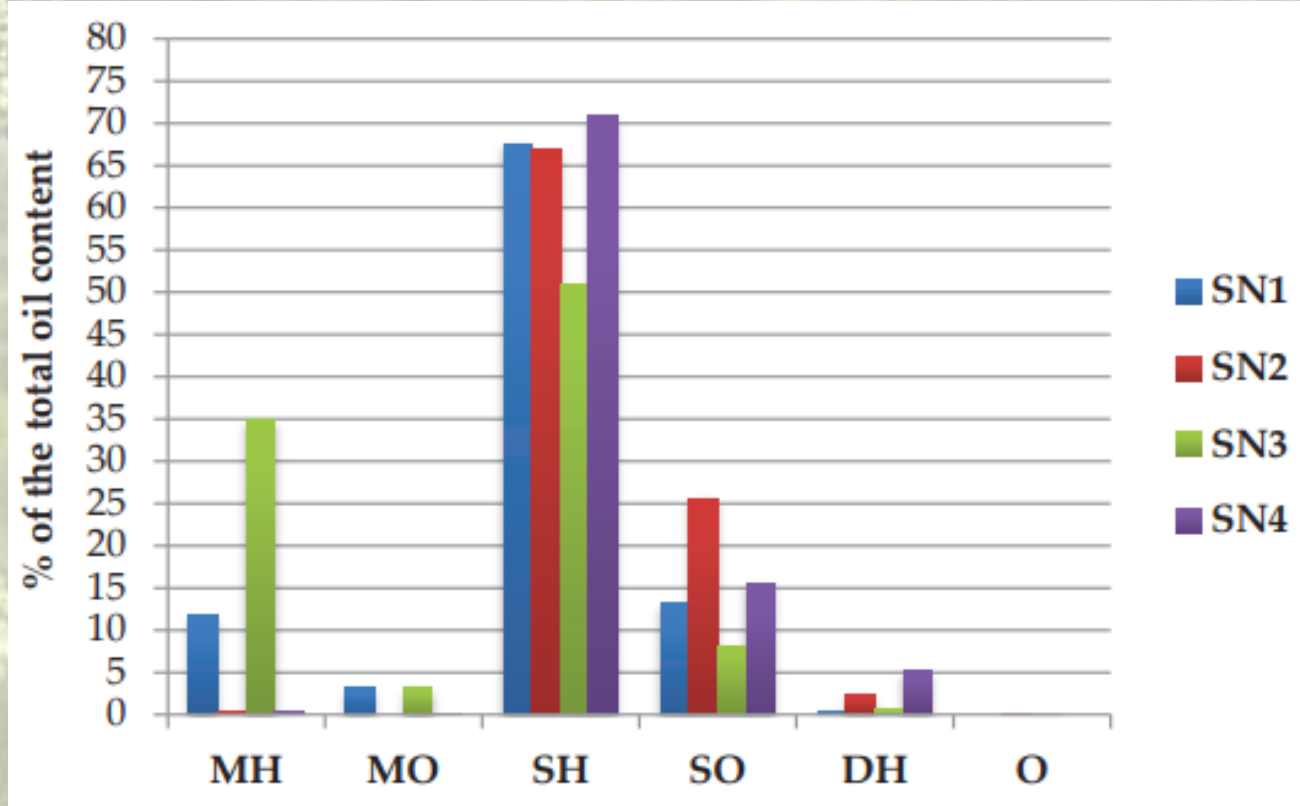


Figure 2. Main classes of volatile compounds in the analyzed SN1, SN2, SN3, and SN4 samples, where MH – monoterpene hydrocarbons; MO – oxygenated monoterpenes; SH – sesquiterpene hydrocarbons; SO – oxygenated sesquiterpenes; DH – diterpene hydrocarbons; O – others.



METHOD

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Hydrodistillation, 4h
(Clevenger-type apparatus)

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Isolated essential oil

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GC-MS



CONCLUSION

The chemical profile of *Salvia nemorosa* L. in different regions of Bulgaria shows the same dominant active compounds, but in varying percentages. The predominant high levels of β-caryophyllene and germacrene D in *Salvia nemorosa* L. suggest a potential source of bioactive sesquiterpenes.